ISSN-2320-9615 (Print) ● ISSN-2321-1024 (Electronic)

Volume 7 / Number 1 / January-June 2019

INTERNATIONAL JOURNAL OF CONTEMPORARY SURGERY

Website: www.ijocs.in

International Journal of Contemporary Surgery

International Journal of Contemporary Surgery is a double blind peer reviewed international journal which has commenced its publication from January 2013. The journal is half yearly in frequency. The journal covers all aspects of Surgical practice. The journal has been assigned **ISSN 2320-9615 (Print Version) and ISSN 2321-1024 (Online Version).** The journal is Indexed in many international data bases.

Website: www.ijocs.in

ISSN 2320-9615 (Print Version) and ISSN 2321-1024 (Online Version). Frequency: Half Yearly

Editor

Dr. R.K. Sharma
Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

Printed, published and owned by

Dr. R.K. Sharma
Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

Published at

Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

International Journal of Contemporary Surgery

CONTENTS

Volume 7, Number 1 **January-June 2019**

DOI Number: 10.5958/2321-1024.2019.00001.1

Epidemiological Study of Breast Lump Cases

Ankit Sahu[1], Abhinav Jauhari[1], Kalayansunda Suresh[2]

[1]Assistant Professor, [2]Associate Professor, Department of Surgery, School of Medical Sciences & Research (Sharda University), Greater Noida (U.P.)

ABSTRACT

Background: In the present era of increased awareness and fear about malignancy in the general population, and promotion of self breast examination, many patients are presenting to the clinic with history of breast lump. They expect proper guidance and effective treatment from the treating surgeon.

Lesions in the breast vary from the most common and benign condition, such as fibroadenoma, to various commoner carcinomas, like infiltrating ductal carcinomas, to rarer entities, such as malignant transformation of phyllodes tumor and carcinoid tumors.

Method: The aim was to study the epidemiology of breast lumps cases attending the surgery OPD and to study the distribution of various pathological entities presenting as breast lump.

The focus of this study was for a better understanding of the breast lump which will help to cure more and more patients at an earlier stage

Results: Patients presenting with the complaints of breast lump, most common age group affected was of 21-30 years. Incidence of the benign lumps was significantly higher than other lumps i.e. 44%, closely followed by malignant lumps i.e. 36% and inflammatory lumps i.e. 10%. Benign breast lump had peak incidence in the age group of 21-30 years, fibroadenoma being the most common entity (40.98%). The upper-outer quadrant was the most frequently involved (57%). There was no significant association between accuracy of FNAC in diagnosis of breast lump in malignancy and non-malignancy ($p>0.05$). The accuracy of diagnosing malignancy was 87.81%, whereas for benign lumps it was 83.33%.

Conclusions: Benign breast lesions were the commonest cause of the breast lump before the age of 40yrs. Among the benign lumps fibroadenoma was the most common cause (40.98%), and had a peak in the age group of 21-30yrs (age group of 16-45yrs) with varying number and size. The upper and outer quadrant was the most common site of primary tumor.

Keywords: *Breast Lump, Fibroadenoma, Malignancy.*

INTRODUCTION

The incidence of breast cancer is low in India as compared to developed countries, but the total number of cases and the net mortality is high probably because of the large population, inadequate screening programs, and lack of education. Cancers of uterine cervix and breast are the two leading cancers sites among Indian women with 134,420 incident cases, 338,010 five yearly prevalence and 115,251 incident cases, 315,679 five yearly prevalence respectively[1] and premenopausal patients constituting about 50% of all patients. Breast cancer incidence peaks among women in forties in Asia and it peaks in sixties in the western world.

By 2020, breast cancer incidence will overtake cervical cancer as the most common cancer in women in India and 70% of the world's cancer cases will be in poor countries, with a fifth in India[2].

Corresponding author:
Dr. Abhinav Jauhari,
E-mail: abhinavjauhari05@gmail.com
Mobile Number: +919599751001

Non-malignant tumours of the breast are one of the most confusing areas of surgical practice resulting from undue but understandable preoccupation with malignancy. This confusion results from:

Incomplete appreciation of the normal process of development and involution.

Use of different terms for the same condition, e.g. Fibroadenosis/ Hyperplastic Cystic disease/Hormonal mastopathy/Chronic mastitis etc.[3]

Mixing of clinical and pathological/histological concepts.

Also a significant number of women having no recognizable disease have clinical irregularity to necessitate evaluation. Accurate history and clinical evaluation are still the most important methods of detecting breast disease. A number of investigations are also now a useful guide in this scenario. The prognosis of a breast lump is difficult to express, especially in malignancy where many factors influence the result, but the principal significance is to the stage malignancy and method of therapy. For this it is necessary to detect the breast lump at the earliest and give proper and prompt treatment to achieve a better outcome for the patient.

On this background, I am undertaking this study for a better understanding of the breast lump which will help us cure more and more patients at an earlier stage.

METHOD

This study was conducted on 100 female patients with breast lumps admitted in the wards or attending surgical outpatient department in the Sharda Hospital, Greater Noida. Each patient was study in detail with relevant clinical history, examination, laboratory investigations and management.

Patients were assessed by gold standard way of triple assessment (clinical examination, imaging via USG/Mammogram, cytology) however women who were above 40 years of age and clinical suspicion of malignancy, were assessed via Mammography also. FNAC is the diagnostic investigation with accuracy but for confirmation of cases like granulomatous inflammation and duct ectasia biopsy was needed. The study was conducted from August 2016 to August 2018. The cases were classified as follows:

Inflammatory lumps

Benign lumps

Malignancy suspected in lumps

Malignant lumps

Other lumps

Inclusion criteria:

All patients presenting to surgery OPD with a palpable breast lump.

Exclusion criteria:

Patients in whom there was other breast related complaint but no palpable lump, Post operative patients of breast lump.

Method of collection of data:

Institutional ethical clearance was obtained. Detailed clinical history and thorough physical examination were done in each patient. Complete pre-operative work-up investigations and medical fitness for surgery were obtained. Each patient was informed about the procedure and informed consent was obtained. Primary diagnoses were obtained by fine-needle aspiration cytology, or other open biopsy procedures.

RESULTS

Amongst all the patients presenting with the complaints of breast lump, most common age group affected was of 21-30 years, closely followed by 31-40 years and 41-50 years respectively.

The breast lumps were divided into 5 categories. Incidence of the benign lumps was significantly higher (Value of $\chi^2 = 68.821$, $p<0.001$) than other lumps i.e. 44%, closely followed by malignant lumps i.e. 36% and inflammatory lumps i.e. 10%.

Inflammatory lumps were most common in the age group of 21-30 years. Breast abscess were found in age group of 20-50yrs.

Benign breast lump had peak incidence in the age group of 21-30 years, fibroadenoma being the most common entity(40.98%) followed by Fibroadenosis (18.03%).

Malignant breast lump had the peak incidence in the age group of 41-50 years, followed by >70years and 61-70 years, IDC (Infiltrating Ductal Carcinoma) being the most common entity.

Inflammatory lumps were by far most common in married women, breast abscess only limited to married women in our study. Benign lumps were more common in married women. Malignant lumps were almost equally distributed among both groups.

By applying Chi-Square test there is no significant association between parity and various breast lump cases ($p>0.05$). menstrual status and various breast lump cases ($p>0.05$)marital status and various breast lump case s ($p>0.05$).

The upper-outer quadrant was the most frequently involved (57%), followed by equal distribution in Lower-outer, Upper-inner, and Lower-inner quadrants. Inflammatory lumps were most common in central quadrant.

There was no significant association between accuracy of FNAC in diagnosis of breast lump in malignancy and non-malignancy ($p>0.05$). The accuracy of diagnosing malignancy was 87.81%, whereas for benign lumps it was 83.33%. In 23.70% FNAC was not conclusive, and required biopsy for confirmation. Out of the 6 non-conclusive and 4 suspicious for malignancy, 4 turned out to be malignant, 5 benign and 1 inflammatory.

DISCUSSION

Through the present study a brief history on lump in breast, anatomy, physiology of breast, pathology of various breast lumps and breast cancer and different staging systems are highlighted. Different biopsy and cytology procedures their merits and disadvantages are written. Imaging modalities and interventional procedures are discussed. Treatment of carcinoma breast based on tumor staging is also discussed.

This study includes 100 cases of lump in breast during the period of two years August 2016 to August 2018 in our department.

A detailed workup was made according to Performa and based on the observations given in the previous tables the following conclusions were made:

In our study, Benign breast lumps peaked in age group of 21-30 years similar to study by Sushila khanna et al[4] with peak incidence of benign breast lumps in the 21-30 years age group.Breast lump were divided into 5 categories: inflammatory, benign, suspected malignant, malignant and others. Incidence of inflammatory lumps (abscess and mastitis) was 10%, amongst which breast abscesses were 6% and other inflammatory condition were 4%.Benign tumours were 44%, suspected malignant lumps were 4%, malignant lumps 36% and other lumps (chronic non-specific dermatitis, traumatic fat necrosis, prominent axillary tail) were 6%.

In a study conducted by Haque et al[5] of 200 breast lump cases, 27.5% were benign and 48% were malignant. S.J.Baptist et al[6], in their study of 164 breast lumps reported an incidence of 52 % benign lumps and 37% malignant lumps.The incidence of malignancy was comparable to Baptist et al.

In present study, fibroadenoma constituted 40.98 % of all benign lumps. Haque et al[5] had an incidence 55.76 % of fibroadenoma whereas Gupta J.C. et al[7] (1983) reported an incidence of 64% fibroadenoma .

Out of 100 cases taken 57% had lumps in the upper and outer quadrant. Next most commonly involved quadrant was the lower and outer with 9%. 24% malignant lumps and 24% benign lumps were seen in upper outer quadrant. 4% of inflammatory lumps were situated centrally. Haque51 et al showed 32.7% involvement of upper outer quadrant and 18% involvement of lower outer quadrant. Haagensen[8] in 1980 showed 40 % involvement of upper outer quadrant and 10 % of lower outer quadrant. Tyagi et al[9] showed 33.3 % involvement of upper outer and 17.7% of lower outer quadrant.

In this study, FNAC was a part of routine investigation procedure in all cases. Accuracy of diagnosing malignancy was 87.81 % whereas for benign lumps it was 83.33%. In 23.70% FNAC was not conclusive and required biopsy for confirmation. H.A.Wani[10] et al 1975 had 82% accuracy in the diagnosis. Wollenberg et al[11] in 1989 had 91.3% accuracy in diagnosing breast lumps.

CONCLUSION

Benign breast lesions were the commonest cause of the breast lump before the age of 40yrs (38%).

Among the benign lumps fibroadenoma was the most common cause (40.98%), and had a peak in the age

group of 21-30yrs (age group of 16-45yrs) with varying number and size in all quadrants of breast.

The upper and outer quadrant was the most common site of primary tumor i.e. 64.10%.

We had an accuracy of 83.72% in diagnosing benign breast lumps by FNAC, and 11.62% were non-conclusive. Diagnosis by FNAC is reliable yet confirmation by biopsy is required in women >35yrs and with unusual presentation.

Ethical Clearance: Taken from Institutional ethical clearance committee.

Source of Funding: Self

Conflict of Interest: None

REFERENCES

1. Asthana S, Chauhan S, Labani S. Breast and cervical cancer risk in India: An update. Indian J Public Health 2014; 58:5-10
2. Nigam JS, Yadav P, Sood N. A retrospective study of clinico-pathological spectrum of carcinoma breast in a West Delhi, India. South Asian J Cancer 2014; 3:179-81
3. Bailey and Love's Short Practice of Surgery. 25th Ed. Arnold Publishers, 2009.
4. Khanna et al: Spectrum of benign breast disease. Ind. J. Surg. June 1988.
5. Haque R., Tyagi S.P., Khan M.H., Gahlaut Y.V.S. — Breast lesions. A clinicopathological study of 200 cases of breast lumps. Ind J Surg. 42:419-425, 1980
6. Baptist S.J., Thomas J.A. et al: Lesions of the breast. J. of Ind. Med. Asso. 1:1973, 127-131.
7. Gupta J.C., et al: Breast lumps in Jabalpur area. Ind. J. Surg. May 1983, 268-273.
8. Haagensen C.D.: Diseases of the Breast, 3rd Ed. Philadelphia, W.B. Saunders Company 1986
9. Tyagi S.P. et al: Carcinoma Breast: Its incidence and histomorphological variants at Aligarh Ind. J. of Surg. Dec. 1980.
10. Wani N.A., et al: Role of FNAC in Management of Breast Lump Ind. J. Surg., June 1991.
11. Wollenberg, Caya and Clowry: FNAC of Breast. ActaCytologica, may-June; 1985 Vol. 29 .No. 3.

DOI Number: 10.5958/2321-1024.2019.00002.3

A Retrospective Evaluation of Pattern of Injuries Sustained During Road Traffic Accident in a Tertiary Care Hospital

Krishna Murthy V R[1], Sachin[2], Basavaraju G N[2], Vinay H D[2], Megha K G[3], Namratha[3]

[1]Associate Professor, [2]Assistant Professor, Department of General Surgery, HIMS, Hassan, [3]CRHS, HIMS, Hassan

ABSTRACT

Background: Expansion in road network, motorization, and urbanization in the country has been accompanied by a rise in road accidents leading to road traffic accidents (RTAs). RTA is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Road traffic injury (RTI) is major but neglected public health problem in both developing and developed countries. **Objective**: To study the factors involved in the Road Traffic Accidents and nature, type and mode of occurrence of Accidents. **Methodology:** The study is a retrospective analysis of cases of RTAs victims admitted in HIMS, Hassan (Karnataka) during the period between Jan 2016 and Dec 2016. The information about the patients admitted as cases of RTAs were ascertained from the hospital records. **Results**: From the Records a total of 559 cases of road traffic Accidents were analysed. In our study majority (47.4%) of the victims were in the middle age between the age group of 21-40 years. Around 63.1% of the accidents had occurred on state highways and 19.1 % in the cross road junctions. The intake of Alcohol by the persons who met with accident was found to be significantly associated with the age group of the study subjects and Gender. **Conclusion**: Road safety is a multifactorial public health issue with many factors involving in it. The impact of mortality and morbidity of Road traffic accident leads to great loss to the families and society. RTA has become an emerging problem in developing countries taking lives of the productive age group of the society

Keywords: *Road Traffic Accidents, Retrospective, Injuries, Public Health*

INTRODUCTION

Expansion in road network, motorization, and urbanization in the country has been accompanied by a rise in road accidents leading to road traffic accidents (RTAs). RTA is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Road traffic injury (RTI) is major but neglected public health problem in both developing and developed countries. World Health Statistics 2008 cited in Global Status Report on Road Safety states that RTIs in 2004 were the 9 th leading cause of death and at current rates by 2030 are expected to be the 5 th leading cause of death, overtaking diabetes and Human immunodeficiency virus infection/acquired immunodeficiency syndrome.

According to the National Crime Record Bureau (2010), the number of vehicular accidents was 430600 resulting in 133938 deaths and 470600 injuries, thereby accounting for 37.2% of all accidental deaths due to unnatural causes. [1]

Road traffic crashes are a major cause of misery, disability, and death globally, with a disproportionate number occurring in developing countries.[2,3] It has been predicted that by 2020, RTIs will rank as high as third among causes of disability adjusted life years lost. [3,4,5.]

Injuries related to RTAs contribute significantly to the number of trauma admissions at Tertiary Care Centre, taking out a significant number of lives and resources. We need to know more about the numbers and

Corresponding Author:
Dr Sachin
Assistant Professor, Department of General Surgery, HIMS, Hassan statisticsclinic2018@gmail.com

types of injuries and about the circumstances in which these injuries occur. This information will indicate just how serious the injury problem is and where, exactly, prevention measures are most urgently needed.

OBJECTIVES

To study the factors involved in the Road Traffic Accidents and nature, type and mode of occurrence of Accidents

MATERIALS AND METHOD

The study is a retrospective analysis of cases of RTAs victims admitted in HIMS, Hassan (Karnataka) during the period between Jan 2016 and Dec 2016. The information about the patients admitted as cases of RTAs were ascertained from the hospital records. Case sheets of RTAs victims from the medical records sections were read and the necessary details were sought in terms of age, sex, residence, season of accidents, place, alcohol intake, type and site of injury. The cases with incomplete details were not taken into consideration.

Inclusion Criteria: All the RTA patients who got admitted to the HIMS, Hassan, and the data collected from the Accident Register maintained in the casualty and also the case sheets of the patients through Medical Records Department.

Exclusion criteria: Cases treated as OPD basis and Brought dead cases to the hospital.

RESULTS

From the Records a total of 559 cases of road traffic Accidents were analysed.

Table 1: Profile of Accidents in our study.

Profile of accidents		**Frequency**	**Percent**
Age group	Less than 10 years	13	2.3
	11-20 Years	73	13.1
	21 - 30 Years	125	22.4
	31 - 40 Years	140	25.0
	41- 50 Years	97	17.4
	51 - 60 years	57	10.2
	> 60 years	54	9.7
sex	Male	446	79.8
	Female	113	20.2
Time of accident	6 AM to 12 PM	104	18.6
	12 PM to 6 PM	206	36.9
	6 PM to 12 AM	224	40.1
	12 AM to 6 AM	25	4.5
Place of accident	National Highway	70	12.5
	State Highway	353	63.1
	Cross Road	107	19.1
	Unknown	29	5.2

Cont... **Table 1: Profile of Accidents in our study.**

Type of vehicle	Two Wheelers	317	56.7
	Three Wheelers	61	10.9
	Four Wheelers	105	18.8
	Others	76	13.6
Alcohol intake	Yes	228	40.8
	No	331	59.2

In our study majority (47.4%) of the victims were in the middle age between the age group of 21-40 years. 2.3% of the study population aged less than 10 years and 9.7% were aged more than 60 years. Nearly 79.8% of the victims were males and 20.2% were female victims. Nearly 40.1% of the victims had met with accident between 6 PM to 12 AM and then followed by 12 PM to 6 PM. Around 63.1% of the accidents had occurred on state highways and 19.1 % in the cross road junctions. Majority of the persons who met with an accident were on Two Wheelers followed by Four Wheelers. Nearly 40.8% of the subjects had history of Alcohol Consumption during the time of Accident. Head and Neck was the most common type of injury seen in our study followed by lower limb injuries.

Table 2: Association of Alcohol with Various factors of accidents.

		Alcohol				**Chi square**
	Yes		**No**			
	Frequency	**%**	**Frequency**	**%**		
Age group	Less than 10 years	0	0.0%	13	3.9%	Chi Square -15.06 Df- 6 p-0.020*
	11-20 Years	27	11.8%	46	13.9%	
	21 - 30 Years	62	27.2%	63	19.0%	
	31 - 40 Years	61	26.8%	79	23.9%	
	41- 50 Years	35	15.4%	62	18.7%	
	51 - 60 years	23	10.1%	34	10.3%	
	> 60 years	20	8.8%	34	10.3%	
Sex	Male	204	89.5%	242	73.1%	Chi Square -22.4 Df- 1 p-0.000*
	Female	24	10.5%	89	26.9%	
Time	6 AM to 12 PM	23	10.1%	81	24.5%	Chi Square -43.05 Df- 3 p-0.000*
	12 PM to 6 PM	67	29.4%	139	42.0%	
	6 PM to 12 AM	125	54.8%	99	29.9%	
	12 AM to 6 AM	13	5.7%	12	3.6%	
place	National Highway	36	15.8%	34	10.3%	Chi Square- 6.26 Df- 3 p-0.100
	State Highway	142	62.3%	211	63.7%	
	Cross Road	36	15.8%	71	21.5%	
	Unknown	14	6.1%	15	4.5%	
Vehicles	Two Wheelers	149	65.4%	168	50.8%	Chi Square- 13.85 Df- 3 p-0.003*
	Three Wheelers	21	9.2%	40	12.1%	
	Four Wheelers	29	12.7%	76	23.0%	
	Others	29	12.7%	47	14.2%	

The intake of Alcohol by the persons who met with accident was found to be significantly associated with the age group of the study subjects and Gender. The time of accident and the type of the vehicle and the consumption of Alcohol was found to be statistically very significant.

Table 3: Outcome of the Patients

		Frequency	Percent
Treatment	Conservative	402	71.9
	Surgical	157	28.1
Reference	Yes	63	11.3
	No	496	88.7
Death	No	496	88.7
	Not Know	63	11.3

Nearly 71.9% of the study subjects had underwent conservative type of treatment in the hospital and 28.1% needed surgical intervention in our hospital at any higher centre. Only 11.3% of the accident victims were required to refer to higher centre for further treatment. Nearly 63 (11.3%) of the cases we couldn't determine the outcome of the treatment.

DISCUSSION

A total of 559 Cases were analysed from the records of the road Traffic accident which was maintained in the Department of Medical Records at Hassan Institute of Medical Sciences, Hassan.

The commonest age group involved in the accidents was from 21-40 years of age with more male predominance. This age group is the most active age group and working group in the society who are always in the hurry with respect to the job business or any kind of the work. the male population are the most common people who are using vehicle when compared to female population.

The findings of our study was found to be similar to the study findings of the Seth Sharad et al, Ganveer G B et al [6] and Chalya P et al [7]. This accident in these age group leading to the deva sting consequences on the family. Speed and reckless driving was one of the major reason for the accidents. Various factors like bad roads, inadequate lightings, badly maintained vehicles could also be the reasons for the accidents.

The most common time of accidents was seen in the evening between 6 PM to 12 Pm in our study. This is time of the day when the daylight diminishes and the visibility reduced significantly as times passes leading to the accidents. Further to this the consumption of Alcohol also increase significantly among the people and drive with the effect of the alcohol. Nearly 41% of the study subjects in our study had consumed alcohol. Seth Sharad et al [8, D] Souza C Rao et al [9] and Mohammad Zeisian et al [10] also found the time of accidents was more in the evening as its seen in our study. The percentage of alcohol consumption seen among the accident victims in our study was much higher when compared to the study findings of Aditya Madhab et al [11], Sharma et ak 12 and Singh Y N et al[13.]

The site of injury in most of the victims was on the head and neck followed by the lower extremists. These injuries are the most common type of injuries sustained in road traffic accidents either by the pedestrians or the drivers. These findings in our study was similar to the study findings of Mohammad Zeeshan [10], Jha N et al [14] and Ostrom M et al.[15]

The influence of alcohol among the study subjects was found to one the major factor responsible for the accident and it was found to statistically significant also. In the study done by Jani C B [16], Rao Y [17] and Aditya et al.[11]

The association of mortality usually in the road traffic accidents will be due to the head injury and haemorrhagic shock due to excessive bleeding.

CONCLUSION

Road safety is a multifactorial public health issue with many factors involving in it. The impact of mortality and morbidity of Road traffic accident leads to great loss to the families and society. RTA has become an emerging problem in developing countries taking lives of the productive age group of the society. Strict rules and regulations regarding the speed limit and maintaince of vehicles need to be implemented and followed strictly. A multi-Disciplinary Approach consisting of public education and standard operating procedure to be followed following Road Accidents in the treatment and also in the rehabilitation of such persons who met with an accident.

Limitation of Study:

This is a retrospective study; hence data could be verified or collected from the individuals. The data need to collected directly from the victims for the better understanding of the epidemiology of Road Traffic Accidents.

