

# The Surgical Outcome of Distal Pancreatectomy for Distal Pancreatic Tumors

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## Abstract

Pancreatic cancer is still associated with poor prognosis and remains a therapeutic challenge and the fourth leading cause of cancer related mortality. Overall long-term survival is about 1–5%, and in only 10–20% of pancreatic cancer patients is potentially curative surgery possible, increasing five-year survival rates to approximately 20–25%.

Thirty two patients' data files were reviewed; those who underwent left sided pancreatectomy for tumor lesions in their pancreatic body or tail in Gastroenterology and Hepatology Hospital & Baghdad Teaching Hospital ,Baghdad, Iraq. for the period

from December 2013 up to April 2018. demographics , dates of presentation , ad-mission , presentation features , biochemical investigations , radiological findings , operative findings,histological reports of excised samples and clinical notes regarding postoperative hospitalization period with the postoperative biochemical and radiological findings were analyzed.

The result shows most of the resected lesions were benign premalignant tumors with female preponderance and lower mean age of presentation than found in other studies. No significant complications were documented and neither mortality nor recurrence were registered with thrombocytosis was the complication in one case . Successful celiac axis resection done in one case . Most of the cases operated in the 2015 with the non specific abdominal pain being the presenting symptom in more than 30 % of cases . Tumor site was in the tail in about 60 %, and the most common surgical option was distal pancreatectomy with splenectomy . Mucinous cystic neoplasia was the most common tissue diagnosis . Hospital stay was around 5 days in about 33 % of cases .

**Key Words:** *Pancreatic cancer, Gastroenterology, thrombocytosis, Tumor site.*

## Introduction

Tumors of the body and tail of the pancreas comprise 33% of the pancreatic neoplasms. They have consistently been related with a pauper prognosis because of the late presentation, and subsequently, progress phase of the ailment. Be that as it may ,this pattern is continuously on the decay with the attention to the presence of these lesions, better radiologic imaging modalities for

analysis, and the more forceful treatment techniques received in these patients (<sup>1</sup>). Acinar neoplasms from pancreatic acini are uncommon , the ductal component of the pancreas is responsible for most of the neoplasms, with the invasive ductal adenocarcinoma as the most common neoplasm of the pancreas(<sup>2</sup>). Pancreatic ductal adenocarcinoma accounts for 6% of all cancers in the United States. It is the fourth leading cause of cancer death in men, after lung, prostate, and colorectal cancer, and the fifth leading cause of cancer death in women, following lung, breast, colorectal, and ovarian cancer (<sup>2</sup>). More than 42,000 incident cases of pancreas cancer are predicted annually, with about 35,240 deaths (<sup>3</sup>). In the United States, the peak incidence of pancreas

cancer occurs in the seventh and eighth decades of life (3). Most pancreatic adenocarcinomas are solid, ill defined masses. They have a remarkable tendency for fast dissemination and insidious permeation. Ordinarily, it spreads in the abdomen in a multinodular design (intraabdominalcarcinomatosis) or is as of now broadly widely metastatic by the time the primary tumor grows to 5 to 6 cm in size. This feature is such characteristic that a larger solitary pancreatic mass is unlikely to be ductal adenocarcinoma (2).

### Patients & Method

The data taken from the Gastroenterology and Hepatology Hospital & Baghdad Teaching Hospital registration unit & theatre unit were reviewed regarding patients who had underwent surgery for tumors involving pancreatic body or tail for the period from December 2013 upto April 2018, which included 32 patients, 4 of them were excluded because of missing data from

one of the data storage units The available informations were checked for demographics, dates of presentation, admission, presentation features, biochemical investigations, radiological findings, operative findings, histological reports of excised samples and clinical notes regarding postoperative hospitalization period with the postoperative biochemical and radiological findings. The data were studied by the statistical package for social sciencesprogram (SPSS).

### Results

#### Study period

The data of patients with previous left pancreatic resection for distal pancreatic tumors retrospectively were collected For the period from April 2013 till April 2018 and the results showed 32 patients were explored, 6 of them with incomplete data who were excluded from the study, As shown in the figure (1).