REFERENCES

1. National Crime Record Bureau. Annual Report on Road Accidents; 2010.
2. Nantulya VM, Reich MR. The neglected epidemic: Road traffic injuries in developing countries. BMJ 2002; 324:1139-41.
3. Lagarde E. Road traffic injury is an escalating burden in Africa and deserves proportionate research efforts. PLoS Med 2007;4: e170.
4. Ghaffar A, Hyder AA, Masud TI. The burden of road traffic injuries in developing countries: The first national survey of Pakistan. Public Health 2004;118: 211-7
5. Museru LM, Leshabari MT. Road traffic accidents in Tanzania: A 10-year epidemiological appraisal. East Cent Afr J Surg 2002; 7:23-6.
6. Ganveer GB, Tiwari RR. Injury pattern among non-fatal road traffic accident cases: A cross-sectional study in Central India. Indian J Med Sci 2005; 59:9-12.
7. Chaya PL, Mabula JB, Dass RM, Mbelenge N, Ngayomela IH, Chandika AB, et al. Injury characteristics and outcome of road traffi c crash victims at Bugando Medical Centre in Northwestern Tanzania. J Trauma Manag Outcomes 2012; 6:1.
8. Sharad S, Keshav A, Parnnika A. A retrospective study of road traffi c accidents - injury characteristics, management and outcome at Rohilkhand Medical College & Hospital, Bareilly. Inter J Medical Sci Res Prac 2015;2(2):73-76
9. Dsouza C, Rao VV, Kumar A, Diaz E. Epidemiological trends of trauma in tertiary care Centre in Dakshina Kannada district of Karnataka, India. J Clin Diagn Res 2014; 8:66-8
10. Raza MZ, Ahmed F, Ahmed A, Ghani A, Malik L, et al. (2013) Title of the Study: A Retrospective Analysis of the Pattern and Severity of Injuries in Victims of Road Traffic Accidents in Karachi, Pakistan during 2010-2011. Emergency Med 3: 144. doi:10.4172/2165-7548.1000144.
11. Aditya Madhab Baruah, Rituraj Chaliha. A Study of Incidence of Alcohol Use in Fatal Road Traffic Accidents. J Indian Acad Forensic Med.2015;37(1):12-16.
12. Sharma BR, Singh G, Harish D and Vij K. Developing cost effective programmes for intoxicated trauma patients: A formidable challenge for hospitals. Hospital Today. 2002; 7 (7):313-16.
13. Singh YN, Bairagi KK, Das K C. An Epidemiological Study of Road Traffic Accident Victims in Medico-legal Autopsies JIAFM, 2005; 27 (3). 166-169.
14. Jha N, Srinivasa DK, Roy G, Jagdish S. Injury pattern among road traffi c accident cases: A study from South India. Indian J Community Med 2003; 28:85
15. Oström M, Eriksson A. Pedestrian fatalities and alcohol. Accid Anal Prev.2001; 33: 173-180.
16. Jani C. B, Gupta Sanjay, Barot Hitendra, Gadhavi Jaydeep.Retrospective study of cases of drunkenness with emphasis on procedure and interpretation of results. 2008. JIAFM, 29(3);128-135.
17. Rao Y, Zhao Z, Zhang Y, Ye Y, Zhang R, Liang C, Wang R, Sun Y, Jiang Y. Prevalence of blood alcohol in fatal traffic crashes in Shanghai. Forensic Sci. Int. 2013 Jan 10; 224 (1-3):117-22

DOI Number: 10.5958/2321-1024.2019.00003.5

A Prospective Randomized Study of Large Proximal Ureteral Stones: Uretero-lithotripsy v/s Laparoscopy

Sahaj Garg[1], Naveen Kumar Agarwal[2], Preeti Gupta[3]

[1]Assistant Professor, [2]Associate Professor, Department of General Surgery, Muzaffarnagar Medical College, Muzaffarnagar, [3]Consultant Radiologist, Kare Imaging Centre, Muzaffarnagar

ABSTRACT

Background: Upper one third ureteric stones has plethora of treatment, choice being medical expulsive therapy, shock wave lithotripsy (SWL), ureteroscopy (URS), laparoscopic and open ureterolithotomy. With the advent of newer generation lithotripters, flexible ureteroscopes and miniature semi-rigid ureteroscopy, most of the upper ureteral stones can be managed with a minimally invasive approach. However, large ureteral stones are a challenge to minimally invasive techniques. The optimal management of large proximal ureteral stones (>15mm) is still to be defined. **Method:** A total of 39 cases of large proximal ureteral stones (>15mm) were included in this prospective study. All patients were randomly divided in to two groups: Ureterolithotripsy with Pneumatic lithotripter (URS-P) - 21 cases and Transperitoneal Laparoscopic Ureterolithotomy (LAP-TPUL)-18 cases. **Results:** Mean stone size was 16.79±1.51and 17.14±1.96 in URS-P and TPUL respectively. The overall stone-free rate was 13/21(61.9%) for URS-P versus (17/18) 94.4% for TPUL. Auxiliary procedure rate was higher in URS-P than in TPUL (38 % vs. 5.6% respectively). The complication rate was 22.2% in TPUL versus 23.8% in URS-P. Mean procedure time was higher in Lap-TPUL group as compared to URS group (84.07±16.80 vs 65.17±12.78 minutes). Hospital stay was 4.16±0.67 days in Lap TPUL group and 1.32±0.43 days in URS group ($p<0.0001$). **Conclusion**: For large proximal ureteral stones of size greater than 15mm, Laparoscopic Ureterolithotomy has a greater stone clearance rate, lesser need for auxiliary procedure, less complication rate but higher procedure time and hospital stay as compared to URS. We strongly recommend Laparoscopic ureterolithotomy for large proximal ureteral stones.

***Keywords**: Ureteral stones, Uretero-lithotripsy, Laparoscopy.*

INTRODUCTION

Urolithiasis is the third most common affliction of the urinary tract. Minimally invasive therapies in the form of endoscopic surgery in conjunction with the advent of shock wave lithotripsy have diminished the role of open stone surgery.[1]

Ureteral stones are a major cause of morbidity and anxiety among urologic patients. Currently, ureteroscopy and shock-wave lithotripsy are regarded by many as the first-line treatment modalities for the management of ureteral stones, and the exact role of laparoscopic ureterolithotomy remains poorly defined.[2]

Stones that are larger than 5 mm in diameter have a low probability of spontaneous passage and over 50% of such patients will require some type of surgical intervention. A patient who has a ureteric stone with a low probability of spontaneous should be informed of the relative benefits and risks associated with each type of treatment.[2,3]

For the management of the upper ureteric stones, it is recognized that the advent of new non-invasive/ minimally invasive procedures for treating urinary stones, such as ESWL, flexible ureterorenoscopy, percutaneous surgery has resulted in a marked decrease in morbidity.

Corresponding Author:
Naveen Kumar Agarwal
Associate Professor, Department of General Surgery, Muzaffarnagar Medical College, Muzaffarnagar,
E-mail: drnaveenagarwal@gmail.com

Laparoscopic ureterolithotomy is primarily indicated as a salvage procedure in the event of a failed ureteroscopy and urerteric stones where open surgery is contemplated.[3]

Many studies[4-6] have shown that laparoscopic ureterolithotomy represents a safe and effective treatment option for ureteral stones either as primary for large impacted stones or as a salvage procedure after failed shock wave lithotripsy or ureteroscopy.

This procedure fulfils the advantages of minimal blood loss and analgesia requirements, good cosmetic appearance, and short hospital stay and convalescence period

MATERIALS AND METHOD

This prospective study which consists of management of large proximal ureteral stones using ureterolithotripsy versus laparoscopy in 39 cases was conducted at Department of General Surgery, Muzaffarnagar Medical College, Muzaffarnagar between November 2014 to October 2016. Patients randomly divided into following groups:

Group A: Ureterolithotripsy with Pneumatic lithotripter(URS-P) - 21 cases.

Group B: Transperitoneal Laparoscopic Ureterolithotomy (LAP-TPUL)-18 cases.

Inclusion criteria:

- Patients in the age group between 15 yrs to 60 yrs.
- Patients diagnosed to have proximal ureteric stone measuring >15mm on USG.

Exclusion criteria:

- Pregnancy
- Patients with active urinary tract infection, congenital anomalies and previous SWL, stent placement or open surgery of the ureter were excluded.

After preliminary investigations, confirmation of diagnosis and pre-anaesthetic check-up, patients were subjected to the required procedure. Written and informed consent was taken from all patients for the procedure to be undertaken. All patients were given intravenous antibiotic prophylactically. Operative time was recorded from induction of anesthesia till completion of surgery. Stone size, which was defined as the maximal transverse diameter on USG, and location of the stone were identified by intravenous urography (IVU) in all patients. Stone clearance was labelled when there are no residual stone in postoperative X-ray of the kidney, ureter, and bladder (KUB). DJ stenting (5F) was done in all cases & it was removed after 3 weeks postoperatively. Perioperative outcomes, including stone-free rate in a single session, operation time, and complications, were analysed. The stone-free rate in a single session, which is the primary end point in this series, was defined as a no residual stone on postoperative X-ray KUB taken at 1 day after procedure. If a residual stone was identified in a postoperative image, the case was designated as a failure in this series, whether the identified stone was removed spontaneously or required auxiliary procedures, like SWL or PCNL. Complications were noted such as: Stone Migration, Ureteral Injury, Sepsis,Hematuria,and Ureteral Stricture.

Steps for URS:

•URS was done as a primary therapy under regional anesthesia using 7F/9.5F semirigid Ureteroscope, with diameter graduated from its tip till its base (Karl Storz Endoscopy-Germany).

•Cystoscopy with retrograde pyelography & placement of 0.035" floppy-tip guidewire past the stone or just below the calculus where it could not pass beyond to maintain access.

• Intracorporeal lithotripsy (Swiss LithoClast EMS, Nyon, Switzerland) was used to fragment the stones, which were then extracted by forceps [Figure 1].

Figure 1: Intra-Operative View.

•At the end of the procedure, 5F double J (DJ) stenting was done.

Steps for Transperitoneal Laparoscopic Ureterolithotomy (Lap-TPUL):

•All cases of Lap-TPUL were done under General anesthesia.

•Lap-TPUL will be conducted using the conventional three laparoscopic ports under flank position. Three trocars are usually sufficient for removal of proximal ureteral calculi (one 10 mm at the umbilicus for the laparoscopic lens and two 5 mm at the ipsilateral midclavicular line, 1 subcostal and 1in the lower quadrant.

•Colon was reflected medially for identification of the proximal ureter.

•Localization of the stone by the bulge in the ureter and gently pinching with the instruments [Figure 2].

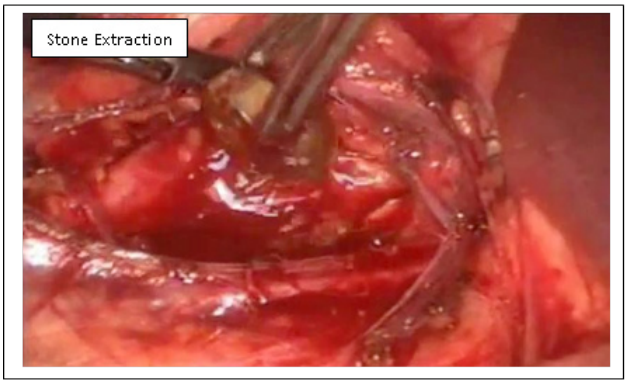


Figure 2: Stone Extraction

•Ureterotomy and removal of the stone by cold knife (No.11)

•Placement of the double J stent.

•Suturing the ureterotomy incision by 5.0 vicryl

•Drain inserted through one of the port

•Stone retrieval is by inserting the thumb of the rubber glove through the 10 mm port.

Statistical analysis

Statistical analysis of the results was performed using SPSS@12. The statistical inference was obtained by computing Z test for difference between any two values and considered statistically significant if the P value was < 0.05.

RESULTS

Symptomatology: Pain was the most common symptom in both the groups affecting 76.2% (16) patients in URS group and 72.2% (13) patients in the LAP-TPUL group followed by vomiting which was present in 23.8% (5) patients in URS group and 22.2% (4) patients in LAP-TPUL group.

Duration of Symptoms: The duration of symptoms was ≤ 1 month in 23.8% (5) patients in the URS group and in 22.2% (4) patients in the LAP-TPUL group whereas the duration of symptoms was more than 1 month in 76.2% (16) patients in the URS group and in 77.8% (14) of patients in the LAP-TPUL group.

Side Distribution: We recorded the distribution of patient with respect to side of stones as determined on X- Ray. In the URS group 66.7% (14) patients were having right sided upper ureteric stones and in the LAP-TPUL group 72.2% (13) patients were having right sided upper ureteric stones whereas left upper ureteric stones were found in 33.3% (7) of patients in the URS group and in 27.8% (5/18) patients in the LAP-TPUL group.

Mean Stone Size (mm): Mean stone size in both URS and LAP-TPUL groups were compared and was found that URS had stone size from 15-20.5 mm with mean size of 16.69 mm and LAP-TPUL group had stone size ranging from 15-22 mm with mean size of 17.14 mm.

Stone Free Rate: Of the 21 patients in URS-P group, 13 (61.9%) patients were stone free. In LAP-TPUL group, there was 94.4 % stone clearance rate.

Table 1: Significant Complications in URS Group.

	URS-P Number (%)
Mucosal Injury	1 (4.8%)
Proximal Migration of stone	3 (14.2%)
Sepsis	1 (4.8%)
Ureteral Perforation	1(4.8%)
TOTAL	6 (28.6%)

Of the 21 patients in URS-P group, 6 (28.6%) patients had significant complications. Transient haematuria

was noted in cases of mucosal injury. Proximal stone migration was the most common complication in both the groups. (Table 2)

Table 2: Complication of Laparoscopic Ureterolithotomy.

	LAP-TPUL Number (%)
Proximal Migration of stone	1 (5.5%)
Hematuria	1 (5.5%)
Severe Pain	2 (11.1%)
TOTAL	4 (22.2%)

Of 18 patients in LAP-TPUL group, 4 (22.2%) patients had complications. Post-operative pain was the commonest complication of all in Lap-TPUL group (Table 3).

Procedure Time: The mean procedure time in URS-P and LAP-TPUL group was 67.53 mins and 84.07 mins respectively. Mean procedure time in LAP-TPUL group was higher as compared to URS groups.

LAP-TPUL group had longer Mean hospital stay (4.16±0.67 days) as compared to URS-P wherein mean hospital stay was 1.47±0.49 days.

Auxiliary Procedures: PCNL and SWL were done in 5 and 4 cases respectively when there was complete stone up migration or residual stone was present. Complete clearance was achieved at 3 months in all cases who underwent auxiliary procedures.

DISCUSSION

Evolution of technology has revolutionized the treatment of ureteric calculi. Stones less than 5mm are more likely to be expulsed by medical expulsive therapy. Most of the upper ureteral stones require intervention because the spontaneous expulsion rate is only 22%.

URS is one of the most common modalities used for upper ureteral stones. It is minimally invasive, has a good stone clearance rate, and cosmetic value. Ureteroscopy with holmium laser lithotripsy is less affected by the stone size; the efficacy has been well established for stones larger than 1 cm. The disadvantages being stone upmigration and a higher retreatment rate for larger stones.[7-9]

Laparoscopic ureterolithotomy (LU) can be done through the transperitoneal or retroperitoneal route. The advantage of LU is complete stone clearance in a single sitting, disadvantage being long learning curve and experience.[10,11]

With these factors in mind this study was carried out to compare the outcome of URS versus Laparoscopic ureterolithotomy in patients having solitary upper ureteric calculus of more than 1.5 cm.

In the Lap-TPUL group, 27.8% patients had stones in their left upper ureter and 72.2% patients had stones in their right upper ureter while in the URS-P, 33.3% patients had stones on the left side respectively. The difference in the two groups with regard to the side of the stone was not significant (P =0.8573). The mean stone size in the URS-P and Lap- TPUL groups were 16.79±1.51 mm and 17.14±1.96 mm respectively (p=0.615). The difference between the three groups with regard to the mean stone size was not statistically significant (P >0.05). Hence both the groups were comparable for the stone factors.

The most significant outcome measurements of any procedure are the stone-free rates, complications, procedural time and need of auxiliary procedures. Many studies have compared success rates of Laparoscopy and URS for treatment of large upper ureteric stones.[12-16]

In URS-P group, 61.9% patients were stone free. Various other authors have shown the stone free rates ranging from 62.5% to 88 % depending upon the stone size although the mean stone size was more than 10mm (Table 3).

Table 3: Stone Free Rate by URS

STUDY	STONE FREE RATE
Zhu et al[17]	77.3%
Kumar et al[18]	76.0%
Basiri et al[19]	76.0%
Khaladkar et al[20]	79.2%
Lopes et al[21]	62.5%
Ko et al[22]	77%
Fang et al[23]	88%
Present Study	61.9%*

In LAP-TPUL group complete clearance was achieved in 94.4% cases. Various other authors in

their studies have reported stone free rates ranging from 80% to100% using either transperitoneal route or retroperitoneal route. We have done all cases via transperitoneal route only. Our study shows comparable stone free rate for the Lap-TPUL group. (Table. 4)

Table 4: Stone Free Rate by Laparoscopy

STUDY	STONE FREE RATE
Zhu et al[17]	90.5%
Kumar et al[18]	100%
Basiri et al[19]	90%
Khaladkar et al[20]	100%
Lopes et al[21]	93.3%
Ko et al[22]	100%
Fang et al[23]	100%
Present Study	94.4%

Various authors have conducted comparative studies for the analysis of the two treatment methods i.e. URS and Laparoscopy Ureterolithotomy for large proximal ureteric stones. In their observations, they found out that large sized stones (≥ 10 mm) had higher stone free rates by Laparoscopic Ureterolithotomy as compared to URS. Our study reports a higher stone free rate for stones in Lap-TPUL as compared to URS groups and it was statistically significant (p=0.008).

In the present study, proximal stone migration was the most common complication affecting 14.2% of patients in the URS-P group. Significant complications in URS-P group were 28.6%. Proximal stone migration was also the most common complication in the other studies.

Out of 18 patients in Lap-TPUL group, 4 (22.2%) patients had complications, the most common being postoperative severe pain followed by hematuria (5.5%) and proximal stone migration (5.5%). Comparing to other studies, complication rate was slightly higher in our study which can be due to less Laparoscopy exposure of the operating surgeon. These complications were seen in initial 10 cases after which there were no complications in Lap-TPUL group.

There were higher complications rate in URS group as compared to Lap-TPUL group but it statistically insignificant (p= 0.71).

In our study, mean hospital stay was 1.32±0.43 and 4.16±0.67 days in URS and Lap- TPUL groups which was statistically highly significant (p<0.001). Various studies[4,8,12] have compared the mean hospital stay ranging from1.14 days to 3.4 days in URS group and 2.2±0.7 days to 5.9±2.1 days in Laparoscopic ureterolithotomy.

CONCLUSION

- Mean stone size was comparable in all the groups being 16.79mmand 17.14mm in URS-P and Lap-TPUL groups respectively.
- Mean procedure time was higher in Lap-TPUL group and it was statistically significant.
- Higher complication rates are seen in URS groups as compared to Lap-TPUL group but not statistically significant.
- Laparoscopic ureterolithotomy achieved a higher stone free rate as compared to URS for large proximal ureteric stones >15mm.
- Lap-TPUL group had longer hospital stay as compared to URS group and it was statistically highly significant.
- Laparoscopic Ureterolithotomy is treatment of choice for stones >15mm in size as there are better chances of stone clearance in single sitting as compared to URS.

REFERENCES

1. Muslumanoglu AY, Karadag MA, Tefekli AH, Altunrende F, Tok A, Berberoglu Y. When is open ureterolithotomy indicated for the treatment of ureteral stones? Int J Urol 2006;13:1385–8.
2. Rofeim O, Yohannes P, Badlani GH. Does laparoscopic ureterolithotomy replace shock-wave lithotripsy or ureteroscopy for ureteral stones? CurrOpinUrol 2001;11(3):287-91.
3. Hruza M, Schulze M, Teber D, Gözen AS, Rassweiler JJ. Laparoscopic techniques for removal of renal and ureteral calculi. J Endourol 2009;23:1713–8.
4. Eknoyan G. History of urolithiasis. Clin Rev Bone Min Metab 2004;2:177–185.

5. Shah J, Whitfield HN. Urolithiasis through the ages. Br J Urol 2002;89:801–10.
6. Dardioti V, Angelopoulos N, Hadjiconstantinou V. Renal diseases in the Hippocratic era. Am J Nephrol 1997;17:214–216.
7. Sachs M. The prohibition of lithotomy within the Hippocratic Oath: historical and ethical considerations on the history of surgery. ZentralblChir 2003;128:341–347.
8. Iorio L. Monastic medicine from the classic era to the renaissance: development of nephrology. J Nephrol 2006;19 [Suppl 10]:S9–S13.
9. Riethe P. Hildegards von Bingen „Liber simplicismedicinae" in the Mainz „Garden of Health". Sudhoffs Arch 2005; 89:96–119.
10. Ganem JP, Carson CC. Frère Jacques Beaulieu: from rogue lithotomist to nursery rhyme character. J Urol 1999;161:1067–1069.
11. Antonello A, Bonfante L, Favaro S, Gambaro G, d"Angelo A, Mennella G, Calo L. Hermann Boerhaave and lithotomy: what he thought about it. Am J Nephrol 2002;22:290–294.
12. Haddad FS, Flamant S, Haddad L. Marin Marais and his "Le tableau de l"operation de la taille" (1725). ActaBelgHist Med 1994;7:66–70.
13. Vandenbroucke JP. Commentary: treatment of bladder stones and probabilistic reasoning in medicine: an 1835 account and its lessons for the present. Int J Epidemiol 2001;30:1253–1258.
14. Richet G. The chemistry of urinary stones around 1800: a first in clinical chemistry. Kidney Int 1995;48:876–886.
15. Richet G. Nephrolithiasis at the turn of the 18th to 19th centuries: biochemical disturbances. Am J Nephrol 2002;22:254–259.
16. Dietrich H. Der Lithotripter von Jean Civiale. Urologe B 2002;42:130–131.
17. Zhu H, Ye X, Xiao X, Chen X, Zhang Q, Wang H. Retrograde, antegrade, and laparoscopic approaches to the management of large upper ureteral stones after shockwave lithotripsy failure: a four-year retrospective study. J Endourol 2014;28(1):100-3.
18. Kumar A, Vasudeva P, Nanda B, Kumar N, Jha SK, Singh H. A Prospective Randomized Comparison between Laparoscopic Ureterolithotomy and SemirigidUreteroscopy for Upper Ureteral Stones >2 cm: A Single-Center Experience. Journal of Endourology.[Ahead of print]. doi:10.1089/end.2013.0791.
19. Basiri A, Simforoosh N, Ziaee A, Shayaninasab H, Moghaddam SM, Zare S. Retrograde, antegrade, and laparoscopic approaches for the management of large, proximal ureteral stones: a randomized clinical trial. J Endourol 2008;22(12):2677-80.
20. Khaladkar S, Modi J, Bhansali M, Dobhada S, Patankar S. Which is the best option to treat large (>1.5 cm) midureteric calculi? J LaparoendoscAdvSurgTech A 2009;19(4):501-4.
21. LopesNeto AC, Korkes F, Silva JL 2nd, Amarante RD, Mattos MH, Tobias-Machado M, Pompeo AC. Prospective randomized study of treatment of large proximal ureteral stones: extracorporeal shock wave lithotripsy versus ureterolithotripsy versus laparoscopy. J Urol 2012;187(1):164-8.
22. Ko YH, Kang SG, Park JY, Bae JH, Kang SH, Cho DY et al. Laparoscopic Ureterolithotomy as a Primary Modality for Large Proximal Ureteral Calculi: Comparison to Rigid Ureteroscopic Pneumatic Lithotripsy. Journal of Laparoscopic & Advanced Surgical Techniques 2011;21(1):7-13.
23. Fang YQ, Qiu JG, Wang DJ, Zhan HL, Situ J. Comparative study on ureteroscopic lithotripsy and laparoscopic ureterolithotomy for treatment of unilateral upper ureteral stones. Acta Cir Bras 2012;27:266–270.

DOI Number: 10.5958/2321-1024.2019.00004.7

Comparison of Clinico-pathological and Radiological Parameters of Response to Neoadjuvant Chemotherapy in Breast Cancer

Hardik Ponkiya[1], Sandeep Rao[2]

[1]Senior Resident, [2]Associate Professor, Dept of Surgery, Medical College and SSG Hospital Vadodara, Gujarat

ABSTRACT

Complete histological response following neo-adjuvant chemotherapy (NACT) for breast cancer has great prognostic value. This study would access rates of complete clinical, radiological and pathological response in patients of breast cancer treated with neo-adjuvant chemotherapy.

To Access Rates of Complete Clinical, radiological And Pathological Response in Patients of Breast Carcinoma Being Treated with NACT.

Keywords: *Neo adjuvant chemotherapy(NACT), locally advanced breast cancer. (LABC)*

INTRODUCTION

Complete histological response following neo-adjuvant chemotherapy (NACT) for breast cancer has great prognostic value. [1],[2] .The significance of a lesser degree of histological response in terms of prognosis is also colossal as a major percentage of patients fall under the category of partial responders. [3],[4],[5],[6],[7]

In spite of the differences in the criteria adopted to measure and report the pathological findings after primary noninvasive treatment, most groups have shown a similar correlation between residual disease found at surgery and patient outcome. [7]Till date, no parameter/s has/have been validated to assess clinical or pathological response of breast cancer to NACT.

The change in clinical dimensions of tumor, as assessed during serial clinical breast examination, is used to evaluate the response to therapy in accordance with RECIST criteria. [8] Radiological measurements (by ultrasonogram [USG], mammography, CT scan or MRI) have also been used for response assessment as a logical extension to (more accurately) measure the tumor size in certain centers. Radiological imaging is resource intensive and the additional expenses involved limit the utility of this option in developing countries.

The primary aim of this study was to correlate and compare the clinical, radiological, and the gold standard pathological parameters in assessing the tumor response to NACT. The secondary aim was to assess rates of complete clinical and pathological response in patients of breast carcinoma being treated with NACT. Thus the present study was aimed at correlating and comparing the conventional methods of assessment to pathological parameters of response.

PATIENTS AND METHOD

Prospective study was conducted. Total duration of study is 11 months (January 2016 to November 2016). Data collection period will be approximately 9 months (February 2016 to August 2016).Patient having breast lump and consulting outdoor department of surgery of SSG Hospital. Convenient sampling is done for which 55 patients are taken in this study. Diagnosis is confirmed by tru-cut biopsy

Those patients who had undergone previous biopsy are again examined at the end of three months. Data entry will be done in MS Excel 2013.

Corresponding auther:
Sandeep Rao,
M.S. (General Surgeon), Associate Professor, Dept of Surgery,Medical College and SSG Hospital Vadodara, Gujarat. Ph 9825482708,
E-mail: drsandeeprao@gmail.com

Patients with histopathologically proven case of carcinoma breast size more than 2 cm with or without lymph node were included. Patients with Age more than 18 Years were part of this study Patient Previously treated for Breast cancer were excluded. Also patients having distant metastatic lesions. Male breast cancer patients were not part of this study.

STATISTICAL METHOD

Paired T Test was applied and The P value less than 0.05 was considered to be statistically significant.

RESULTS

A prospective study was carried out in the Department of General Surgery, during the period from January 2016 to November 2016 in 55 patients having Carcinoma Breast. full details of the patients were recorded in the Performa.

Amongst 55 patient age distribution range was 28-75 year with mean age 52.7 year, among those patient 17 were premenopausal and 38 were postmenopausal, all received Anthracyclin based chemotherapy.

Among 55 patients, all patients had complain of lump of variable duration, with 7 patients is having associated pain and 10 pt is having associated complaint of discharge.

By comparing breast lump on clinical examination, at pre-chemotherapy as well as post-chemotherapy time, size of breast lump in cm of is as follow

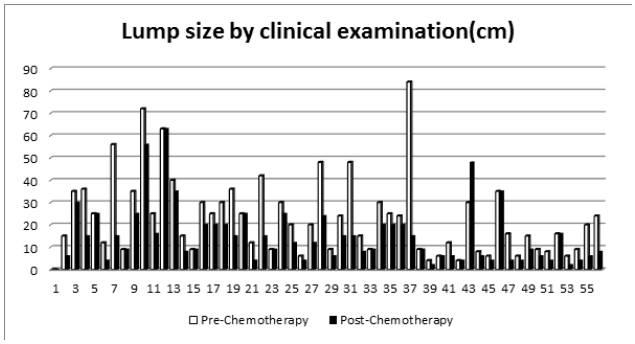
Here 29 pt had Right sided carcinoma of breast, while 26 patients were having left carcinoma of breast. And 31 patient had upper outer quadrant lump, 12 had upper inner quadrant lump, 8 had lower outer quadrant lump while 4 pt has upper inner as well as outer quadrant lumps.

By examining clinically all patients pre-chemotheray and post-chemotherapy by different examiner, size of lump is measured.

By clinical examination, average mean decrease in breast lump is 8.34 cm^2 which is 36% of original breast lump size.

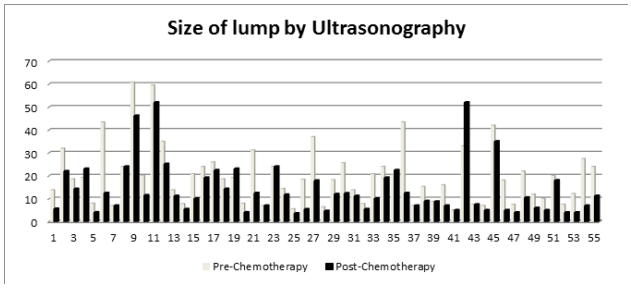
Bar diagram of the same is as below,

CHART 1



While looking at pre chemotherapy and post chemotherapy **ultrasonography** , results are as shown below,

CHART 2



Mean decrease in size of lump by ultrasonographic measures is 6.18 cm^2 (31%) as compared to 8.34 mean decreased observed by clinical examination

Histopathologicaly almost all patients were having invasive ductal carcinoma of breast.Axillary lymph nodes were palpable in 13 patients in clinical examination and seven patients were having small ulcer over skin which healed in all patients in post-chemotherapy examination,

By applying paired T-test to clinical examination findings and comparing pre and post chemotherapy results, SD for pre-chemotherapy shows value of 23.47 ± 17.56 and SD for post chemotherapy shows value of 15.13 ± 12.99 _with P value <0.0001¸ shows statistically significant decrease in size by neoadjuvant chemotherapy.

Similaraly, by applying paired T-test to ultrasonographic examination findings and comparing pre and post chemotherapy results, SD for pre-chemotherapy shows value of 20.00 ± 12.81 and SD for post chemotherapy shows value of 13.82 ± 12.99 with P value <0.0001¸ shows statistically significant decrease in size by neoadjuvant chemotherapy.

While comparing the efficacy of clinical and radiological parameters in assessing response of neoadjuvant chemotherapy, results of each parameters are compared by single T-test.

TABLE 1

	Clinical Parameters	**Radiological Parameters**
Arithmetic Mean	8.34	6.17
Standard Deviation	12.44	8.07
P value is 0.28		

DISCUSSION

The current rationale for NACT is based on its usefulness in quickly evaluating the likely benefit of new approaches to treatment the biological characteristics of the individual tumor. [3],[5].

This approach has the advantage of enabling *in vivo* assessment of tumor sensitivity to chemotherapy. The complete clinical and pathological response of a primary breast cancer to NACT has been shown to be important prognostic factor in survival of these patients. [7],[

A critical component of this strategy is to use improved methods for monitoring tumor response to treatment. Patients who do not demonstrate an initial response, or who cease to respond to therapy, would have the option to change to other available agents to maximize response or can choose straight to go for surgery. Evidence is emerging that pathological response after NACT can be used as a surrogate endpoint for survival. [5],[7].

In spite of the differences in the criteria adopted to measure and report the pathological findings after primary noninvasive treatment, most groups have shown a similar correlation between residual disease found at surgery and patient outcome. [7] Using current standard chemotherapy regimens, approximately 70-90% of patients demonstrate at least a 50% reduction in tumor size clinically. However, only 10-20% patients demonstrate a complete pathological response in all literaure. [3],[4],[5],[6],[7]

We found a 36% decrease in lump size by clinical examination and 31% decresee in lump size by radiological measure in our study.

Physical examination is often considered unsatisfactory for assessment of the response of locally advanced breast cancer to primary medical treatment. Feldman *et al.*reported that 45% of complete clinical responders had macroscopic tumor at histological examination; inversely, 60% of patients without any histological gross residual tumor had an incomplete clinical response. [1] In the series of 49 patients studied by Cocconi *et al.*, physical examination overestimated tumor regression in 23% of cases and underestimated the response in 9%.

Several studies in the past have attempted to study the accuracy of CT scan or ultrasound to measure the tumor response but the results have been controversial. Operator dependence has been one of the factors quoted to be responsible for interfering with the accuracy. Modification of tumoral echogenicity induced by chemotherapy has been also quoted as one of the factors.

This density diminution may interfere and cause misrepresentation of measurements because of the decreased contrast ratio between tumoral and normal tissue. Balu-Maestro found ultrasound to be poorly reliable in evaluating the size of residual tumor after chemotherapy, correlating in only 43% of cases,In other series ultrasound was found to be superior to physical examination and mammography especially when the tumor was hypoechoic. Akashi-Tanaka *et al.* compared the results in 42 cases of clinical examination, mammography, ultrasound, and presurgical CT after four courses of chemotherapy with the results of histopathology.

There are several flaws to this study:

One, it is a prospective observational study with a small sample size and not designed with a statistical power to it;

two, there were several missing values for radiological assessment of response; and

three, clinical and radiological measurements were done by different clinicians each time.

In spite of the inherent flaws, our observations show that serial clinical assessment was better of the two methods to predict extent of histopathological response

However, it is important to note that both methods of assessment of response (clinical and radiological) suffer from poor sensitivity rates, and although radiological assessment seemed to have a 100% specificity rate, the low observed complete responses on radiological assessment render this value open to question. A larger sample size may provide more conclusive evidence regarding superiority of one method over another by providing adequate power to it. There are a number of recent studies which have evaluated the role of various other imaging modalities (PET, MRI, Doppler USG, optical tomography, etc.) in assessing the response to neo-adjuvant chemotherapy in carcinoma breast.

Of these Magnetic resonance imaging (MRI) holds promise in future, as it not only provides accurate information about the degree of response but also the pattern of response. Although it is still not widely available and is costly, but in future with increased experience of its use in this setting, it will prove to be very useful.

SUMMARY

A prospective study was carried out in the Department of General Surgery, during the period from January 2016 to November 2016 in 55 patients having Carcinoma Breast. All having tumour size more than 2 cm have been underwent neoadjuvant chemotherapy after biopsy confirmation.

All patients were assessed clinically and radiologically before and after chemotherapy. Post-operative breast specimens were sent to histopathology for final pathological diagnosis.

By clinical examination, average decrease noted is 36% of original breast lump and average decrease in size noted by ultrasonography is 31% of original lump, both are statistically significant decrease. While comparing clinical, radiological and pathological parameters in assessing response of neoadjuvant therapy, superiority of clinical examination could not be proved clearly (P value=0.28)

CONCLUSION

It is shown in the present study that clinical assessment of response to NACT, shows a higher sensitivity compared to radiological assessment. However the overall low sensitivity and specificity rates of clinical assessment mandate a search for a better method of evaluation.

Source of Funding : Self

Conflict of Interest : Nil

Ethical Clearance: Taken From Institutional Ethics Committee.

REFERENCES

(1) Feldman LD, Hortobagyi GN, Buzdar AU, Ames FC, Blumenschein GR. Pathological assessment of response to induction chemotherapy in breast cancer. Cancer Res 1986;46:2578-81. [PUBMED]

(2) Hortobagyi GN, Ames FC, Buzdar AU, Kau SW, McNeese MD, Paulus D, et al. Management of stage III primary breast cancer with primary chemotherapy, surgery, and radiation therapy. Cancer 1988;62:2507-16.

(3) Verrill MW, Ashley SE, Walsh GA, Ellis P, Sacks N, Gui G, Nasiri N, Smith IE, et al. Pathological complete response in patients treated with neoadjuvant chemotherapy for operable breast cancer. Breast Cancer Res Treat 1998;50:328 (abstr 549).

(4) Fisher B, Brown A, Mamounas E, Wieand S, Robidoux A, Margolese RG, et al. Effect of preoperative chemotherapy on local-regional disease in women with operable breast cancer: Findings from National Surgical Adjuvant Breast and Bowel Project B-18. J Clin Oncol 1997;15:2483-93.

(5) Honkoop AH, van Diest PJ, de Jong JS, Linn SC, Giaccone G, Hoekman K, et al. Prognostic role of clinical, pathological and biological characteristics in patients with locally advanced breast cancer. Br J Cancer 1998;77:621-6.

(6) Chollet P, Charrier S, Brain E, Curé H, van Praagh I, Feillel V, et al. Clinical and pathological response to primary chemotherapy in operable breast cancer. Eur J Cancer 1997;33:862-6.

(7) Tsuchida Y, Therasse P. Response evaluation criteria in solid tumors (RECIST): New guidelines. Med Pediatr Oncol 2001;37:1-3.

DOI Number: 10.5958/2321-1024.2019.00005.9

Efficacy of Foam Sclerotherapy in Treating Truncal and Perforator Reflex a Six Months Study: Hospital based Prospective Study

Rajesh K[1], Edwin Emperor C[2]

[1]Assistant Professor, Department of Vascular Surgery, [2]Associate Professor, Department of Plastic Surgery, Kanyakumari Government Medical College, Asaripallam, Kanyakumari, Tamil Nadu

ABSTRACT

Background: Veins varicose are the important disorder which affects the male adult population. Various factors cause veins varicose. The present studies aim is to see the efficacy of foam sclerotherapy in treating truncal and perforator reflex in varicose patients for the period of six months.

Materials and Method: This study was conducted in the Department of Vascular surgery, Kanyakumari Government Medical College for a period of 6 months. Patients came to the Vascular surgery OPD with varicose veins was selected for the study. Total of 38 patients selected for the study on the basis of inclusion and exclusion criteria. Demographic and clinical data were collected from the patients. All the patients were explained procedure and inform consent was obtained from each patient. The selected patients were subjected to the foam sclerotherapy and observed for 6 months.

Results: A total of 38 patients were included in the study. Males (n=32) was more than females (6). Maximum number of patients had SFJ incompetence (17), perforator (10), SFJ with perforator incompetence (9) and 2 had SFJ, SPJ with perforator incompetence. Out of 38 patients only 6 patients showed recurrent/residual varicose. Thrombophlebitis was the commonest complication compared to others.

Conclusion: From the study observations it can be concluded that foam sclerotherapy has its own advantages for patients with varicose veins. Patients who had undergone this procedure have less recurrence of varicose veins.

Keywords: *Foam sclerotherapy, truncal, incompetence, perforator reflex, Varicose vein, healing rate*

INTRODUCTION

Varicose veins mainly develop in the lower limbs affect the lower extremities Various methods are used in the treatment of varicose veins. Each method has its own advantages and complications. They are surgical treatment it is a old method to treat varicose veins. It is associated with less success rate and recurrence of varicosities[1,2]. Subfascial Endoscopic Perforator Surgery procedure must be performed under general anaesthesia. It has own limitations and complications. 20-28% recurrence was reported patients underwent this procedure. Another method is Radiofrequency ablation (RFA) involves the use of high frequency alternating current delivered via a bipolar catheter, placed intraluminally under duplex guidance, to obliterate the vein lumen. The current causes ionic agitation and local heating resulting in venous spasm and irreversible denaturation of collagen with intimal destruction. This produces a fibrotic luminal seal with minimal thrombus formation. The procedure is performed under general, regional or tumescent local anaesthesia.

Corresponding author :
Dr Rajesh K
Assistant Professor, Department of Vascular Surgery,
Kanyakumari Government Medical College,
Asaripallam, Kanyakumari
Tamil Nadu, Mobile no: +91-9442154779
Email id: rajesh.kanniah@gmail.com

Endovenous Laser Treatment (EVLASER) is the advanced method in the treatment of varicose veins. In EVLASER uses laser energy delivered through laser fibre to obliterate the vein. Steam bubbles generated from boiling blood in the lumen cause thermal injury to the vein wall. This procedure had more recurrent rate and associated with other complications. Liquid sclerosing agents have their greatest effect in the smallest incompetent veins, usually non truncal varicosities below the knee (macro sclerotherapy) and telangiectasias (microsclerotherapy). The technique is not useful however, if proximal venous hypertension exists and any proximal venous reflux should be corrected first. Foam sclerotherapy method injection of sclerosing agent such as sodium teradecyl sulphate, polidoconal in a foam vehicle, the sclerosing agent having been mixed forcibly with air. Several techniques have been proposed to produce sclerosant foam and Tessari and Frullini techniques appear to give the most favourable results. The foam replaces blood in the vein, which enhances the efficacy of the sclerosing agent by reducing the volume of sclerosant required for the treatment and increasing the effective surface area of the sclerosant in contact with the vein wall[11,12]. Duplex monitoring during the procedure is necessary to prevent spread of foam into femoral vein. The present study was conducted to evaluate the efficacy of foam sclerotherapy in treating truncal and perforator reflex in patients with varicose veins a 6 months study.

MATERIALS AND METHOD

Study settings and time period

The study is a prospective hospital based study conducted in the department of Vascular surgery, Kanyakumari Government Medical College, for the period from January 2017 to June 2017.

Inclusion criteria

- **Any age with varicose veins affecting long/ short saphenous system or isolated perforators or the combinations**
- **Truncal/perforator reflux proven by duplex**
- **Patients of C4, C5 and C6 involvement**
- **New or already underwent varicose surgery**

Exclusion criteria

- **Involvement of C1, C2 and C3 degree**
- **Congenital anomalies in venous**
- **Acute deep venous thrombosis**
- **Post phlebitis legs**
- **Any arterial disease**
- **Patients with cardiac disorders, neurological diseases**

Procedure

A total of 38 patients were enrolled as inpatients after clinical examination. A detailed procedure was explained to all the study population. The demographic and clinical data was recorded. The patients were observed at the time of inclusion of study and follow up for 6 months. In patients with C6 varicose veins, the size of ulcer was measured during the first clinical examination and followed up during subsequent reviews. They are subjected to duplex study. IVC, iliac veins, femoral veins, popliteal vein and tibial are examined to rule out venous thrombosis and any reflux in deep venous system. The superficial system is assessed for reflux in the SFJ, SPJ and all the perforators. In all the veins any reflux more than 0.5 sec inferred as positive. All the incompetent perforators are assessed and their levels from the heel given in cms, the amount of reflux, size of veins at the junction and at various levels are assessed.

Directional continuous wave–Doppler examination with proximal compression or Valsulva maneuver is a qualitative test for assessing reflux in both the superficial and deep venous systems. Duplex ultrasonography performed with the patient in upright position and with the limb examined in a non weight bearing position, in combination with Valsalva maneuver, is the best documented non invasive method of quantifying reflux, by measuring reflux duration in specific axial superficial and or deep venous segments. Although various methods of creating foam and various agents have been described the method we followed in our institute will be described.

Procedure of intervention

The sclerosant used was 3% polidoconol. Shown strength agent foamed as per Tessari double syringe

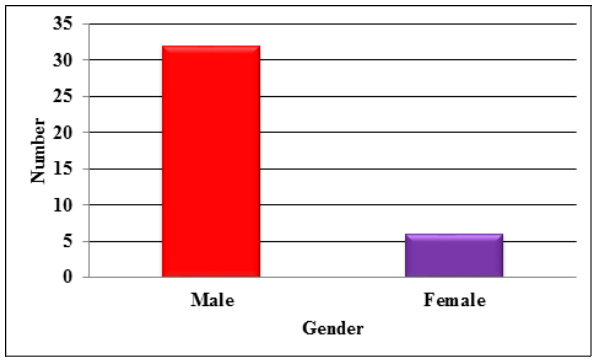
method using room air, the ratio of air to liquid are 4:1. The volume of foam injected depends on the diameter and length of the vein to be sclerosed. The maximum amount of foam used in this study is 20 ml in single sitting. Vascular access for foam injection is usually under duplex guidance with direct puncture of GSV/SSV/ Perforators. The foam is guided to SF junction where firm finger pressure or transducer pressure is applied to halt proximal passage or of the foam. After foam, the foot and legs are elevated 45 degrees. The deep veins are assessed for evidence of foam. If any present they are cleared by ankle flexion and extension maneuvers, follow up assessment was done to rule out DVT. Then compression bandage are applied with focal compression over larger veins and saphenous vein post treatment bandage are replaced with class 2 compression after 24 hrs for 14 days. If the patient was not fully relieved or any residual varicosities found during follow up further sitting of sclerotherapy was given. Surveillance was done by inspection, palpation and duplex study after 1 year. The primary outcome is gaining of reflex and the secondary outcomes are recurrence of canalization, neovascularisation and post procedure complications[13].

Statistical analysis

The data was expressed in number and percentage. Microsoft excel 2017 used to calculate the percentage.

RESULTS

The study had males were more compared to females. Out of 38 patients 32 was primary varicose and 6 showed recurrence. Maximum patients had SFJ incompetence (17), Perforate (10), SFJ+perforator incomperence (9) and 2 had SFJ+SPJ+perforator incompetence. C4 (6) and C5 (6) more in patients with SFJ incompetence, C5 (6) was more in perforator. C6 (6) in SFJ+perforator incompetence and 2 had C6 SFJ+SPJ+ perforator incompetence was observed. 3 patients showed thrombophlebitis and it is a major complication. In the recurrence perforator incompetence (3) was more compared to others.



Graph-1: Distribution of patients based on gender

Table-1: Number and percentage of patients based on primary treatment

Anatomical distribution of Reflux	No of cases
SFJ Incompetence	17
Perforator	10
SFJ +Perforator Incompetence	9
SFJ + SPJ + Perforator Incompetence	2
Total	**38**

Table-2: Distribution of patients based on category treated

Anatomical distribution of Reflux	C6	C5	C4	Total
SFJ Incompetence	5	6	6	17
Perforator	5	1	4	10
SFJ +Perforator Incompetence	6	3	0	9
SFJ + SPJ + Perforator Incompetence	2	0	0	2
Total	**18**	**10**	**10**	**38**

Table-3: Number and percentage of patients with complications

Type of complication	Number
Thrombophlebitis	3
Hyperpigmentation	1
Skin necrosis	1
Pain along injected site	3
Total	**8**

Table-4: Number and percentage of patients with recurrent/residual varicose in different category

Anatomical distribution of Reflux	C4	C5	C6	Total
SFJ + Perf Incompetence	1	0	1	2
SPJ Incompetence	0	0	1	1
Perf Incompetence	1	1	1	3
Total	**2**	**1**	**3**	**6**

DISCUSSION

The venous disease burden in our country is so voluminous in centres which are specialized in vascular work the case volume will be around 60 – 70 % of the outpatient set up. Many of these patients may need intervention for their symptoms as the critical limb ischemia patients were given priority , most of the venous cases could not be accomadated in the list for elective SFJ ligation / SPJ ligation as it requires operating table and anesthesia. As the foam sclerotheraphy can be given in the duplex scan room, early patient ambulation, return to work and the repeatability of the procedure makes it more applicable in our set up. We have treated 38 patients with foam sclerotherapy with six months follow up study[23].

Echogenic phenomena in the central venous circulation and specifically in the right heart appear to be a very common occurrence after foam sclerotherapy, even with modest quantities of foam injected. These signals are probably foam bubbles, but may represent particulate matter such as clumps of endothelial cells. These episodes occurred with both air- and CO_2- based foam when the limb was injected in a horizontal position and occlusion of the saphenofemoral junction was performed. Occlusion of the saphenofemoral junction tended to result in a bolus of foam being released into the central venous circulation when groin pressure was removed, even after 3 to 5 minutes of occlusion. It can be speculated that junctional compression may simply dam up foam particles, which are then released en mass when the pressure is removed.

Release of pressure may also create a suction that aspirates foam from the proximal great saphenous vein into the common femoral vein. Gas bubbles can persist in treated superficial veins for many minutes after injection, even when CO_2 is used. Techniques that occlude the saphenous junction with either manual compression or balloon dilatation in conjunction with foam injection may actually amplify the hazards they seek to prevent[23].

Leg elevation before injection has several advantages. Smaller volumes of foam are generally regarded as safer than large quantities. In many cases, leg elevation dramatically reduces the diameter of the target vein, thus permitting injection of significantly lower amounts of foam to achieve treatment of the same length of vein. Because foam is lighter than blood, leg elevation also facilitates the persistence of foam in the treated vein and reduces the degree of foam migration into the femoral vein through the saphenofemoral junction[10].

Although details were not included in the study[23], they have consistently observed significant amounts of foam in the central venous circulation and right heart if the saphenous vein is injected without compression at the junction when the leg is in a horizontal position. The advantages of reduced vein caliber and gravitational effects on foam movement are lost if foam is injected with the leg level and subsequently elevated. However, cannulation before leg elevation is advantageous because it is easier to obtain venous access with the leg horizontal. A catheter may be preferable to a needle to avoid loss of access during leg elevation and permit unhurried foam injection.

In most of the studies quoted in literature female patients occupy 60 -70 % of cases, but in our study female patients are only 8%. Although varicosities are more common in females most of them are in the category C1-C3. Why ulcerations are less common in females the cause has to elucidate. (76.2%) female and (23.8%) male patients J-**L Gillet, J M Guedes** et.al[24]. We have treated 28 cases of SFJ Incompetence in this group of these 24 cases the veins were occluded at the end of 6 month 24 /28 (85 %). The veins that are recanalised during follow up 3 had veins more than 7 mm out of 9 patients, occlusion rate 66 %. Only one patient in less than 7 mm group recanalised out of 19 occlusion rate 94 %. 2 cases of SFJ Reflux were treated in both these cases the vein diameter is 7 mm. The veins remained occluded at the end of 6 months. In this group 3 patients were treated for perforator incompetence for them the veins are occluded at the end of 6 months.

One case of SPJ Reflux treated in this group remained occluded at the end of 6 months Stavros

K. Kakkos reported 87 % occlusion rates in his study for recurrent varicose veins (Immediate results)[31]. The occlusion rate of 76 % in group 1 and 85% in group 3 are acceptable as it has been quoted in various literatures. The recanalisation rate of 24% in Group 1 is seen in veins more than 7 mm.. The occlusion rate of 100% in the recurrent group cannot be compared to other studies as the treated group consists of only 12 patients. Guex et al.[30] reported that in a registry of 12,173 sessions of sclerotherapy, the incidence of adverse events (principally visual disturbance) was 0.4%. In our series we encountered only one case (1/56) 0.01%.superficial thrombophlebitis (STP) (10.3%) was reported by P Chapman-Smith and A Browne in our series it was 5%. Allergy was reported in 0.01 to 0.1% (very rare) in series by Guex et al in our series it is 0.01% transient visual loss, breathlessness are self limiting. Thrombophelbitis settled with analgesics and antibiotics for a period of 2 weeks. skin allergy settled with 2 doses of anti-histaminics. In most of these cases we followed the technique of saphenofemoral junction Compression during foam injection.

CONCLUSION

Ultrasound guided foam sclerothreapy is effective in abolishing primary as well as recurrent varicosities for both truncal and perforator incompetence. High patient satisfaction due to immediate return to activity and avoiding cost of time off work. Repeatability of the procedure is also well accepted by the patients. The vein size determines the early recanalisation/recurrence in our study.

Ethical Committee clearance: The study protocol was approved by Institutional Human Ethics Committee, Government Medical College, Kanyakumari (Dist), Tmail Nadu.

Conflict of Interest: No conflict of interest.

Source of Funding: Self

REFERENCES

1. Paolo C, Marc LV, Fabio V, Piero C. Great saphenous vein surgery without high ligation of the saphenofemoral junction. Journal of Vascular Surgery 2013;58(1):173-8.
2. Abu OA, Scurr JH, Coleridge S. Saphenous vein reflex without incompetence at the saphenofemoral junction. Br J Surg 1994;81:1452-4.
3. Fischer R, Chandler JG, De Maeseneer MG, et al. The unresolved problem of recurrent saphenofemoral reflux. J Am Coll Surg 2002;195:80-94.
4. Sarin S, Scurr JH, Coldridgesmith PD. Stripping of the long saphenous vein in the treatment of primary varicose veins. B J Surg 1994;81:1455-8.
5. Hayden A, Holdsworth J. Complications following re-exploration of groin for recurrent varicose veins. Annals of Royal College of Surgeons of England 2001;83(4):272-3.
6. Jones L, Braithwaite BD, Selwyn D, Cooke S, Earnshaw JJ. Neovascularisation is the principal cause of varicose vein recurrence: results of a randomized trial of stripping the long saphenous vein. Eur J Vasc Endovasc Surg 1996;12;442-5.
7. Merchant RF, DePalma RG, Kabnick LS, Endovenous obliteration of saphenous reflux:a multicentre study. Journal of Vascular Surgery 2002;35(6);1190-6.
8. Nicolini P. Closure group treatment of primary varicose veins by endovenous obliteration with VNUS closure system: results of prospective multicentre study. European Journal of Vascular and Endovascular Surgery 2005;29(4):433-9.
9. Pannier F, Rabe E. First results with a new 1470-nm diode laser for endovenous ablation of incompetent saphenous vein. Phlebology 2009;24:26-30.
10. Pannier F, Rabe E, Maurins U. First results with a new 1470-nm diode laser for endovenous ablation of incompetent saphenous veins. Phlebology 2009;24:26-30.
11. Cavezzi A, Frullini A, Ricci S, Tessari L. Treatment of varicose veins by foam sclerotherapy: two clinical series. Phlebology 2002;17:13-8.
12. Meissner MH, Natiello SC. Performance charecteristics of the Venous Clinical Severity Score. J Vasc Surg 2012;38:889-5.
13. Duffy DM. Small vessel sclerotherapy: an overview. Adv Dermatol 1988;3:221-40.
14. Ouvry P, Allaert FA, Desnos P, Hamel Desnos C. Efficacy of polidocanol foam versus liquid in sclerptherapy of the great saphenous vein: a multicenter randomized controlled trial with a 2-years follow up. European Journal of Vascular and

Endovascular Surgery 2008;36(3):366-70.

15. Cabrera J, Garcia Omedo MA. Treatment of varicose long saphenous veins with sclerosant in micro foam form: long term outcomes. Phlebology 2000;15:19-23.
16. Creton D, Uhl JF. Form sclerotherapy combined with surgical treatment for recurrent varicose veins: short term results. Eur J Vasc Endovasc Surg 2007;33:619-24.
17. Kenneth MD, Godfrey F, David R. Comparison sclerotherapy for varicose veins: a Canadian study. CMA journal 1982;126:923-7.
18. Myers KA, Jolley D, Clough A, Kirwan J. Outcome of ultrasound guided sclerotherapy for varicose veins: Medium term results assessed by ultrasound surbeillance. Eur J Vasc Endovasc Surg 2007;33(1):116-21.

DOI Number: 10.5958/2321-1024.2019.00006.0

Study of Autonomic Functions in Patients with Non-Specific Low Back Pain

Nishant kashyap[1] , Jhillmill Kumari[2], Waseem Ahmad[3], Santosh Kumar[4]

[1]Senior Resident, Department of Surgical Oncology, IGIMS Medical College, Patna, [2]Assistant Professor, Department of Physiology, A.N.M.M.C.Gaya, Bihar, [3]Assistant Professor, [4]Professor & H.O.D, Department of Orthopedics, IGIMS Medical College, Patna

ABSTRACT

Aim and Objectives: To evaluate parasympathetic and sympathetic reactivity and assess any derangement in either or both of the limb of autonomic functions in patients of non specific chronic low back pain.

Introduction: Non specific chronic low back pain (nCLBP) is prevalent among adults and often leads to functional limitations, psychological symptoms, lower quality of life, and expenditure on health care. The focus of autonomic function and health has been cardiovascular diseases; musculoskeletal syndromes have been paid much less attention. However, there are many epidemiological and other studies suggesting that there is a connection between musculoskeletal disorders and psychological risk factors such as stress.

Material and Method: Male patients within the age group of 24-45 years(n= 40), who had a history suggesting chronic non specific low back pain were recruited from Orthopedics OPD and the control were the age and BMI matched healthy young adults within the same age bracket as that of study group. Autonomic function was assessed by using conventional autonomic function test. The data collected was evaluated using SPSS 17. Unpaired student "t" test was applied to compare the results P-value < 0.05 was taken as statistically significant. **Result:** The E: I ratio of control group was1.85±0.14 and in study group it1.30±0.17, the difference being statistically significant, Similar observation was made for other parasympathetic reactivity test like 30:15 ratio.

Conclusion: Our results and review of literature make us of the view that parasympathetic activity decreases in patients of non specific chronic low back pain.

Keywords: *Non specific chronic low back pain, Parasympathetic reactivity test, Sympathetic reactivity test*

INTRODUCTION

The human being is unique in having bipedal gait. This causes a vertical loading of the spine and consequently varieties of low back and neck problems.

Low back pain is mainly of two types, specific and non specific . Non-specific low back pain(nCLBP) is defined as pain, muscle tension or stiffness localized below the costal margin and above the inferior gluteal fold of unknown etiology.

nCLBP is prevalent among adults and often leads to functional limitations, psychological symptoms, lower quality of life, and expenditure on health care[1]. nCLBP is usually categorized in 3 subtypes: acute, sub-acute and chronic low back pain. This subdivision is based on the duration of the back pain. Acute low back pain is an episode of low back pain for less than 6 weeks, sub-acute low back pain between 6 and 12 weeks and chronic low back pain for 12 weeks or more [2]. According to Chandola et al. [3] there is a strong association between chronic stress and physiological health risks. It has been suggested

Corresponding Author:
Dr. Jhillmill Kumari,
Assistant Professor, Deptt. of Physiology,A.N.M.M.C.Gaya.
E.mail: jhillmillkashyap08@gmail.com

that autonomic cardiovascular indices could be used in stress-related risk assessment in occupational health [4]. The focus of autonomic function and health has been cardiovascular diseases; musculoskeletal syndromes have been paid much less attention. However, there are many epidemiological and other studies suggesting that there is a connection between musculoskeletal disorders and psychological risk factors such as stress, as shown by Brage et al. [5], Sudhaus et al. [6] and Waters et al. [7]. It is also worth noting that interactions exist between pain sensitivity and cardiovascular control mechanisms.

Clinical observations of pain being spatially correlated to autonomic alterations and that blocking sympathetic efferent fibres could reduce muscle pain under certain circumstances suggest a causal role of the sympathetic nervous in the development and maintenance of localized and widespread musculoskeletal pain [8,9,10]. In contrast, in a recent experimental study of patients with fibromyalgia or NSP, a peripheral sympathetic blockade did not affect pain development during a stressful task [11].

Considering above controversy, we planned to evaluate parasympathetic reactivity and sympathetic reactivity and assess any derangement in either or both of the limb of autonomic functions in patients of non specific chronic low back pain

MATERIAL AND METHOD

Male patients within the age group of 24-45 years(n= 40), who had a history suggesting chronic non specific low back pain were recruited from Orthopedics OPD and the control were the age and BMI matched healthy young adult within the same age bracket as that of study group.

Inclusion criteria:

- Low back pain for more than 3 months
- Age between 24 and 45 years

Exclusion criteria:

- Straight leg test result below 35 degrees
- Ankylosing spondylitis, severe osteoporosis, severe osteoarthritis
- Paralysis; progressive neurological disease
- Spinal infection, previous spinal operation
- Vertebral fracture during the previous 6 months
- Neuro psychiatric disorders or
- On any medication known to alter autonomic function

Autonomic Assessment

Parasympathetic reactivity test were done using E: I ratio and 30:15 ratio. Sympathetic reactivity was assessed using Blood pressure response to sustained Handgrip.

Parasympathetic Reactivity Tests

E: I Ratio

E: I Ratio based on the phenomenon of respiratory arrhythmia, which is most pronounced at the respiration rate of 6 breaths per minute. The subject is asked to breathe at this rate (with 5 s of inhalation and 5 s of exhalation per breath). The expiratory-inspiratory ratio (E: I ratio), which is the ratio of the longest RR interval during expiration and the shortest RR interval during inspiration from 5 cycles was determined. The E: I ratio in young person should be higher than 1.2.

$$\text{E: I ratio} = \frac{\text{Longest R-R interval during expiration}}{\text{Shortest R-R interval during inspiration}}$$

30:15 Ratios

During the postural change from lying to standing a characteristic immediate rapid increase in heart rate occur which maximal at about the 15th beat after standing is followed by a relative overshoot bradycardia maximal at about the 30th beat. To perform this test the subject is asked to lie quietly on a couch and then to stand up unaided. The characteristic heart rate response can be expressed by the 30 : 15 ratio, which is the ratio of the longest R-R interval around the 30th beat after starting to stand up to the shortest R-R interval around the 15th beat. The 30:15 ratio should be at least1.04. It was calculated by following formula:

$$\text{30:15 ratio} = \frac{\text{R-R interval at beat 30 after assuming erect posture}}{\text{R-R interval at beat 15 after assuming erect posture}}$$

Sympathetic Reactivity Tests

Blood pressure response to sustained handgrip

A rise in diastolic blood pressure is determined during isometric pressing of a handgrip dynamometer at approximately one third of the maximum contraction strength for 3-5 min. Blood pressure measurements are taken at the other arm at 1 min interval. An increase in diastolic blood pressure is a result of heart rate acceleration without an increase of peripheral vascular resistance. The test result is presented as the difference between the highest diastolic pressure during the examination and the average diastolic pressure at rest. It should normally be higher than 15 mmHg.

Statistical Analysis:

The data collected was evaluated using SPSS 17. Unpaired student "t" test was applied to compare the results P-value < 0.05 was taken as statistically significant.

RESULT

Comparison of Autonomic Function Test in Control and Study Group

Parasympathetic Reactivity Tests

The E: I ratio of control group was1.85±0.14 and in study group it1.30±0.17, the difference being statistically significant Similar observation was made for other parasympathetic reactivity test like 30:15 ratio.

Sympathetic Reactivity Test

The study group showed a statistically non significant increase in the rise of SBP and DBP with isometric exercise when compared to control group.

Table 1: Distribution of Age, Height, and Weight in Study group.

Parameter	Control	Study Group
Age(Years)	36.85±1.08	37.23±0.82
Height(cms)	159.40±5.74	160.50±4.80
Weight(kgs)	50.20±6.04	53.30±6.41

Table 2: Comparison of Heart Rate, Respiratory rate, SBP, DBP in Control group and Study group

Parameters	Control group	Study group	p-Value
Heart Rate	81.70±8.95	93.40±7.95	P<0.001
Respiratory Rate	16.00±1.34	18.20±0.83	P<0.001
Systolic Blood Pressure (SBP)	109.80±9.17	123.90±6.41	P<0.05
Diastolic Blood pressure (DBP)	72.60±7.29	76.30±5.00	P<0.001

All results are expressed as Mean ± standard deviation, p< 0.05 is significant

Table 3: Comparison of Autonomic Function Tests in Control group and study group

Parameters	Control Group	Study group	p-Value
E: I Ratio	1.85±0.14	1.30±0.17	<0.05
30:15 ratio	1.67±0.13	1.17±0.12	<0.05
Change in DBP due to Isometric Exercise(IE)	21.40±5.39	21.20±4.92	NS

All results are expressed as Mean ± standard deviation, p< 0.05 is significant

DISCUSSION

Our study shows that parasympathetic activity did not change significantly but sympathetic activity showed statistically significant increase.

A systematic meta-analysis which followed the standard guidelines for systematic reviews and meta-analyses critically reviewed the literature on HRV in conditions associated with chronic pain [12]. Fifty-one studies, out of 17,350 fulfilled the inclusion criteria. Across a wide range of conditions pooled results from the meta analysis reflected a consistent, moderate-large decrease in HF power of the HRV in chronic pain suggesting a decrease in parasympathetic activity. Our study is in alignment with the above meta analysis done by Tracy LM, et al. [12].

Specific yoga practices including yoga breathing and certain meditation techniques also influence the HRV with a shift towards greater parasympathetic activity [13,14,15].This study if read in between the line then it suggest a decrease in the parasympathetic activity in the patient complaining of non specific low back pain. Our study points in the same directions.

Another study reported that the measures of HRV i.e., SDNNi ,RMSSD and mean RR interval which are strongly associated with vagal tone were significantly higher on the days of yoga intervention when compared to the placebo intervention and the control group and thereby supporting our result obliquely [16].

CONCLUSION

Our results and review of literature make us of the view that parasympathetic activity decreases in patients of non specific chronic low back pain.

Conflict of Interest: None

Ethical Clearance: Taken

Source of Funding: Self

Acknowledgement: Nil

REFERENCES

1. Nambi GS, Inbasekaran D, Khuman R, Devi S, Shanmugananth, Jagannathan K. Changes in pain intensity and health related quality of life with Iyengar yoga in nonspecific chronic low back pain: A randomized controlled study. Int J Yoga. 2014;7:48-53.
2. Burton AK, Tillotson KM, Main CJ, Hollis S. Psychosocial predictors of outcome in acute and subchronic low back trouble. Spine (Phila Pa 1976). 1995 Mar 15;20(6):722-8.Level of evidence 3C
3. Chandola T, Brunner E, Marmot M. Chronic stress at work and the metabolic syndrome: prospective study. BMJ 2006; 332: 521–525.
4. Collins SM, Karasek RA, Costas K. Job strain and autonomic indices of cardiovascular disease risk. Am J Ind Med 2005; 48: 185–193.
5. Brage S, Sandanger I, Nygård JF. Emotional distress as a predictor for low back disability: a prospective 12-year population-based study. Spine 2007; 32: 269–274.
6. Sudhaus S, Fricke B, Schneider S, Stachon A, Klein H, von Düring M, Hasenbring M. Die cortisol-aufwachreaktion bei patienten mit akuten und chronischen rückenschmerzen: Zusammenhänge mit psychologischen risihofaktoren der schemerzchronifizierung.Schmerz 2007; 21: 202–210.
7. Waters TR, Dick RB, Davis-Barkley J, Krieg EF. A cross-sectional study of risk factors for musculoskeletal symptoms in the workplace using data from the General Social Survey (GSS). J Occup Environ Med 2007; 49: 172–184.
8. Bengtsson A, Bengtsson M. Regional sympathetic blockade in primary fibromyalgia. Pain. 1988;33(2): 161-7.
9. Martinez-Lavin M. Fibromyalgia as a sympathetically maintained pain syndrome. Curr Pain Headache Rep. 2004;8(5):385-9.
10. Light KC, Bragdon EE, Grewen KM, Brownley KA, Girdler SS, Maixner W. Adrenergic Dysregulation and Pain With and Without Acute Beta-Blockade in Women With Fibromyalgia and Temporomandibular Disorder. The Journal of Pain. 2009;10(5):542-52.
11. Nilsen KB, Sand T, Borchgrevink P, Leistad RB, Rø M, Westgaard RH. A unilateral sympathetic blockade does not affect stress related pain and muscle activity in patients with chronic musculoskeletal pain. Scand J Rheumatol. 2008;37(1):53-61.

12. Tracy LM, Ioannou L, Baker KS, Gibson SJ, Georgiou-Karistianis N, Giummarra MJ. Meta-analytic evidence for decreased heart rate variability in chronic pain implicating parasympathetic nervous system dysregulation. Pain. 2016;157:7–29.
13. Manjunath NK, Telles S. Effects of sirsasana (headstand) practice on autonomic and respiratory variables. Indian J Physiol Pharmacol. 2003;47:34–42.
14. Raghuraj P, Ramakrishnan AG, Nagendra HR, Telles S. Effect of two selected yogic breathing techniques of heart rate variability. Indian J Physiol Pharmacol. 1998;42:467–72.
15. Telles S, Raghavendra BR, Naveen KV, Manjunath NK, Kumar S, Subramanya P. Changes in autonomic variables following two meditative states described in yoga texts. J Altern Complement Med. 2013;19:35–42.
16. Telles S, Sharma S.K., Gupta R.K., Bhardwaj A.K., Balkrishna A. Heart rate variability in chronic low back pain patients randomized to yoga or standard care. BMC Complementary and Alternative Medicine (2016) 16:279.

DOI Number: 10.5958/2321-1024.2019.00007.2

A Rare Case Report of Impacted Metallic Rhinolith

Abhay Kumar Singh[1], Pal Satyajit Singh Athwal[2] Harsimrat Singh[3], Aditya Ghosh Roy[4], V.P. Venketachalam[5]

[1]Assistant Professor, Department of E.N.T, Saraswathi Institute of Medical Sciences, Hapur, U.P, India, [2]Junior Resident, Department of Medicine, G.S Medical College and Hospital, Hapur, U.P, India, [3]Post Graduate 3rd, [4]Senior Resident, [5]Professor and H.O.D, Department of E.N.T, Saraswathi Institute of Medical Sciences, Hapur, U.P, India

ABSTRACT

Introduction- Rhinolithiasis is an uncommon condition. It is usually confused with both benign and malignant nasal tumors. They have various clinical presentations.

Case Presentation: We report a rare case of rhinolith due to inhalation of industrial fumes. The patient presented to the OPD of Saraswathi institute of medical sciences, hospital with history of nasal obstruction, yellowish nasal discharge, frequent headache and epistaxis of 3 months duration. The patient was an industrial worker by profession and gave history of inhalation of industrial fumes (zinc oxide). After taking a thorough history of the patient local examination including anterior rhinoscopy and nasal endoscopy was carried out. Nasal endoscopy revealed a greyish irregular densely impacted solid mass. Computed tomography (CT) scan of nose and paranasal sinuses showed a radiopaque mass in right and left side of nasal cavity. Rhinolith was removed endoscopically under general anaesthesia, leading to the complete resolution of his symptoms.

Discussion: Diagnosis of rhinolithiasis can be made by keeping a strong suspicion based upon history and symptoms. The current case report shows the importance of rigid nasal endoscopy and radiological assessment in diagnosis and management of rhinolith.

Keywords: *Rhinolith, rhinolithiasis, Metallic rhinoliths, Zinc oxide.*

INTRODUCTION

Rhinolith is of Greek origin; "rhino" meaning nose, and "lithos" meaning stone. They are not commonly seen but attract attention because they can be confused with both benign and malignant nasal tumours which need aggressive surgical management. Rhinoliths are usually asymptomatic; as they progress they can develop into a symptomatic destructive entity. It can be seen on radiographs as a radiopaque object in the nasal fossa and may be confused with several pathologic entities that will call for more invasive surgical procedures.

Corresponding author:
Dr. Abhay Kumar Singh
Assistant Professor, Department of E.N.T, Saraswathi Institute of Medical Sciences, Hapur, U.P, India

CASE REPORT

A 40-year-old zinc metal factory worker presented to E.N.T outpatient department of Saraswathi institute of medical sciences with complaints of nasal obstruction, foul smelling nasal discharge, frequent headache and epistaxis of 3-month duration. These symptoms were preceded by history of accidental inhalation of zinc oxide fumes. The patient also suffered burn injuries to his head, chest, legs and ears and there was no history of systemic disease. After taking a thorough history of the patient, local examination including anterior rhinoscopy and nasal endoscopy was carried out. Nasal endoscopy revealed an irregular, grey, stony impacted mass covered with secretions was present in right and left nostril. Computed tomography (CT) scan of nose and paranasal sinuses showed a radiopaque mass in right and left side of nasal cavity. (Figure 1). Based on clinical and radiological presentations, patient was diagnosed with

rhinolith of both nostrils. The patient was immediately planned for surgery keeping in mind both endoscopic and lateral rhinotomy method. All investigations were done necessary for general anesthesia fitness. An intraoral intubation was done. The rhinolith was examined endoscopically and was carefully delineated by doing a thorough decongestion all around it. Proper mucosal handling of tissue done and the impacted rhinolith from nasal cavity removed endoscopically. The rhinolith removed seems to be metalloid and crusted zinc oxide vapors. (Figure 2). The patient had an uneventful recovery and was seen two weeks later at clinic where he was devoid of any nasal symptomatology.

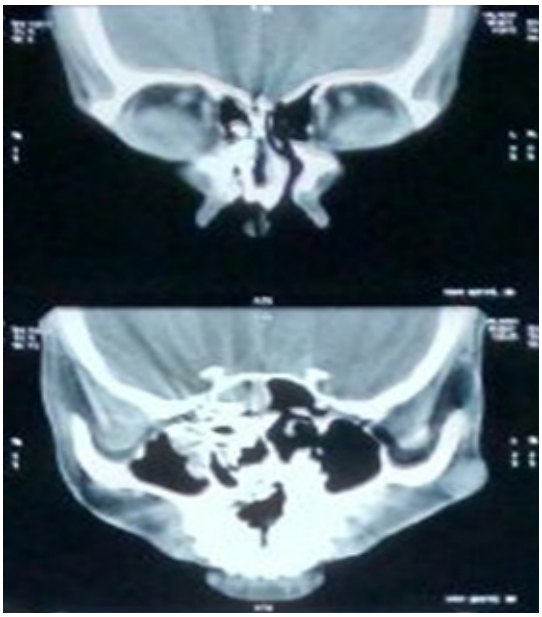


Figure 1: preoperative ct-scan

Figure 2: removed rhinolith

Figure 3: endoscopic view of rhinolith

DISCUSSION

Rhinolith also called as nasal calculi are calcareous concretions that arise secondarily to the complete or partial encrustation of intranasal foreign bodies[1]. Polson in 1943 reported that his colleague had seen a rhinolith as big as a pinecone[2]. Bartholin gave the first documented description in 1654.

Rhinolithiasis is an uncommon condition.[3] The pathogenesis of rhinolith is not clear. It has been speculated that a foreign body in the nose acts as a nidus and incites a chronic inflammatory reaction with deposition of mineral salts and forms a rhinolith.[1,4]The foreign body is expected to enter through the anterior nares, although some have been reported to have entered through the choana during vomiting or coughing. Based on the nature of foreign body involved, rhinoliths are classified as true and false rhinoliths[5]. Most foreign bodies are exogenous (false) such as beads, pebbles, buttons, paper, food, cherry pits, stones, sand, fruit seeds, peas, parasites, dirt, cloth, wood, glass, jewellery, plastic, cotton wool or retained nasal packings.[1,4] A rare case of opioid (codeine and opium) associated with rhinolith has also been reported.[6] The endogenous (true) agents causing rhinolith includes bacteria ,leukocytes, misplaced teeth, sequestra, blood clots, dried pus, mucus, desquamated epithelia, nasal crusts and bone fragments.[1,4,5,]

Radiologic examinations include orthopantomography (OPG), maxillary occlusal view, water's view, lateral skull views and CT[5]. In 1900; MacIntype gave the first radiological description of rhinolith. The typical radiological features are mixed radiopaque-radiolucent mass arranged in a concentric circle or in the form of lamellations.[7] The other radiological features such as coral-like mass, displacement, perforation, thinning, expansion and destruction of the nasal wall have also been listed.[5] CT (Computed tomography) appearance includes a homogenous, high-density periphery with central area of lower density.[7] CT also plays an important role in exact localization of the mass and in demonstration of any associated complications.[8]

First chemical analysis of rhinolith was performed by Axmannin 1829. It is found that they predominately contain in organic materials such as calcium phosphate, magnesium, carbonate, oxalate and urates.[3,7] Other materials such as siderite (FeCO3) and ferrihydrite with a nidus of high iron content has also been reported.[11] Over the years, various methods have been employed for mineralogical analysis of rhinolith and this includes electron-ray microprobe, X-ray diffractometry and infrared-spectroscopy.[4]The treatment is removal of the rhinolith. In most cases, rhinoliths are removed through the nostrils using local anaesthesia either by crushing or as a complete fragment.[7] Endoscopically controlled surgery can be helpful in complete and uneventful removal of the rhinolith. A rhinolith that cannot be removed surgically could be disintegrated using a lithotripsy.[7] In case of septal or antral perforation the surgical option includes alar release, Caldwell-Luc or lateral rhinotomy.[3,7] Rarely, in extensively destructive cases, reconstruction of Sino nasal anatomy may be required.[9]

CONCLUSION

Although rhinoliths are quite uncommon, it is quite probable that an otolaryngologist will occasionally be confronted with such cases during his practice. Since clinical and radiological findings may be similar to other benign or malignant nasal lesions, knowledge of this clinical entity and a high degree of suspicion are necessary in order to accurately diagnose and treat this condition.

Acknowledgment- The authors are thankful to chairman and managing member of Saraswathi institute of medical sciences, Hapur, U.P for their encouragement.

Ethical Clearance- Taken from ethical committee of Institute.

Source of Funding- Self.

Conflict of Interest- Nil.

REFERENCES

1. Carder HM, Hill JJ. Asymptomatic rhinolith: A brief review of the literature and case report. Laryngoscope 1996;76:524-30.
2. Polson CJ. On rhinoliths. J Laryngol Otol 1943;58:79-116.
3. Husain SI. Rhinolith: A Rare Cause of Chronic Cough. Canad Med Ass J 1967;97(2):540-41.
4. Singh RK, Varshney S, Bist SS, Gupta N, Bhatia R, Kishor S. A case of rhinolithiasis. OJHAS 2008;7(2):7-9. (Online journal)
5. Langlais RP, Langland OE, Nortje CJ. Diagnostic imaging of the jaws. Chapter 19 "Soft tissue radiopacities". Williams and Wilkins, Baltimore 1995;630-31.
6. Ghanbari H, Farhadi M, Daneshi A. Report of an unusual cause of rhinolithiasis: An 'opioma'. Ear Nose Throat J Jan 2007;86(1):48-49.
7. Royal SA, Gardner RE. Rhinolithiasis: An unusual pediatric nasal mass. Pediatr Rediol 1998;28:54-55
8. Hsiao JC, Tai CF, Lee KW, Ho KY, Kou WR, Wang LF. Giant rhinolith: A case report. Kaohsiung J Med Sci 2005;21:582-85.
9. Lo SH, Wu YY, Wang PC. Maxillary anthrolith. Mid Taiwan J Med 2003;8:238-41.

DOI Number: 10.5958/2321-1024.2019.00008.4

A Clinical Evaluation and Surgical Management of Intestinal Obstruction

Rudra Prasad Reddy[1], Sreenivasa[1]

[1]*Associate Professor, Department of General Surgery, MNR Medical College & Hospital, Sangareddy, Telangana.*

ABSTRACT

Background: Treatment Acute intestinal obstruction is one of common abdominal emergency and is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia. The diagnosis and management of the patient with intestinal obstruction is one of the more challenging emergency that a general surgeon can come across. Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative carries grateful results. **Methods:** Number of cases – 30. After admission to MNR Medical College And Hospital, Sangareddy investigations and operative procedures performed, were collected from the inpatients, were interpreted. **Results:** Intestinal obstruction is more common in the age group of 30-60 years and in 1st decade of life. Mean age distribution was 39.4years. Incidence in male (70%) was more as compared to female population (30%). Pain abdomen – 80% (24 cases) Vomiting – 83% (25 cases) Distention abdomen – 72% (22 cases) and Constipation – 60% (18 cases) were noted as many patients had coincidence of symptoms. **Conclusion:** All age groups were involved in our study from newborn to elderly patients. More commonly found in males than in females. Intestinal obstruction still remains an important surgical emergency. Intestinal obstruction with tuberculosis intestine are times more likely to develop postoperative complications, proper anti-tubercular management is necessary to prevent mortality and morbidity.

Keywords: *Intestinal obstruction; Small intestine; Large intestine.*

INTRODUCTION

Intestinal obstruction is a common surgical emergency all over the world[1]. It is defined as obstruction in forward propulsion of the contents as obstruction in the intestine either due to mechanical or neurological cause[2]. It is predisposed by varying underlying anomalies and diseases, which are difficult to define preoperatively[3]. Although the mortality due to acute intestinal obstruction is decreasing with better understanding of pathophysiology, improvement in diagnostic techniques, fluid and electrolyte, correction, much potent anti-microbials and the knowledge of intensive care[4]. Various studies in India report about 8-12% in recent times. Most of the mortalities occurs in elderly individuals who seek late treatment and who are having associated pre- existing comorbid conditions[5]. The dictum of never let the sun set or rise in small bowel obstruction has made early surgical intervention for intestinal obstruction2. This in turn has reduced the incidence of strangulation of bowel, which was major cause of mortality in already ill patient[6]. Early diagnosis of obstruction skillful operative management, proper technique during surgery and intensive postoperative treatment carries[7].

Corresponding Author:
Rudra Prasad Reddy, Associate Professor,
Department of General Surgery, MNR Medical College & Hospital, Sangareddy, Telangana.
E mail Id: srinunaik923@gmail.com

AIMS AND OBJECTIVES

To study the various causes of intestinal obstruction. To study the symptoms and signs of intestinal obstruction. To study the various Modalities of treatment (surgical) and also the role of imaging studies in determining the etiology and intervention in intestinal obstruction.

METHODOLOGY

A clinical evaluation of intestinal obstruction was selected because in routine practice every surgeon has to come across this surgical emergency and treatment would largely depend on early diagnosis and skillful management. The study was undertaken with the aim of evaluating/studying the various casuse(etiology) and the most common cause of intestinal obstruction with its associated complications at our institution, mode of presentation(signs and symptoms) & its surgical management and also to evaluate/study the role of imaging studies in determining the etiology and intervention in intestinal obstruction. A total number of **30** cases of intestinal obstruction have been studied between September 2015 to September 2017. In this study I have selected patients with all age group who attended to OPD and emergency department at M NR Medical College And Hospital, Sangareddy with history and clinical picture suggestive of intestinal obstruction, also the patients who had hernia with recent onset of irreducibility, pain, vomiting and constipation were also included in this study. Patients who were having sub acute or adynamic intestinal obstruction treated conservatively are excluded from the study. All patients with provisional diagnosis of acute intestinal obstruction were assessed clinically in detail as proforma after admission.

On admission a relevant pathological and biochemical investigations were carried out in all cases. Plain X-ray erect abdomen was done in almost all cases. Ultrasonography of abdomen was done in some cases whose diagnosis by X- ray was inconclusive. CT scan abdomen done in selected cases. Immediately after the admission along with the above procedure of resuscitation with IV fluids especially ringer lactate and normal saline infusion, was started till the hydration and urine output became normal. Nasogastric decompression with Ryles tube was carried out and antibiotic prophylaxis started. Close observation of all bedside parameters (like pulse rate, BP, RR, abdominal girth, bowel sounds and tenderness and guarding) was done. Patients who showed reduction in abdominal distension and improvement in general Condition, especially in individuals with postoperative adhesions a chance of conservative management was taken (by extending the supportive treatment) for further 12 to 24 hours, those who showed improvement by moving bowels, reduction in pain/tenderness in decided for conservative treatment, such individuals are excluded in this study. Patients with clear-cut signs and symptoms of acute obstruction were managed by appropriate surgical procedure after resuscitation. I attended operative procedures in majority of the cases and findings were recorded and photographs were taken. Surgery adopted and criteria for deciding the procedure were noted. Histopathological examination of the specimen of resection/biopsy was done whenever necessary. The postoperative period was monitored carefully and all parameters were recorded hourly or four hourly basis depending upon the patients general condition and toxemia. Postoperative follow up period ranged between 2-6 months from time of discharge, some patients were not regular in their follow up visits. The results were tabulated mostly stressing on following points i.e age, sex, symptoms, signs, investigations, probable causative factors, operative findings and operative procedure adopted.

Statistical Methods: Descriptive statistics (mean, median, mode, range, standard deviation,variation,co efficient of variation) has been used to find the significant of proportion of Postoperative complications in association with etiology of Intestinal Obstruction.

RESULTS

A clinical study of 30 cases of intestinal obstruction was studied during period of September 2015 – September 2017 at MNR Medical College And Hospital, Sangareddy. Analysis is as follows:

Table 1: Age Distribution

Age	Total Cases
0-10	6
11-20	3
21-30	4
31-40	5
41-50	7
51-60	1
61-70	2
>71	2

The study was done in all age groups ranging from newborn to 85yrs with a mean age of 39.4 years

Table 2: Sex Incidence

Age	Male	Female
0-10	6	0
11-20	2	1
21-30	1	1
31-40	1	3
41-50	8	2
51-60	1	2
61-70	1	0
>71	1	0

The occurrence of intestinal obstruction was common in male (70%) with comparison to female (30%). There were 21 male & 9 female with male to female ratio 2.2: 1

Table 3: Levels of obstruction:

SMALL BOWEL	LARGE BOWEL
22	8

There was more of small bowel obstruction (73%) when compared to large bowel Obstruction (27%).

Table 4: Analyses of symptoms and signs:

Sl No	Symptoms & signs	No. of cases	Percentage
1	Pain abdomen	24	80
2	Vomiting	25	83
3	Tenderness	28	93
4	Distension	22	72
5	Constipation	18	60
6	Bowel sounds- increased	13	43
7	Bowel sounds- decreased	5	16
8	Bowel sounds- absent	2	7
9	Groin swelling	4	13
10	VP	5	16
11	Gaurding	14	46
12	Rigidity	4	13
13	Palpable mass	-	-
14	PR findings(significant)	1	3

5) Etiology of intestinal obstruction (Small bowel obstruction) 22 cases (73%)

Cause	Case	Percentage
Adhesions & bands	11	50
Obstructed hernias	5	22
TB strictures	3	13
Small bowel volvulus	1	4.5
Intussusception	1	4.5
Mekels diverticulum	1	4.5

Table 6: Large bowel obstruction - 8 cases (27%)

Cause	Case	Percentage
Neoplasm	4	50
Large bowel volvulus	1	12.5
T.B strictures	2	25
Intussusception	1	12.5

6) Radiological features: Plain X-ray erect abdomen was done in 25 cases out of 30 cases. Positive interpretation was when it correlated with exact site of pathology and negative when it did not. The lower the obstruction, higher the accuracy.

DISCUSSION

Intestinal obstruction is one of the commonly encountered clinical entities. There is probably not a day that goes by, in which a clinical surgeon does not atleast once, come across the possible diagnosis of intestinal obstruction.The involvement of small bowel in obstruction is much more common than that of large bowel (Sufian and Mostsumoto)[8]. The delay in the treatment will lead to high mortality.

Incidence: In the present series small bowel obstruction contributed to 73% and large bowel obstruction 27%. This is comparable with reports of Michel and Becker[9] where small bowel obstruction constituted to 80% and large bowel obstruction constituted 20%.

1. Age incidence: The acute intestinal obstruction occurs in all age groups. The age distribution in our series ranges from newborn to 85 years with mean age of 39.4years. Maximum incidence was seen between

age group of 41-50 yrs (30%) followed by the age group 0-10 (23%). Earlier studies conducted by Gill and Eggleston[10] has reported 19.04% of cases in age group of 0-10 yrs, also Studies by Gill Eggleston has reported 17% of cases in the age group of 50-54 years and 60% of the cases of intestinal obstruction occur in the age group of 30-60 years. There studies almost correlate with the present study.

2. Sex incidence: In our study the incidence of intestinal obstruction in males was 21 (70%) and that of females was 9 (30%). Male to female ratio is 2.2:1.0 (3:1) The male preponderance is consistent with series reported from other part of world. Fuzan and Lee reported 2:1 male to female ratio. Budharaj reported in his study a ratio of 4:1 between male and female.

3. Etiology: In our study the following etiological factors were found : Adhesions – 30% Neoplasm - 13% Obstructed Hernias -16% Tubercular stricture - 16% Volvulus - 6% Bands - 6% Intussusceptions - 6% Meckel's diverticulum - 3%

CONCLUSION

The occurrence of intestinal obstruction is more in small bowel. All age groups from newborn to elderly were involved. The incidence of intestinal obstruction is more common in males compared to females. Patients with a clinical picture of obstruction of the bowel demand vigorous correction of fluid and electrolyte, which can be severe, and life threatening. Depending upon the age the etiology differs. Intestinal obstruction is more common in the age group of 30-60 years. Large bowel obstruction is more common in patients above 40 years than in younger group. Diagnosis of strangulation is still a challenge The clinical examination stressed upon vital signs, per abdominal examination. Routine necessary investigations were carried out. Plain X-ray erect abdomen - single important diagnostic tool. The distal the obstruction the greater the accuracy found. Early recognition and timely intervention is important to prevent the bowel going for gangrenous changes.

Ethical Clearance- Institutional Ethics Committee (IEC) approval was taken prior to the study.

Source of Funding- Self

Conflict of Interest - Nil

REFERENCES

1. Russel RCG. Intestinal obstruction. Chapter 69, Bailey and Love's Short Practice of Surgery, 25th ed, Arnold Publishers 2008; PP 1188-1203
2. Winslet MC.Intestinal obstruction.In: Russel RCG,Williams NS,Bullstrode CJK,editors.Bailey & Loves Short practice of Surgery 23 rd edn .2000. Edward Arnold ltd NY.1058-75.
3. Jones RS.Intestinal obstruction. In:Sabiston DC,Jr. editor. Text book of surgey. The biological basis of modern surgical practice 13th edn. 1986.W.B.Saunders Company. 905-13.
4. Ochner A. X-ray diagnosis of ileus – value of Roentgenogram in simple and strangulated obstruction. Surg. Gynaecol. Obstet.1933; 56:719.
5. Doanhouser JL, Kelly EC. Intussusception in the adult. AJS 1950; 79: 673-77.
6. Richard JB, Gerald TG, David CH, Leslie ER, Wangensteen SL. Abdominal pain. Am J Surg 1976; 131: 219-223.
7. Gilroy P. Bevan. Adhesive obstruction. Ann Roy Call Surg Eng 1983; 164-170.
8. Sufian S, Matsumoto T. Intestinal obstruction. Am J Surg 1975; 130: PP 9-14.
9. Becker WF. Acute obstruction of colon – An analysis of 205 cases. Surg.Gynaec. Obsetet.1953.96: 677-682
10. Gill SS, Eggleston FC. Acute intestinal Obstruction. Arch Surg1965; 91:389-92.
11. Ramachandran CS. Intestinal volvulus. IJS 1989; 66-70.
12. Ti TK, Young NK. The pattern of intestinal Obstruction in Malaysia. BJS 1976; 63: 963-965.

DOI Number: 10.5958/2321-1024.2019.00009.6

Role of Collagen in Management of Chronic Non-Healing Wounds

Satish Kumar[1], Mohit Kumar Mathur[2], Ashutosh Niranjan[3]

[1]Assistant Professor, Department of Surgery, [2]Associate Professor, General Surgery, [3]Head of Department, Surgery, Sharda Hospital, Knowledge Park-II-III, Greater Noida, U.P

ABSTRACT

Background: A chronic wound does not heal in an orderly set of stages. The healing in such a wound is unpredictable in relation to time contrary to the way most wounds heal. The type of wounds that do not heal within three months are often and should be considered chronic wounds. **Aim**: To study the efficacy of topical use of collagen granules in wound healing. **Material and method:** In this prospective study one hundred cases with chronic non-healing wounds were selected and treated with collagen granules topically. The effect on the chronic wounds was studied for three months. The collagen granules were made from 100 % bovine collagen. **Observation and result**: all the wounds were observed for three months in terms of disappearance of slough, appearance of healthy granulation tissue and complete or incomplete healing**. Conclusion:** The use of collagen granules dressing accelerated the wound healing in chronic wounds/ulcers. In our study we found that the rate of wound healing was significantly better in using collagen granules.

Keywords: *Chronic non-healing wounds, chronic ulcers, collagen granules, normal saline.*

INTRODUCTION

In this millennium where mankind has succeeded in deciphering the human genetic code, the issue of chronic wound management still remains an enigmatic challenge. Chronic wounds, especially non-healing types, are one of the most common surgical conditions a surgeon comes across. From time immemorial doctors have been trying many methods to treat these types of wounds[7] (W Edwina et.al.).

The peculiarity of a chronic wound is that, whatever management you give, they refuse to heal, especially the pressure ulcers or bed sores[8] (David Brett et.al.). The notion that wounds should be kept dry, although still held by a considerable number of clinicians, is steadily losing ground. We now know that wounds re-epithelialize much faster when treated with dressings which allow moist wound healing. We recognise that occluding wound does not lead to infection. Even though many modalities of wound care have come up to assist a surgeon, like the use of compression bandages to treat venous ulcers, the problem of chronic wounds still remains. Chronic wounds are a health problem of enormous magnitude affecting many hundreds of thousands of patients.

A wound care revolution is currently in the making. Many techniques have been tried over the centuries to heal chronic wounds. Although wound dressings have been used for at least two millennia, there exists no ideal dressing.

Surgical dressing of both open and closed wound is based mainly on tradition, training and the surgeons own philosophy. During the last two decades a wide variety of innovative dressings have been introduced. Recent studies have shown that application of collagen based dressings has got an important role in assisting wound healing[9] (Ashok Damir et.al.). Collagen is the major fibrous proteins of extracellular connective tissue and it is also the most ubiquitous and plentiful proteins in the animal kingdom[4] (Arvindan Rangraj et.al). The word collagen is derived from Greek word KOLA (Glue) Plus gene. They are the most abundant types of proteins in the

Address for Correspondence:
Dr Mohit Kumar Mathur
Department of Surgery, Sharda Hospital, Knowledge Park II-III, Greater Noida, UP-201306,
E.mail:dr_mohitmathur@yahoo.com

human body comprising 25% of the total body proteins and 70% to 80% of skin (Dry Weight).Proteins are natural polymers and make up almost15% of the human body and are essential for the process of wound healing. The building blocks of all proteins of amino acids.

Use of collagen for wound healing has drawn tremendous interest from the scientists in the past few decades as it claims to help in healing wounds[6](Karunakar Reddy et.al). Thus a need is felt to study the effectiveness of collagen dressing in management of chronic non-healing wounds.

Aims and Objectives

To assess wound healing in Patients who underwent collagen dressing on the basis of following factors.

*complete healing or Non-Healing

*Duration of Wound healing

*Any adverse reaction due to collagen dressing

*Quality of wound healing.

MATERIAL AND METHOD

The study has been conducted in Department of general surgery, Sharda hospital, Knowledge Park II-III, Greater Noida, UP-201306 during period May2015-June2016.A written informed consent was taken from the patients inducted in to the study. A copy of patient information sheet was also given to the patient, and ethical clearance was taken.

STUDY DESIGN: this is a prospective study. A total of 100 patients were included in the study.

Inclusion criteria: Patients from Greater Noida of all age group from both urban and rural population having a chronic non-healing wound, one or more chronic non-Healing wound, Diabetic ulcers, Those wounds which are expected to heal in long time except malignant wounds, venous ulcers and arterial ulcers were included in the study.

The Acute wounds, patients having allergy to dressing constituents and malignant wounds were excluded from the study.

Methodology: The patients in the study group were subjected to daily collagen based wound dressing. The product contained spherical designed particles that consist of 100 per cent bovine native collagen.

Methodology used for Application

Removal and disposal of wound dressing than wound was irrigated with sterile water or saline until free of debris, than collagen particles were applied to cover the wound surface. In minimally draining wounds the collagen particles were lightly sprinkled just enough to cover the surface of the wound bed. In the significantly draining wounds wound surface was covered with collagen particles ¼ to 1/8 inches deep. The wound was secondarily covered with a Non-Adherent, absorbent dressing. Efforts were made to maintain a moist wound environment, saline soaked gauze piece was used as required. The wound was evaluated on weekly basis.

Observation and Result

Total 100 number of patients were included in the study. A randomized control trial was conducted by randomly allocating patients to the study.

Distribution according to Age:

30% of patients were in 4th decade of life. The 40-60 years of age group accounted for over 50% of cases. The youngest patient was of 17 years of age and the oldest patient was of 70 years.

Distribution of gender among study

The male to female ratio is 1.7:1

Rural and Urban distribution among study

The majority of patients belonged to the rural background.

Table-1: Aetiological distribution

Aetiology	No. Of cases	Percentage
Diabetic	32	32%
Venous	31	31%
Arterial	3	3%
Tropic	18	18%
Tubercular	2	2%
Traumatic	14	14%

The diabetic and venous ulcers were the most common among other causes accounting for almost a third of the cases each. Tuberculosis was the rarest cause of chronic non-healing wound.

Table-2: Age and Sex wise distribution of Aetiology

Age Group (Years)	Cases	Diabetic M/F	Venous M/F	Arterial M/F	Trophic M/F	Tubercular M/F	Traumatic M/F
0-10	-	-	-	-	-	-	-
11-20	3	-	1/0	-	-	1/0	1/0
21-30	11	0/1	1/3	-	0/1	0/1	3/1
31-40	17	5/0	1/2	2/0	2/1	-	4/0
41-50	30	10/5	3/5	1/0	1/0	-	3/2
51-60	28	9/0	6/6	-	4/3	-	-
61-70	11	2/0	0/3	-	3/3	-	-
Total	100	26/6	12/9	3/0	10/8	1/1	11/3

More than 50% cases accounts 40-60 years age group. Only 3% cases occurred in the first two decades of life. Venous ulcer was the commonest cause of chronic non-healing wound in the females whereas diabetic ulcers were most frequent in men. Neuropathic ulcers were almost equally frequent in either sex and traumatic ulcers were more commonly seen in males.

Table-3: Risk Factors

Risk Factors	No. Of patients
Smoking	48
Previous DVT	15
Obesity	20
Oral contraceptive intake	4
Diabetes Mellitus	42
Peripheral Vascular disease	3

The smoking was the most prevalent risk factor among all cases followed by diabetes mellitus.

Site of Wound

The maximum number of cases had ulcers on the planter aspect of the foot accounting for 41% of cases. Most of them were diabetic (25%) or trophic (7%). venous ulcers were more common over the medial malleolus and surrounding area. Trophic ulcers were also commonly seen at ischial and sacral regions.

Table-4: Complication of the Wound State

Complications	No.of Cases	Percentage
Gangrene	5	5
Sloughing and Exposure of tendon	11	11
Eczema and Irritant Dermatitis	19	19
Bony Changes(Periostitis,osteoporosis, Osteomyelitis)	2	2
Contracture	1	1
Haemorrhage	1	1
Subcutaneous calcification	3	3
No Complications	58	58

The eczema and irritant dermatitis were the most commonly encountered complications in 19 cases followed by sloughing and exposure of tendon in 11 cases and gangrene was seen in 5 cases. Significant Haemorrhage occurred in a case of venous ulceration requiring admission and resuscitation. Bony changes

occurred in 2 patients causing prolonged morbidity.

Table-5: Commonly isolated organisms from wound

S.No.	Organisms	No. of Cases	Percentage
1	Staphylococcus Aureus	68	68%
2	Streptococcus Pyogenes	14	14%
3	Escherichia coli	17	17%
4	Klebsiella	5	5%
5	Proteus mirabilis	15	15%
6	Others	26	26%
7	Sterile	25	25%

75 out of 100 cases were positive for various organisms during routine pus culture. Staphylococcus Aureus was the most frequently isolated organism (68%) followed by E.coli (17%) and Proteus species (15%).In many wounds more than one organism was isolated. No organism could be isolated in 25 cases.

Table-6: Disappearance of slough, Appearance of healthy granulation tissue & complete Healing

Aetiology	No.of Cases	Disappearance Of Slough			Appearance Of Healthy granulation Tissue			Complete Healing		
		<1WK	1-2WK	>2WK	<2WK	2-3WK	>3wk	<4wk	4-6wk	>6wk
Diabetic Ulcers	32	2	20	7	2	18	9	2	19	6
Venous Ulcers	31	3	21	7	3	16	12	3	19	4
Arterial Ulcers	3	-	1	-	-	1	-	-	1	-
Trophic Ulcers	18	2	5	9	2	5	9	2	1	7
Tubercular Ulcers	2	-	2	-	-	2	-	-	1	1
Traumatic Ulcers	14	7	7	-	7	7	-	7	6	1
Total	100	14	56	23	14	49	30	14	47	19

It is evident from the table above that for disappearance of slough it took less than one week in 14 patients while it took 1-2 weeks in 56 patients but in 25 patients it took more than 2 weeks for disappearance of slough. For the appearance of healthy granulation tissue it took less than 2 weeks in 14 cases while it took 2-3 weeks in 49 patients but in 30 Patients it took more than 3 weeks before healthy granulation tissue appeared. In 5 Patients amputation had to be done because of development of gangrene .In 2 patients (one diabetic

and another trophic ulcer) continued to have slough and infection. They developed osteomyelitis and underwent amputation.

For complete healing it took less than four weeks in 14 patients while in 47 patients it took around 46 weeks for complete healing and in 19 Patients it took more than 6 weeks for complete healing with conservative management.

One Patient with traumatic ulcer at posterolateral aspect of left knee achieved complete healing but developed contracture for which contracture release with skin grafting has to be done.13 patients failed to achieve complete healing despite development of healthy granulation tissue. In these Patients skin cover had to be provided in the form of skin grafting or flap. Overall in 21 cases some sort of surgical intervention like amputation, skin grafting or flap was required to achieve complete healing.

No adverse reaction with collagen was seen in any of the cases and the quality of the wound healing was good in all the cases managed with collagen based wound dressing.

Treatment of wound

Thus a total of 79 Patients were conservatively managed using collagen based wound dressings and other modalities required for the management of primary cause whereas 21 cases required some form of surgical intervention for the healing of ulcer.

DISCUSSION

Wound dressings have evolved from the status of providing physical protection to the raw surface, absorbing local exudates and controlling local infection by local medications to the level of providing adequate environment promoting wound healing. This has been achieved by modern wound dressing technique by promoting granulation tissue formation. Concept of moist wound dressing which came into vogue in 1960's revolutionised wound care. This led to further research in this direction leading to influx of many products like semi-permeable plastic film dressings, Hydrocolloids, Hydrogels etc. In the wound care scenario, each claiming a better wound healing rate than the others. As the concept of outcome based medicine evolved, the need for a better wound dressing modality became more acute.

All the Patients with chronic non-healing wound were subjected to daily collagen based wound dressings and other modalities of management required for underlying cause of chronicity and the wound was evaluated weekly. Evaluation of the role of collagen in management of chronic Non-healing wounds was made in terms of complete healing or Non-healing, duration of wound healing, any adverse reaction due to collagen dressing & quality of wound healing.

In the study for disappearance of the slough it took < 1 week in 14 patients while it took 1-2 weeks in 56 patients but in 25 Patients it took more than 2 weeks for disappearance of slough. For the Appearance of healthy granulation tissue it took < than 2 weeks in 14 cases while it took 2-3 weeks in 49 Patients but in 30 Patients it took more than 3 weeks before healthy granulation tissue appeared. In 5 Patients amputation has to be done because of development of gangrene. In 2 Patients (1 diabetic and another trophic ulcer) continued to have slough with Infection. They developed osteomyelitis and underwent amputation. For complete healing, it took < 4 weeks in 14 patients while in 47 Patients it took around 4-6 weeks. In 19 Patients it took less than 6 weeks for complete healing with conservative management. One Patient with Traumatic ulcer at posterolateral aspect of Knee achieved complete healing but developed contracture for which contracture release with skin grafting has to be done. 13 Patients failed to achieve complete healing despite development of healthy granulation tissue. In these Patients skin grafting or flap was required. In 21 cases surgical intervention like amputation, skin grafting or flap was required for complete healing.

Veves A,et al[1] studied a total of 276 cases of diabetic foot ulcers from 11 centres and reported that more wounds achieved complete healing with promogran(a collagen /oxidised regenerated cellulose dressing) treatment, especially in wounds <6 months duration in comparison to standard treatment. The result in our study are comparable to this report.

Vin F, et al [2] studied a total of 73 Patients of Venous ulcers and reported that Promogarn accelerated healing in venous leg ulcers with 20% more wound healing improved. A significant reduction in wound area was achieved with Promogran over Non-Adherent dressings

and compression alone. The result in our study are comparable.

Nisi G, at al[3] studied a total of 80 patients of Pressure sores and reported that more wounds achieved complete healing with Promogran (90% to 70%), within shorter healing times and proved more cost effective. The results in our Study is comparable.

In our study no adverse reaction to collagen was seen in any of the cases and the quality of the wound healing was good.

CONCLUSION

*Disappearance of slough took place in <1 week in 14% of cases ,in 1-2 weeks in 56% cases and in 23 % cases it did not take place even after 2 weeks.

*Healthy granulation tissue appeared in < 2 weeks in 14% cases, in 2-3 weeks in 49 % cases while in 30% cases it did not appear even after 3 weeks.

*Complete healing took place in 14% cases in < 4 weeks, in 47% cases it took around 4-6 weeks, in 19% cases it took 6 weeks with conservative management, and in 21% cases some surgical intervention was required.

*No adverse reaction was observed with collagen in any of the cases.

*The quality of wound healing was good in all of the cases.

*Collagen based wound dressings are cost effective as they significantly reduce time of healing.

*Collagen based dressings are user friendly and requires only a cover dressing.

*Collagen based dressings are indicated in almost all types of wounds.

Conflict of Interest: None.

Source of Support: None declared.

REFERENCES

1. Veves A, Sheenan P, Pham HT.A Randomized, controlled trial of Promogran (a collagen/oxidised regenerated cellulose dressing) vs standard treatment in the management of diabetic foot ulcers. Arch Surge 2002; 137(7):822-7.
2. Vin F,Teot L ,Meaume S.The healing properties of Promogran in venous leg ulcers wound care 2002;11(9):335-41.
3. Nisi Brandi C,Grimaldi L ,et al use of a protease modulating matrix in treatment of pressure sores. Chir Ital 2005;57(4):465-8.
4. Role of collagen in wound management, wounds UK 2011, Vol7.No2.
5. A Bhusan et al.Role of collagen granules dressing in the management of chronic ulcer.MedPulse International journal of surgery. August 2017; 3(2)72-74.http://www.medpulse.in/surgery/.
6. Efficacy of collagen particles in chronic non-healing ulcers clin diagn res 2015 Jun; 9(6); Pc01-pc03, PMCID: PMC4525546, PMID: 26266157.
7. Clinical study of sterile collagen particles (Biofil) in the management of chronic non Healing ulcers; Dr Edwina vasantha M.S et al JMSCR Volume 05 Issue 04 April 2017.
8. A review of collagen and collagen based wound dressing; David Brett (/Taxonomy /term/1454, December 2008, volume 20, issue 12.
9. Recent Advances in management of chronic Non Healing Diabetic foot ulcers, JIMSA October-December 2011 Vol.24 No.4.
10. A comparative study of collagen granules Vs conventional Dressings in case of chronic non healing ulcer,IOSR Journal of Dental and Medical Sciences (IOSR-JDMs)e-ISSN:2279-0853,p-ISSN:2279-0861.Volume 16 ,Issue 2 Ver ,III(February,2017),PP149-152.

DOI Number: 10.5958/2321-1024.2019.00010.2

Study of Post Surgical Site of Abdominal Infections in Andhra Pradesh Population

KVR Ram Mohan[1] , Rajesh Jasti[2]

[1]Assistant Professor, GSL Medical College, Rajahamundry, (Andhra Pradesh), [2]Assistant Professor, Department of General Surgery, Mamata academy of medical sciences, Bachupally , Hyderabad, (Telangana State)

ABSTRACT

Out of 198 abdominal surgeries in adult patients (111 males and 87 females) 16(8%) patients had infections at surgical site, 3(18.7%) were cholecystectomy, 3(18.7%) were appendectomy, 3(18.7%) had umbilical hernia repair, 2 (12.5%) had hepatectomy, 2(12.5%) had vagotomy, 3(18.7%) had post-KUB surgeries. History of the these patients was 5(31.2%) were Diabetes mellitus (D.M), 2(12.5%) were smokers, 2(12.5%) were anemic, 4(25%) were obese, 3(18.7%) were malnourished. The organisms at the post surgical infected site were 9(56.2%) E.Coli, 4(25%) had staphylococcus, 3(18.7%) had klebsiella. This surgical site infections at different surgeries will lead to many risk factors & end into morbidity and mortalities if not treated with suitable antibiotics. This study will be quite useful to surgeons, pathologist and microbiologist to treat the wounds before leading into secondary infections.

Keywords:- *DM- Diabetes Mellitus, KUB- Kidney Urinary Bladder infections, SSI- Surgical site infection.*

INTRODUCTION

Post surgical site infections are major problems to the surgeons[(1).] Although many advances have been made in infection control practices including improved operating room ventilation, sterilization methods, barriers, surgical techniques and availability of antimicrobial prophylaxis, the surgical site infections remain a substantial cause of morbidity, prolonged hospitalization, and death. The mortality rate due to surgical site infection is (3%) and 7.5% surgical site infection (SSI), associated deaths are directly attributed to the SSI[(2)] . Globally CDC and health care associated infections reported that 31% SSI were observed among hospitalized patients[(3)(4)]. This surveillance of SSI is a vital step as it provides an insight into the magnitude of problems helps to concerned authorities to take preventive majors and precautionary steps pre and post surgically to avoid morbidity, prolonged hospital stay and morality which leads to economic burden to the patients at the cost of reputations of medical institutes.

Corresponding author:
Rajesh Jasti
Assistant Professor, Department of General Surgery, Mamata academy of medical sciences, Bachupally, Hyderabad – 500090 (Telangana State)

MATERIAL AND METHOD

198 patients of both sexes (111 males and 87 females) of different age group admitted in the General Surgery ward, GSL medical college hospital, Rajahmundry—533296, Andhra Pradesh, for different abdominal surgeries viz cholecystectomy, appendectomy, umbilical hernia repair, hepatectomy, vagotomy and KUB surgeries. Out of 198 patients 16 patients got infected at surgical site, their infection was studied with culture and sensitivity, causative organisms were identified and treated with appropriate antibiotics, moreover the history of post surgically infected patients was also noted to avoid predicted risk factors. Their hematological investigations, radiological examination of abdomen was carried out to rule out any secondary infections. The duration of this study was about four years (2014 to 2018) .

OBSERVATION AND RESULTS

Table-1 Names of the post surgical site infections 3(18.7%) cholecystectomy, 3(18.7%) appendectomy, 3(18.7%) umbilical hernia repair, 2(12.5%) hepatectomy

, 2(12.5%) vagotomy ,3(18.7%) post KUB surgeries.

Table-2 History of patients of post surgical site infected, 5(31.2%) DM, 2(12.5%) smokers, 2 (12.5%) Anemic, 4(25%) were obese, 3(18.7%) were malnourished.

Table-3 Study of prevalence of organism in the site of post surgical infection 9(56.2%) were E.coli, 4(25%) were staphylococcus, 3(18.7%) were klebsiella .

Table-4 Percentage of infection rate was compared with previous studies.

DISCUSSION

The present study of infections in Andhra Pradesh populations 16(8%) of 198 abdominal surgeries, 3(18.7%) were cholecystectomy, 3(18.7%) appendectomy, 3(18.7%) umbilical hernia repair, 2(12.5%) hepatectomy, 2(12.5%) were vagotomy ,3(18.7%) post surgery of KUB (Table-1). History of post surgical site infected patients were 5(31.2%) were DM, 2(12.5%) were smokers, 2(12.5%) were anemic, 4(25%) were obese , 3(18.7%) were malnourished (Table-2). The organism observed in the surgical site infection were 9(56.2%) E.coli, 4(25%) staphylococcus, 3(18.7%) were klebsiella (Table-3). These obtained values were more or less in agreement with previous studies [5][6][7].

Beside harming the patients, these infections of surgical site can affect nurses, physicians, aides, visitors, custodian and anyone who has contact with hospital[8]. Apart from the reduced immunity status of the patients the rates of post operative surgical site infections were higher (17.5%) among the patients who were operated by the junior surgeons with lesser experiences[9]. It was also observed that emergency surgeries had lower rates of SSI than elective surgeries (8.7%). while elective surgeries had SSI rates were (13.1%)[10]. The probable reason could be prolonged stay at hospital after elective surgeries due to old age and post surgical weakness recovery. Hence exposure to hospital environment may aggravate the SSI. While in emergency operations the stay of patients in hospital would be of shorter duration compared to elective surgeries.

SUMMARY AND CONCLUSION

The present study of post surgical site of abdominal infection in Andhra Pradesh population will certainly introspect the surgeons, nurses, aids and hospital authorities to take preventive and precautionary steps before and after surgery which may present the risk of morbidity and mortality. This study demands further patho-physiological, microbiological, genetic, nutritional, and immunological study because little is known about mechanism, duration process and magnitude of infections caused by different organisms.

This research is approved by ethical committee of GSL medical college and hospital ,Rajahmundry – 533296 (Andhra Pradesh)

Table-1: Post surgical site infections

Sl. no	Types of Operation	No of patients	Percentage (%)
1	Cholecystectomy	3	18.7
2	Appendectomy	3	18.7
3	Umbilical Hernia repair	3	18.7
4	Hepatectomy	2	12.5
5	Vagotomy	2	12.5
6	KUB surgeries	3	18.7

KUB= Kidney Urinary Bladder

Table-2: History of the patients of Post surgical infected

Sl. no	Particular	No of patients	Percentage (%)
1	DM	5	31.2
2	Smokers	2	12.5
3	Anemia	2	12.5
4	Obesity	4	2.5
5	Malnutrition	3	18.7

Table -3: Study of prevalence of organism

Sl .no	Name of the Organism	No of patients	Percentage (%)
1	E.Coli	9	56.2
2	Staphylococcus	4	25
3	Klebsiella	3	18.7

Table-4: Comparison with previous studies of surgical site infections

Sl. no	Name of the workers and Year	Percentage (%) of Infection rate
1	Sabia Bibi et.al (2009)	7.3
2	Satya Narayan(2010)	2
3	Anand Saxena (2013)	14
4	Manisha Dhamecha (2014)	4.25
5	Dhodia. JP & Sandeep Rao (2018)	7.9
6	Narasingha Rao Bandaru (2012)	17.5
7	Present study	8

No **Conflict of Interest**

No **Funding**

REFERENCES

1. Emori T.G. Goymes R.P- A overview of nasocomial infections including the role of microbiology laboratory clin. Microbial Rev.1993 6(4), 428-442
2. Maragaret, A Oslen. Jaffeny J - Risk factors for surgical site infections following orthopedic spinal operations. J Bone, joint surgery. Am 2008, 90,62-9
3. Alicaj Mangran - Guide lines for prevention of surgical site infection. Infect control and Hospital Epi 1999, 20(4) 247-78.
4. Narasinga Rao, Bandaru Ranga Rao - Prospective study of post operative wound infections in a teaching hospital of rural set up J.ap clin and Diagnostic Research ,2012. 6 (7).1266-71
5. Lichtenstern C Schmidt J – Post Operative bacterial/ fungal infections. A challenging problem in critically ill- patients after abdominal surgery Dig. Surg. 2007, 24, 1-11
6. Collier. M- Recognition and management of infections, worldwide can/2004/ January/ collier/ management of wound infection. Html viewed on 7-10-2018
7. Shojoei H, Borjian S – surveillance of clean surgical procedures. An indicator to establish a baseline of a hospital infection problem in a developing country Iran. Ind. J. Surg.2006, 68 (2), 89-92
8. PreScott. Harley and Klein – Microbiology 5th edition 2002, 848-69, Mc Graw- Hill Co. publication
9. Freitas PF campos ML – wound infections after pre-operative depilatory versus razor preparations. Am-J. Surg. 2005, 5 (2), 1-5
10. Barowolf S. Sohrd – Reduction of surgical site infections after caesarian delivery using surveillance J of Hosp inf. 2006, 64, 156-61.

DOI Number: 10.5958/2321-1024.2019.00011.4

A Retrospective Study on Use of Neostigmine for Management of Non Mechanical Bowel Obstruction

Pradeep Kumar[1], Vishal Saxena[2], Sohal Pal Singh[3], Usha Singh[4], Nitin Chauhan[5], Vijay Mittal[5]

[1]Associate Professor LLRM Medical College Meerut, [2]Assistant Professor LLRM Medical College Meerut, [3]Professor LLRM Medical College Meerut, [4]Professor SIMS Hapur, [5]Junior Resident, LLRM Medical, College Meerut

ABSTRACT

INTRODUCTION: In this study we study the role of neostigmine in nonmechanical bowel obstruction either it may be due to post operative ileus or may be due to some severe illness like pancreatitis and liver abcess. In post operative ileus normal bowel function can be affected by three main mechanism: neurogenic ,inflammatory mediators and gastrointestinal hormones. In GI system parasympathetic system increase gut motility while sympathetic system inhibit gut motility. . After major surgeries sympathetic nervous system tends to be more active than parasympathetic one which causes ileus.

METHOD: All patients receive 2.5 mg of neostigmine IV (diluted in 10 ml normal salie) over a period of five minutes. All patients were monitored by electrocardiography; atropine and glycopyrolate was kept ready on bedside and 1.0 mg was given intravenously in case of symptomatic bradycardia.

RESULTS: In our study we retrospectively analyzed 45 patients. Out which 28 were male and 17 patients were female. Male to female ratio was 1.65:1. The patient ranged from 18 years to 70 years. 27 patients showed improvement in clinical symptoms(passed flatus and faeces) after 3 to 5 minutes, 12 patients showed improvement in 5 to 10 minutes and 4 patients showed improvement in more than 10 minutes. 2 patients was not improved till one hour after injecting neostigmine. Symptomatic bradycardia was seen in 3 (~7%) patient. In two patient pulse rate was decreased upto 36. Abdominal pain was the most commen side effect noticed in 23 (~51%) of patients, excessive salivation(~30%) and vomiting(~20%) were second and third most commen side effect respectively.

CONCLUSION: On the basis of our findings we can suggest that it is feasible to use neostigmine in non mechanical bowel obstruction.

Keywords: *Nonmechanical Bowel Obstruction , Neostigmine.*

INTRODUCTION

In this study we study the role of neostigmine in nonmechanical bowel obstruction either it may be due to post operative ileus or may be due to some severe illness like pancreatitis and liver abcess or may be post head injury or 'may be in patients of Blunt Trauma Abdomen with hemoperitoneum due to solid organ injury without hpllow viscus injury.

Post operative ileus is mainly due to factors that disrupt the normal coordinated propulsive motor activity of intestine[1,2,3]. Normally post operative ileus(physiological) generally lasts for 24 hours in small intestine upto 48 hours in the stomach and upto 72 hours in the colon[2,4,5]. In nonmanipulated area during surgery peristalsis comes earlier than manipulated one.[6,7] When GI motility will not return to normal within physiological time limit known as pathological ileus.[8,9]

Corresponding author:
Dr.Vishal Saxena
Assistant Professor, (Department of Surgery, LLRM Medical College Meerut, UP , India)
Email:drvishalsaxena.VS@gmail.com

In post operative ileus normal bowel function can be affected by three main mechanism: neurogenic ,inflammatory mediators and gastrointestinal hormones[10] anaesthetic drugs and manipulation of bowel affect one or more of these mechanism.

In GI system parasympathetic system increase gut motility while sympathetic system inhibit gut motility,intrinsic nervous system of colon is different it lacks gap junctions ,the colon does not exibhit synergistic peristaltic waves . we all know that recovery of bowel motility accurs in a stepwise manner ,small intestine first than stomach and the colon last. After major surgeries sympathetic nervous system tends to be more active than parasympathetic one which causes ileus.[11]

In postop case of adhesiolysis we purposefully give neostigmine after 24 hrs to prevent further adhesion formation by giving bowel motility.

In cases of Blunt Trauma Abdomen with hemoperitoneum due to solid organ injury like Grade 1or 2 Liver or Renal laceration without hollow viscus injury which were managed conservatively some patients developed abdominal distention post injury day 3or4 due to pseudo obstruction.

In rare cases acute pancreatitis is also associated with colonic obstructions,and it does so mainly at splenic flexure and transverse colon [12]. Main cause of bowel obstruction in acute pancreatitis is retroperitoneal inflammation. Proximity of bowel loops to anterior surface of pancreas leads to extravasation of enzymes into bowel loops that mechanically obstruct bowel pathways.[13].

Besides it many other severe illnesses causing parotinitis like appendicitis, liver abcess,splenic abcess also show association with paralytic ileus .

In post head injury patient some patients on post injury day3 develop abdominal distention, constipation with absent bowel sounds

METHOD

Patient with non mechanical bowel obstruction who were 18 years of age or older were recruited for study between March 2017 and April 2018 from inpatient surgical wards of SVBP Hospital Meerut. To be eligible for the study patient had to have a CECT whole abdomen done to rule out any mechanical cause of obstruction. Patient were enrolled in the study if clinical examination and abdominal radiographs failed to improve after 48 hours of conservative management that included NPO, naso gastric suction IV fluids and electrolyte replacement.

Exclusion criteria included a baseline heart rate of less or equal to 60 beats per minute; signs of intestinal perforation, with peritoneal signs on physical examination or free air under right dome of diaphram on x ray abdomen AP erect; active bronchospasm ; treatment with drugs such as cisapride or metoclopramide (ptokinetic) in the 24 hours before neostigmine injection.

All patients receive 2.5 mg of neostigmine IV (diluted in 10 ml normal salie) over a period of five minutes. All patients were monitored by electrocardiography; atropine and glycopyrolate was kept ready on bedside and 1.0 mg was given intravenously in case of symptomatic bradycardia. Patients were instructed to remain in supine position for at least 30 minutes after the injection. Vital signs like BP,pulse,saturation were recorded immediately before the injection and five minutes and three hours afterward.

The doctor administering the infusion monitored the clinical response for 30 minutes after the injection. The maximal abdominal circumference and the diameter of dilated bowel loops on plain radiographs were measured before and three hours after injecting neostigmine.

RESULTS

In our study we retrospectively analyzed 45 patients. Out which 28 were male and 17 patients were female. Male to female ratio was 1.65:1. The patient ranged from 18 years to 70 years

Table 1. demographic characterstcs of the study group(n=45)

GENDER	
MALE	28
FEMALE	17
AGE	
18-30	08
31-40	10
41-50	14
51-60	11
61-70	02

Study population (n=45)	
Table 2. Showing various no. of patient of different diseases taking for study.	
Postoperative patients	
POC of Adhesiolysis 10	
Ileostomy	08
Post BTA with hemoperitoneum d/t solid organ injury without hollow viscus injury	05
Other severe illness	
Pancretitis	12
Liver abcess	08
Post head injury	02

27 patients showed improvement in clinical symptoms(passed flatus and faeces) after 3 to 5 minutes, 12 patients showed improvement in 5 to 10 minutes and 4 patients showed improvement in more than 10 minutes. 2 patients was not improved till one hour after injecting neostigmine.

Table 3. Showing response time of neostigmine in various patient

N	RESPONSE TIME (in minutes)
27 (~60%)	**3-5**
12	**5-10**
04	**>10**
02	**No response**

Table 4. Showing result of study

RESUIT	
Clinical response –no.(%)	43(~95%)
Change in abdominal circumference-cm	
Median	-7
Range	-1 to -26
Change in small bowel diameter -cm	
Median	-1.5
Range	-0.5 to -2
Change in diameter of colon –cm	
Median	-4
Range	-1 to -12

Symptomatic bradycardia was seen in 3 (~7%) patient. In two patient pulse rate was decreased upto 36. Abdominal pain was the most commen side effect noticed in 23 (~51%) of patients, excessive salivation(~30%) and vomiting(~20%) were second and third most commen side effect respectively.

DISCUSSION

Neostigmine is acetylcholinesterase inhibitor ,it was first synthesized by Aeschlimann and Reinert in 1931 [14]. Use of neostigmine is well documented in acute colonic pseudo-obstruction but its use in other causes of nonmechanical bowel obstruction is still a matter of debate. According to study done by Raul Guillermo et all in sep 2014 published in ANNALS OF MEDICINE SUGERY in june 2014, neostigmine effectiveness to resolve ACPO with only one dose averaged was 89.2% compareing with our study for all causes of non mechanical bowel obstruction its value is 95% reflecting its usefulness in nonmechanical causes of paralytic ileus.

In this study pain abdomen was also the most common side effect occurred in 53.1% cases other side effects were excessive salivation in 31.1% cases ,vomiting in 15.6% cases. In our study most common side effect was also pain abdomen occurred in 51% of cases and other side effects excessive salivation(30%) and vomiting(20%)

In a study published in Critical Care Medicine: January 2018 - Volume 46 there was bradycardia in 7% of patients none requiring atropine therapy. In our study bradycardia occurred in 7% caes with no requirement of atropine.

Hallerback et al.[15] conducted a randomised study on patients with ileus following open cholecystectomy. Patients were treated with neostigmine and propranolol (n = 16), neostigmine (n = 18) or were placebo-treated controls (n = 17). Mean time to passage of faeces and

flatus was significantly reduced with neostigmine and propanol compared to the control group . In our study the response time is 3 – 5 minutes in 60% of cases reflecting that use of neostigmine significantly reduces response time.

CONCLUSION

On the basis of our findings we can suggest that it is feasible to use neostigmine in non mechanical bowel obstruction.

Source of Funding- Self

Conflict of Interest- None

Ethical Committee Clearence- Taken

REFERENCES

1. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Textbook of Surgery. The biological basis of modern surgical practice, 17th ed, Elsevier Saunders, 2004.
2. Schwartz's Principles of Surgery, 8th ed, Brunicardi FC (Ed), McGraw Hill, 2005.
3. Miedema BW, Johnson JO. Methods for decreasing postoperative gut dysmotility. Lancet Oncol 2003; 4:365.
4. Wilson JP. Postoperative motility of the large intestine in man. Gut 1975; 16:689.
5. Livingston EH, Passaro EP Jr. Postoperative ileus. Dig Dis Sci 1990; 35:121.
6. Schwarz NT, Kalff JC, Türler A, et al. Selective jejunal manipulation causes postoperative pan-enteric inflammation and dysmotility. Gastroenterology 2004; 126:159.
7. Wehner S, Straesser S, Vilz TO, et al. Inhibition of p38 mitogen-activated protein kinase pathway as prophylaxis of postoperative ileus in mice. Gastroenterology 2009; 136:619
8. .Cheatham ML, Chapman WC, Key SP, Sawyers JL. A meta-analysis of selective versus routine nasogastric decompression after elective laparotomy. Ann Surg 1995; 221:469.
9. Ramirez JA, McIntosh AG, Strehlow R, et al. Definition, incidence, risk factors, and prevention of paralytic ileus following radical cystectomy: a systematic review. Eur Urol 2013; 64:588.
10. G.E. Boeckxstaens, W.J. de JongeNeuroimmune mechanisms in postoperative ileus Gut, 58 (2009), pp. 1300-1311
11. S. Wehner, T.O. Vilz, B. Stoffels, et al.Immune mediators of postoperative ileus Langenbecks Arch Surg, 397 (2012), pp. 591-601
12. Aldridge MC, Francis ND, Glazer G, Dudley HA. Colonic complications of severe acute pancreatitis. Br J Surg. 1989;76(4):362–367. doi: 10.1002/bjs.1800760416.
13. Gardner A, Gardner G, Feller E. Severe colonic complications of pancreatic disease. J Clin Gastroenterol. 2003;37(3):258–262. doi: 10.1097/00004836-200309000-00012.
14. Neostigmine: from Wikipedia; the free encyclopedia, http://en.wikipedia.org/wiki/Neostigmine.
15. B. Hallerbäck, S. Ander, H. GliseEffect of combined blockade of beta-adrenoceptors and acetylcholinesterase in the treatment of postoperative ileus after cholecystectomy

DOI Number: 10.5958/2321-1024.2019.00012.6

Retrospective Analysis of Bacterial Spectrum and Associated Risk Factors in Post-Operative Wound Infection

Satish Kumar[1], Mohit Kumar Mathur[2], Ashutosh Niranjan[3]

[1]Assistant Professor, [2] Associate Professor, [3]Professor and Head of Department of Surgery, Sharda hospital, Knowledge park II-III, Greater Noida, UP

ABSTRACT

Introduction: Post-Operative wound infection is very interesting for the surgeons since it is considered inevitable in some cases and also very unfortunate. In spite of great sophistication in surgical techniques and recent advances in the microbial studies, the post-Operative wound infection remains to be ever challenging in the daily practice of the surgeon. It is utmost discomfort to the patient, causes delay in resuming work due to disability, decreases the quality of life of the patient and increases financial burden to the patient especially in a resource limited country like ours. This retrospective study conducted in Sharda Hospital, briefly discusses the history and the relevant definition necessary for the discussion of surgical site wound infection, the known postulated risk factors and the profile of causative micro-organisms. **Material and Method:** Hundred cases of laparotomies (emergency and elective) carried out in Sharda Hospital in August 2015 and November 2017 were included in the study and studied retrospectively. Study is based on the clinical observation of the patient. All the patients irrespective of age were included in the study. For the convenience, laparotomy wounds are graded as Grade0-No infection, Grade1-Surgical site erythema, Grade2-Subcutaneus collection, Grade3-Patial burst, Grade4-Complte Burst. **Result:** The incidence of post-operative wound infection was 26%.The percentage of post-operative wound infection increases with the poor nutrition, increasing age,hypo-proteinemia,anaemia,contaminated peritoneum of abdomen, poor chest compliance. The rate of post-operative wound infection is directly proportional to the duration of surgery, longer stay in the hospital. Deranged liver function and kidney function lead to increase incidence of post-operative wound infection. The rate of post-operative wound infection is less in cases where the gastro-intestinal tract was not opened. The most common Infecting organism found was Escheria coli.

Keywords: *Post-Operative wound, Infection, Infective organisms, seroma.*

INTRODUCTION

The post-operative surgical infections are interesting but are also inevitable .in spite of tremendous advancement in surgical techniques and treatment of infections the post –operative infections continue to be a disturbing event in the treatment of surgical patients[9] (Khyati Jain et al).

Address for Correspondence:
Dr Mohit Kumar Mathur
Associate Professor, Department of Surgery, Sharda Hospital,Knowledge Park, Greater Noida,UP-201306**.**
Email:dr_mohitmathur@yahoo.com

Surgical site infection is a big trouble to the patient which may end up in disastrous consequences. The post-operative wound infection may manifest as collection of pus at the site of operation before the sutures are removed or stitch abscess leading to tissue necrosis terminating in septicaemia shock and death to the patient.it causes delay and discomfort in resuming in work because of disability. The quality of life of the patient also deteriorates and it also causes financial loss to the patient[10] (Narsinga Rao Bandaru et.al).

So far, it has not been feasible to eliminate the post-operative wound infection completely[11] (Guliani et.al.).So, it keeps on consuming the considerable finance of the patient and of the state.it also reduces the comfort and wellbeing of the patient. The reduction in

the rate of post-operative wound infection could have considerable benefit in terms of resources available to the patient and the state and the wellbeing of the patients. MRSA infections are generally multidrug resistant and their therapy entails a huge drain on financial resourses[6] (Divya p.j at el).Presently the problem of post-operative wound infection appears to be stupendous and terrible.

Even though enough newer antibiotics are developed; they are not capable of containing the infections present in the wards[8] (Malhotra R et al). The nosocomial infections, the development of resistance to the new antibiotics by the bacteria make it very difficult to cure the post –operative wound infections.

This study will discuss and establish various risk factors for development of post-operative wound infection and also the profile of causative bacteria's.

The study includes the 100 cases of laparotomy (elective as well as emergency) which were performed during the period of August 2014-June 2018.

AIMS AND OBJECTIVES

To calculate the incidence of post –operative wound infections after emergency and elective laparotomies.

To find out the type of pathogenic organisms causing laparotomy wound infections.

To co-relate the relationship of post-operative wound infections with the possible pre-disposing factors.

Material and methods

Hundred cases of laparotomies (Emergency and Elective) carried out from Aug2014 to June 2018 are studied retrospectively.

Study is based on clinical observation of patient.

All patients irrespective of age included in the study.

The patients on chemotherapy, steroid therapy, HIV, DM, TB, Cancer are excluded from the study.

Cases were studied under following headings:

1. Personal details of the patients

2. Pre-operative assessment of the patients

3. Pre-Operative investigations of the patients

4. Pre-operative skin preparations of the patients

5. Post-Operative antibiotics given to the patients

6. Operative details of the patients

7. Result-

The laparotomy wound infections were graded as follows:

0-No infection

1-surgical site erythema

2-Subcutaneous collection

3-Partial burst

4-complete burst

Additionally:

Pre –Operative skin preparations were done for all patients

Peri-Operative antibiotics were given to all patients

Nutritional assessment has been done for all patients with mid arm circumference

Broca,s Index calculated for all patients

Serum proteins done for all patients

Skin fold thickness done for all patients

For patients with peritonitis and peritoneal contamination ascitic fluid sent for routine, microscopic examination. Pus Culture and sensitivity done for all surgical site wound infections.

OBSERVATIONS AND RESULTS

Infection Rate

Out of the hundred total cases 26% indicated post-Operative wound infection. So the percentage of wound infection was 26%.

Sex Ratio

Sex distribution of post-Operative wound infection in males and females showed that 33.33% of female patients and 20.70% of male patients were infected.

Age distribution

Post-operative wound infection is commoner in old age groups.it was found to be 40% in >50 years of Age and it was 20-33% in the younger age group.

Post-Operative wound infection in differing nutritional status

The incidence of Post-operative wound infection was found to be highest in cases with poor nutritional status.it was found least in well-nourished groups. In nutritionally well group, it was 13.92 percent and in nutritionally poor group it was 33.33 precent.Broca, s index was taken as to determine the nutritional status of the patients along with mid arm circumference, skin fold thickness, serum proteins and Hb concentration.

Table-1: Respiratory complication status

Status	No.	Infected	percentage
Clear	68	17	25%
Pleural Effusion	13	5	38.46%
Consolidation	09	3	33.33%
Atelectasis	04	1	25%
COPD	06	0	0%
Total	100	26	

This shows the post- operative wound infection rates in cases with compromised pulmonary functions and in cases with normal chest functions. In cases having clear chest, the wound infection rate was 25%.It increased with reduced compliance of the lung up to 40 %.

Post-Operative wound infections in differing Hb concentrations

The study of Hb concentration signifies the nutritional status of the patients. Hb concentration less than 10 gm % is taken as Anaemia.so, here is comparison of incidence of post-operative wound infection with varying levels of Haemoglobin. The incidence of post-operative wound infection is 50% if the Hb is less than 10 gm% and it is 21% if the Hb is above 10 gm %.So, as the Hb concentration increases rate of post-operative wound infection decreases. That is the reason, why anaemia and hypoproteinaemia is associated with high incidence of laparotomy wound infection.

Table-2: Post-operative wound infection in varying serum bilirubin concentration

Serum Bilirubin (mg %)	No. of cases	Infected cases	Percen-tage
0.5-1.0	46	10	21.73
1.1-1.5	34	08	23.52
1.6-2.0	10	04	40
2.1-2.5	10	04	40

The incidence of post-operative wound infection rises to 40% in cases of serum bilirubin increasing to more than 1.6 gm%.so, a jaundiced patient has more chances of getting post-operative wound infection.

Table-3: Post-operative wound infection in differing serum creatinine concentrations.

Serum Creatinine (mg %)	No.of Cases	Infected Cases	Percentage
0.5-1.0	48	6	12.5%
1.1-1.5	34	11	32.35%
1.6-2.0	10	5	50%
2.1-2.5	3	0	0
2.6-3.0	3	2	66.66
3.1-3.5	2	2	100

The rate of infection increases with increasing serum creatinine value. Normal level of serum creatinine is taken as 1 mg%. The study shows that the rate of infection is 32.35% if the creatinine level is up to 1.5 mg%, 66.66 % if the creatinine level is up to 3.0mg% and 100% at level above 3.1 mg. Therefore, diminished kidney function is associated with increased incidences of post-operative wound infection.

Post—operative wound infection in different serum proteins concentrations

Hypoproteinaemia is related to increased rates of post-operative wound infection. Serum proteins level show nutritional status of the patient. Low levels of serum proteins is associated with high incidence of post-operative wound infection. Serum proteins below 6 gm% have rate of infection of 53.84% whereas above 7 gm % it is 13.95%.

Post –Operative wound infection in different type of laparotomy

The incidence of laparotomy wound infection increases with emergency.in emergency laparotomy the rate of infection is 28.76% while in the laparotomies done electively rate of infection decreases to 18.51%.

Table-4: Post-operative wound infection in relation to blood loss.

Amount Of blood loss(ml)	No.of cases	Infected cases	Percentage
<100	32	6	18.75%
101-200	40	10	25%
201-300	9	1	11.11%
301-400	5	1	20%
401-500	3	2	66.66%
>501	11	6	54.54%

The intra-operative blood loss is harmful for the patient in many ways. If the blood loss is 100 ml the post-operative wound infection is 18.75% in our study.it rises to 54.54 % if the intra –operative blood loss is more than 500ml.hence, the post-operative wound infection increases with increase in intra-operative blood loss.

Post-operative wound infection in relation of the condition of peritoneum

The contaminated peritoneum is more likely to get post-operative wound infection as compared to the clean peritoneum. In our study the clean peritoneum developed only 10.71% post- operative wound infection as compared to 31.94% infection in cases of contaminated peritoneum .Therefore, the healthy peritoneum during laparotomy is associated with less infected cases whereas contaminated peritoneum during laparotomy is having more infected cases.

Post-operative wound infection in relation to peritoneal drains

In our study 27.47% of case with drains kept post-operatively developed wound infection and 11.11% without drain developed post-operative wound infection.

Table-5: Post-operative wound infection in relation to Time taken for surgery

Surgery Time(Hrs)	No.Of cases	Infected cases	percentage
<1	16	3	18.75%
1-2	54	8	14.81%
2-3	27	13	48.14%
>3	3	2	66.66

It was observed that more time taken during surgery would have derogatory effect on the patient that the rate of infection increases with the time taken during surgery. If the time taken during surgery was less than I hour the rate of infection was 18.75% .the rate of infection observed was 66.66% if the time taken during surgery was more than 3 hours.

Post-operative wound infection in relation to duration of stay in wards

The rate of post-operative wound infection is 100% if the duration of stay in the ward is more than 21 days It decreased to 16.66% if the duration of stay is less than 15 days. hence, the rate of laparotomy wound infection increases as the post-operative stay in the ward increases.

Post-operative wound infection in relation to suturing technique.

The interrupted suturing technique seems better over the continuous suturing technique. The post-operative wound infection rate was 22.44% in cases of interrupted technique while it was 29.41% in cases of continuous technique.

Table-6: Post –operative wound infection with profile of micro-organisms

Organism isolated	No. Of Patients
Pseudomonas Aeruginosa	3
Staphylococcus Aureus	4
E.coli	10
Klebsiella pneumonae	3
Proteus mirabilis	3
Anaerobes	3

We isolated causative organisms from 26 patients. Some of the patients had infection with only one micro-organism and the others were infected with multiple micro-organisms. E.coli was the most frequent organism found to infect the post-operative wounds.

DISCUSSION

Being a major inconvenience to the patient, the expenses of the patient also rises considerably as these patients wounds require prolonged stay in hospital .multiple dressings and repeated surgical interventions in the form of debridement and secondary suturings. Surgical site infection is the most common post-operative complication. Post-Operative wound infection have deleterious effects on the final result of operation and patient's full recovery.

This study of Post-operative wound infection has been done in Sharda Hospital in the year 2014-15. Hundred cases has been taken from the surgical ward and studied retrospectively. The Study includes both elective and emergency patients.

This study is undertaken to find out the likelihood of post-operative infection in cases of Post-operative laparotomy wound and to find out association between certain possible predisposing risk factors & wound infection with profile of causative organisms.

Howes said that wound infection is the septic breakdown of the devitalized tissue, blood clot or serum. Boyd said that the time required for complete repair of the wound depends on the number of factors of which amount of tissue destruction and the degree of asepsis are most important. However, direct bacterial inoculum is necessary. From the hundred cases 26% showed post-operative wound infection.

Out of the 26% infected cases 23 were males and 3 were females. There was greater number of men infected than the women.

Advancing age has definite effect on wound healing. In our study, the percentage of post-operative wound infection was highest in older age group (51-57) is 40%. malnutrition is linked with high probability of post-operative wound infection. Diabetes Mellitus has been thought to decrease host resistance to infection but in this study we have excluded diabetes mellitus.

In post-operative wound infection, condition of the chest of the patient is also an important deciding factor. The decreased compliance of the chest associated with pleural effusion, consolidation of lung, atelectasis of lung and COPD is associated with high incidence of post-operative wound infection.

Anaemia is an important factor in determining the post-operative wound infection. In this study 50% of the cases were infected if the Hb level was less than 10 gm%.

In case of contaminated peritoneum, the post-operative wound infection was 31.94% and 10.71 in case of healthy peritoneum.so, it should be important to keep the peritoneum clean and healthy and avoid spillage during surgery if one wishes to avoid post-operative wound infection.

Wound healing will critically depend on an intact inflammatory response for initial formation of wound matrix and subsequent maintenance of sterile environment. Increased level of serum creatinine is linked with impaired immune function leading to laparotomy wound infection and increasing risk of wound dehiscence. Jaundice is also associated with post-operative wound infection. Acute blood loss during surgery leads to poor oxygenation of the tissue which leads to good and fertile media for certain bacterial growth.

Longer stay of the patient in the ward will lead to higher rate of post-operative wound infection due to infection by the spectrum of bacteria that resides in the ward and colonizes the site of surgery.

Closure of the abdomen after surgery can be done either by continuous or interrupted suture technique. In this study interrupted technique was favourable with 22.44% infection and continuous with 29.41% of infection.

Factors influencing surgical site infection

There are many factors which influence surgical wound healing and determine the influence for, and the incidence of infection. The level of bacterial burden is the most significant risk factor, but modern surgical techniques and the use of prophylactic antibiotic have reduced the risk.

The operative wounds classification is based on the degree of microbial contamination was developed by US national research council in 1964.Three wound classes with an increasing risk of ssi_s were described :clean, clean-contaminated and dirty. The simplicity of this system of classification has resulted in it being widely used to predict the rate of infection after surgery.

CONCLUSION

The incidence of post-operative wound infection was 26%.

The percentage of post-operative wound infection increased with the:-

*Poor nutrition

*Increasing age

*Anaemia

*hypoproteinaemia

*Contaminated peritoneum of abdomen

*with poor chest compliance

3. The rate of post-operative wound infection is directly proportional to the duration of surgery and hospital stay.

4. Deranged renal function and liver function leads to increased incidence of post-operative wound infection.

5. The rate of Post-operative wound infection is less in cases where gastrointestinal tract was not opened.

6. The most common organism found in infected cases was Escherichia coli.

Conflict of Interest: None.

Source of Support: None Declared.

Ethical Clearance: Institutional ethical committee of Sharda University has granted the permission for this work.

REFERENCES

1: Alexander J.W.-Emergency concept of surgical infection-Surgery13th ed.unit1, chap 8; 232,234.

2: Atul sing and Srivastava-studies on hospital infection.Ind.J.of surgery-1969-31:613.

3: Alexander et al –nosocomial infection, current problems of surgery. Surgery annual 1977:94.

4: International Current microbiology and applied sciences, ISSN: 2319-7706 Volume5 Number 8(2016) pp.629-634.

5: International Journal of Anatomy, Radiology and surgery, 2015 Jan, Vol-4(1):6-12.

6: Divya P.J.Biosci Tech, Vol 6(3)2015, 697-702, ISSN: 0976-0172.

7. deSA L A,Sathe M J ,Bapat R D,Factors influencing wound infection(a prospective study of 280 cases) J Postgrad Med 1984;30:232

8: Malhotra R,Walia G.A study on factors affecting post-operative wound infection.Int J com Health and Med Res 2015;1(1):17-21

9: International journal of Integrative medical Sciences, Int J Intg Med Sci 2014, vol 1(1):9:13

10: Journal of clinical and diagnostic Research .2012 Sept (Suppl), Vol-6(7):1266-1271

11: International Journal of medical research professionals, Int J Med Res .2015; 1(3); 96-99.

DOI Number: 10.5958/2321-1024.2019.00013.8

Cornual Pregnancy: A Diagnostic Dilemma

Prashanta Krishna Gupta[1], Upma Saxena[2], Renu Arora[3]

[1]Senior Resident, [2]Professor& Senior Gynecologist, [3]Professor & Consultant, Deptt of Obstetric and Gynecology, VMMC & Safdarjang Hospital, New Delhi, India

ABSTRACT

Cornual pregnancy is extremely rare life-threatening condition. It is an enigma which requires careful approach for accurate diagnosis and treatment. We are presenting interesting case of cornual pregnancy which prior to diagnosis was posted for MTP by suction evacuation and laparoscopic tubal ligation. The most important lesson learnt is that if product of conception is not coming on suction and evacuation of intrauterine pregnancy confirmed priorly by ultrasonography, one must think of cornual pregnancy.

Keywords- *Cornual pregnancy, interstitial pregnancy, angular pregnancy, laparotomy*

INTRODUCTION

Cornual pregnancy accounts for less than 3% of all ectopic pregnancies[1] and often poses a diagnostic and therapeutic challenge.An interstitial pregnancy is a uterine but ectopic pregnancy; the pregnancy is located outside the uterine cavity in that part of the fallopian tube that penetrates the muscular layer of the uterus.[2] The term cornual pregnancy is sometimes used as a synonym but remains ambiguous as it is also applied to indicate the presence of a pregnancy located within the cavity in one of the two "horns" of a bicornuate uterus[2].

CASE REPORT

A 30 years old married female G4P3L3 , height of 156cm and weight of 56kg, belonging to low socioeconomic status presented to family planning(FP) OPD of VMMC &Safdarjang hospital with two months amenorrhea for first trimester MTP and laparoscopic tubal ligation. On examination, her pulse 80/min regular BP-110/70 mm Hg and on per vaginum examination uterus was anteverted,6-8wks size,bilateral fornix free , non-tender.On USG uterus was enlarged in size showing normal myometrial echopattern with single live intra-uterine pregnancy of 7wk+1d. Patient was posted for MTP and laparoscopic bilateral tubal ligation.Patient was given 400 microgram of misoprostol sublingually 4 hours prior to procedure. On suction and evacuation minimal product of conception(POC) were seen. On laparoscopy for bilateral tubal ligation it was found that uterus was enlarged and a bluish bulge was seen on right side of uterus which was presumed to be fibroid and bilateral laparoscopic tubal ligation was performed. Patient was discharged on same day and was asked to follow up in next week in FP OPD with report of USG pelvis to look for fibroid uterus and to rule out retained products of conception. However she came after two week with the complaint of persisting nausea and vomiting with no abdominal pain or fainting attack and a follow up USG showing live intrauterine pregnancy of 8week +6day with no adnexal mass .On repeat per vaginum examination uterus was anteverted 8-10 weeks size,non tender with bilateral fornix free and non tender . MTP was reattempted and intra operatively it was realized that uterine cavity was empty as no POC came out. Ultrasound was done immediately after MTP and it showed empty uterine cavity with 9weeks live intrauterine pregnancy on right side of uterus little away from uterine cavity clinching the diagnosis of right cornual pregnancy. Repeat ultrasound by radiologist showed eccentrically placed intrauterine gestation and MRI was advised. Patient was admitted ,counselled and posted for laparotomy after arranging one unit blood as diagnosis of un ruptured cornual pregnancy was very obvious by that time. On laparotomy unruptured

Corresponding Author:
Upma Saxena
Professor& Senior Gynecologist,
Address:M-14 (Residence) Greater Kailash Part 2,New Delhi -110048,India.
mail: upma_saxena@hotmail.com, TEL:09971460540

right sided bluish cornual bulge due to cornual ectopic pregnancy was seen with right round ligament medial to the bulge.(Fig-1)Incision was made on the bulge to remove the fetus and placenta completely (Fig-2) followed by excision of redundant cornua. Dead space was obliterated and hemostasis in muscular region was achieved by interrupted figure of eight sutures and the serosa with stitched using base ballsuture.(Fig-3). Duration of Surgery was one hour and blood loss was 150 mL.Post operative period was uneventful and patient was discharged on post op day3.

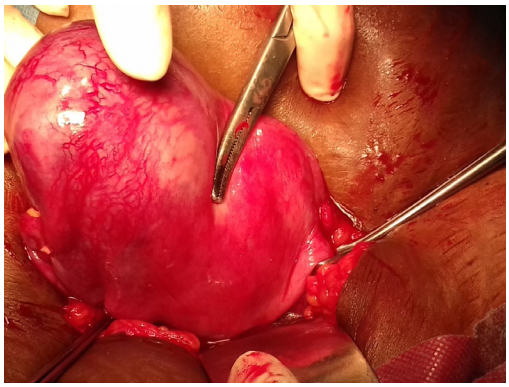


Fig-1 Showing cornual pregnancy seen as a bulge lateral to round ligament held by babcock on both sides

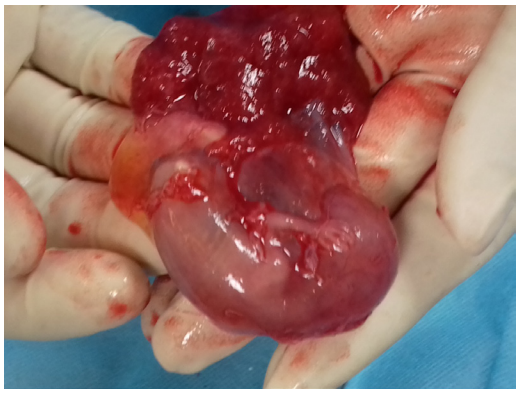


Fig-2 Showing placenta and fetus excised from cornual pregnancy

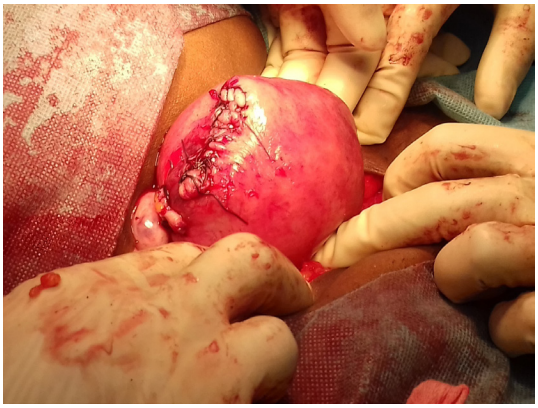


Fig-3 Showing final result after achieving hemostasis

DISCUSSION

Cornual pregnancy is a rare form of ectopic pregnancy, accounting for up to 2% to 4% of all ectopic pregnancies(commonest site for anatypical ectopic pregnancy). The incidence is thought to be rising[3], with a mortality range of 2.0% to 2.5%[4]. The term cornual pregnancy has also been also used for pregnancies in the interstitial portion of fallopian tube(interstitial pregnancy, IP) and those in the lateral angle of uterine cavity(angular pregnancy,AP)[5,6]. The true interstitial pregnancy is defined by its location lateral to the round ligament in the uterotubal junction, whilst in rudimentary horn pregnancy round ligament is lateral to the bulge.[7]

The difference between an interstitial ectopic pregnancy and an angular pregnancy can be assessed during laparoscopy. The laparoscopic appearance of the bulge of an interstitial pregnancy is lateral to the round ligament similar to the present case , whereas the bulge of an angular pregnancy is medial to the round ligament and displaces the round ligament laterally[8]Cornual pregnancy is defined as the implantation of the trophoblast in the cornual part of the uterus.

The diagnosis of a cornual pregnancy in early gestation is difficult. Uterine bleeding, pelvic pain and rupture occurs later in cornual pregnancy when compared to an ectopic pregnancy located in the fallopian tube. The gestational sac in the uterine cavity if in a very lateral position, can be shown using transvaginal ultrasonography. Magnetic resonance imaging (MRI) and 3D USG can also be used to confirm a suspected cornual pregnancy.

Hemorrhage is much more in rupture in this uterine area because this area is well supplied by the Sampson artery which is connected to both the uterine and the ovarian arteries resulting in hemoperitoneumupto 2-3 litres. . The typical rupture of these ectopic pregnancies within the myometrium usually occurs later than 9 weeks and as late as 20 weeks. Hence,ruptured cornual pregnancies may cause life threatening severe bleeding. Sometimes this bleeding can be so excessive, leaving hysterectomy as the only option.

Ectopic pregnancy is known to be associated with a suboptimal increase or plateau of serum β hCG. With a detection rate of 97% and a specificity of 77%, serial

serum β hCG is useful to establish the diagnosis of ectopic pregnancy in association of the sonographic findings. In cornual ectopics, there are reports of doubling of serum β hCG, therefore the value of performing serial serum β hCG is doubtful and the results should be interpreted with caution.[9]

Transvaginal ultrasound scan is the corner stone for the early diagnosis of cornual ectopic. The ultrasonographic diagnosis of cornual ectopic is challenging and needs an expert .Newer modality like 3D ultrasonography has shown to be more accurate and diagnostic criteria using it includes: a) Absence of gestational sac in uterine cavity b) Gestational sac seen independently and less than 1cm from the lateral edge of the uterine cavity c) Thin layer of myometrium around the gestational sac d) Interstitial line sign (echogenic line extending to the gestational sac). During early cornual gestation, the sac is located in the lateral part of the uterus but later on, the gestational sac may be located above the uterine fundus. Thus, cornual pregnancy detected late may appear as an eccentric uterine pregnancy.[10]

Laparoscopy is an essential diagnostic tool as well as a possible treatment route for suspected cornual ectopic pregnancy . However, in cornual pregnancy, difficulty arises with small ectopic masses that can be easily missed like in current case scenario.Physicians should consider cornual ectopic pregnancy when attempts at induced second trimester abortion do not succeed .

Cornual pregnancy can also be managed medically with systemic methotrexate. The modes for administration of methotrexate (dose: 1mg/ m2) include through laparoscope and transvaginally through ultrasound guidance. However, methotrexate may lead to severe hemorrhage and uterine rupture. Uterine artery embolization in addition to methotrexate is another effective mode for medical management of cornual pregnancy.

Surgical management can be laparotomy, laparoscopy or hysteroscopy. Surgical management of cornual pregnancy includes cornual resection, cornuostomy, and hysterectomy. The size of the cornual gestation can be used to determine which laparoscopic technique should be applied.If the ectopic pregnancy is small, solid and nonviable, it can be managed expectantly because of the decrease risk of bleeding and rupture. In the event the interstitial pregnancy is medium-sized (<5 cm), conservative management with methotrexate is often used with caution. Unfortunately, methotrexate treatment has been associated with a 9–65% failure rate . For a large interstitial ectopic pregnancy (>5 cm in size) like our case , surgery should be the first treatment of choice due to the increased risk of rupture.

When gestation is less than 3.5cm, salpingostomy may be performed. However, cornual resection is preferred for gestationsac of more than 4cm. The cornual gestation which is most often surgically excised, require the removal of a portion of myometrium as well. A minimum amount of tissue must be excised in order to prevent possible uterine rupture in the future.

Laparoscopic management frequently has been used. However, laparotomy is also used and rarely hysteroscopy is used. For the past 20 years, surgical management by laparotomy with cornual resection or cornuostomy has been a method of choice.Additionally, many cases of laparoscopic cornuostomy have been undertaken[11-13]

Haemostatic techniques are limited to vasopressin, bipolarelectrocauteryorsuturing,singlyorincombination. Although there is no consensus on the best method from among vasopressin, purse-string suture, square suture, encircling suture,endo-loop(R), electrocoagulation, occlusion of ascending branch of uterine artery, fibrin glue, automatic stapler, uterine artery ligation ordouble-impact devascularization.[14]Unrupturedcornual pregnancy has been managed by placing an Endoloop® (Ethicon Endosurgery, Edinburgh, UK) around the cornue, and evacuating the pregnancy using unipolar current and blunt dissection.

Cucinella et al. concluded that laparoscopic injection of vasopressin was the preferred approach .[15]

With regard future fertility, cornual ectopic is associated with higher risk of recurrent ectopic compared with other types of ectopic pregnancy . If the uterus is conserved, there is an increased incidence of uterine rupture at the surgical site in future pregnancies in the 2nd and 3rd trimesters especially in the cases where the sac excision leads to defective myometrium &/or the uterine cavity has been opened. However, the data about the absolute increase in such risk is still conflicting.

With regard the mode of delivery in subsequent pregnancy, caesarean section is recommended by many

clinicians however, no evidence yet available to evaluate the safety of caesarean section versus vaginal delivery after cornual ectopic treatment

CONCLUSION

The early diagnosis of cornual pregnancy still remains a challenge. We should be alert to prenatal ultrasound diagnosis in a asymptomatic women when gestational sac is seen within 1cm of empty uterine cavity with the intention of making an earlier diagnosis, thereby resulting in decreased maternal morbidity and mortality.

Source of Funding –Self

Ethical Clearance – Not required

Conflict of Interest -Nil

REFERENCES

1) Singh N,Tripathi R, Mala Y, et al. Diagnostic dilemma in corneal pregnancy-3 D Ultrasonography may aid !!.J ClinDiagn Res 2015;9:12-3.

2) Moawad, Nash S.; Mahajan, Sangeeta T.; Moniz, Michelle H.; Taylor, Sarah E.; Hurd, William W. (January 2010). "Current diagnosis and treatment of interstitial pregnancy". American Journal of Obstetrics & Gynecology. 202 (1): 15–29. doi:10.1016/j.ajog.2009.07.054. PMID 20096253. PII S0002-9378(09)00840-0.

3. Interstitial pregnancy. Am. J. Obstet. Gynecol. 2010;202 (1): 15-29. doi:10.1016/j.ajog.2009.07.054 - Pubmed citation

4) Shen L, Fu J, Huang W, Zhu H, Wang Q, Yang S, et al.Interventions for non-tubal ectopic pregnancy. CochraneDatabase of Systematic Reviews 2014, Issue 7. Art. No.:CD011174.

5) Rizk B, Holliday CP, Abuzeid M. Challenges in the diagnosis and management of interstitial and cornual ectopic pregnancies. Middle East FertilSoc J. 2013;18:235–40.

6). Arleo EK, DeFilippis EM. Cornual, interstitial and angular pregnancies: clarifying the terms and a review of the literature. Clin Imaging. 2014;38:763–70

7) Siow A, Ng S. Laparoscopic management of 4 cases of recurrent cornual ectopic pregnancy and review of literature. J Minim Invasive Gynecol. 2011;18:296–302.[PubMed]

8) D.L. FylstraEctopic pregnancy not within the (distal) fallopian tube: etiology, diagnosis, and treatment Am J ObstetGynecol, 206 (4) (2012), pp. 289-299

9) Abraham D, &SilkowskiC .(2010). Emergency Medicine Sonography 1st ed, 264-274 Api M, &Api O.(2010). Laparoscopic cornuotomy in the management of an advanced interstitial ectopic pregnancy: a case report. Gynecol Endocrinol.;26(3):208–212

10). B Rizk, M Abuzeid, C Rizk, S Owens, J LaFleur, et al. (2010) Ectopic Pregnancy. In: B Rizk (Ed.), Ultrasound in reproductive medicine and infertility, Chapter 31, Cambridge University Press, Cambridge, USA, pp. 259-270

11) C.F. Su, H.J. Tsai, G.D. Chen, Y.T. Shih, M.S. LeeUterine rupture at scar of prior laparoscopic cornuostomy after vaginal delivery of a full-term healthy infant J ObstetGynaecol Res, 34 (4 Pt 2) (2008), pp. 688-691

12) H. Warda, H. Salem, M. AbuzeidA simplified technique of laparoscopy cornuostomy for interstitial ectopic pregnancy J Minim Invasive Gynecol, 18 (6) (2011) [Suppl Page S114]

13) Warda H, Abuzeid M. Laparoscopic Cornuostomy for a Large Interstitial Ectopic pregnancy. In: The 41stAAGL global congress on MIGS. Las Vegas, Nevada; November 5–9, 2012 [USA Video presentation November 9, 2012].

14). Afifi Y, Mahmud A, Fatma A. Hemostatic techniques for laparoscopic management of cornual pregnancy: double-impactdevascularisation technique. J Minim Invasive Gynecol. 2016;23:274–80.

15). Cucinella G, Calagna G, Rotolo S, Granese R, Saitta S, Tonni G, Perino A. Interstitial pregnancy: a 'road map' of surgical treatment based on a systematic review of the literature. GynecolObstet Invest. 2014;78:141–9.

Call for Papers/Article Submission

International Journal of Contemporary Surgery is a double blind peer reviewed international journal

The following guidelines should be noted:

- The article must be submitted by e-mail only. Hard copy not needed. Send article as attachment in e-mail.
- The article should be accompanied by a declaration from all authors that it is an original work and has not been sent to any other journal for publication.
- As a policy matter, journal encourages articles regarding new concepts and new information.
- Article should have a Title
- Names of authors
- Your Affiliation (designations with college address), e-mail id.
- Abstract
- Key words
- Introduction or back ground
- Material and Methods
- Findings
- Discussion
- Conclusion
- Ethical Clearance
- Interest of Conflict
- References in Vancouver style.
- Please quote references in text by superscripting
- Word limit 2500-3000 words, MSWORD Format, single file

All articles should be sent to : editor.ijocs@gmail.com

Our Contact Info:

Institute of Medico-Legal Publications

Logix Office Tower, Unit No. 1704, Logix City Centre Mall
Sector- 32, Noida - 201 301 (Uttar Pradesh)
Ph. +91 120 429 4015, Mob: 09971888542,
Email: editor.ijocs@gmail.com, Website: www.ijocs.in

International Journal of Contemporary Surgery

Institute of Medico-Legal Publications

Logix Office Tower, Unit No. 1704, Logix City Centre Mall
Sector- 32, Noida - 201 301 (Uttar Pradesh)
Mob: 09971888542, Email: editor.ijocs@gmail.com,
Website: www.ijocs.in

CALL FOR SUBSCRIPTIONS

ISSN 2320-9615 (Print Version) ISSN 2321-1024 (Online Version) Frequency Half yearly **International Journal of Contemporary Surgery** is a double blind peer reviewed international journal which has commenced its publication from January 2013. The journal is half yearly in frequency. The journal covers all aspects of medical practice. The journal has been assigned ISSN 2320-9623 (Print Version) and ISSN 2321-1032 (Online Version). The journal is indexed in many international data bases.

Journal Title	Print Only
International Journal of Contemporary Surgery	**INR 9000**

NOTE FOR SUBSCRIBERS

- Advance payment required by cheque/demand draft in the name of **"Institute of Medico-Legal Publications"** payable at Noida, Uttar Pradesh.
- Cancellation not allowed except for duplicate payment.
- Claim must be made within six months from issue date.
- A free copy can be forwarded on request.

Bank Details

Name of account :	**Institute of Medico-Legal Publications Pvt Ltd**
Bank:	**HDFC Bank**
Branch	Sector-50, Noida-201 301
Account number:	**09307630000146**
Type of Account:	Current Account
MICR Code:	110240113
RTGS/NEFT/IFSC Code:	HDFC0000728

Please quote reference number.

Send all payment to :

Institute of Medico-Legal Publications

Logix Office Tower, Unit No. 1704, Logix City Centre Mall, Sector- 32, Noida - 201 301 (Uttar Pradesh)
Mob: 09971888542, Email: editor.ijocs@gmail.com, Website: www.ijocs.in

Published, Printed and Owned : Dr. R.K. Sharma
Printed : Printpack Electrostat G-2, Eros Apartment, 56, Nehru Place, New Delhi-110019
Published at: Institute of Medico Legal Publications Pvt. Ltd., Logix Office Tower, Unit No. 1704, Logix City Centre Mall Sector- 32, Noida - 201 301 (Uttar Pradesh) Editor : Dr. R.K. Sharma, Mobile: + 91 9971888542, Ph. No: +91 120- 429 4015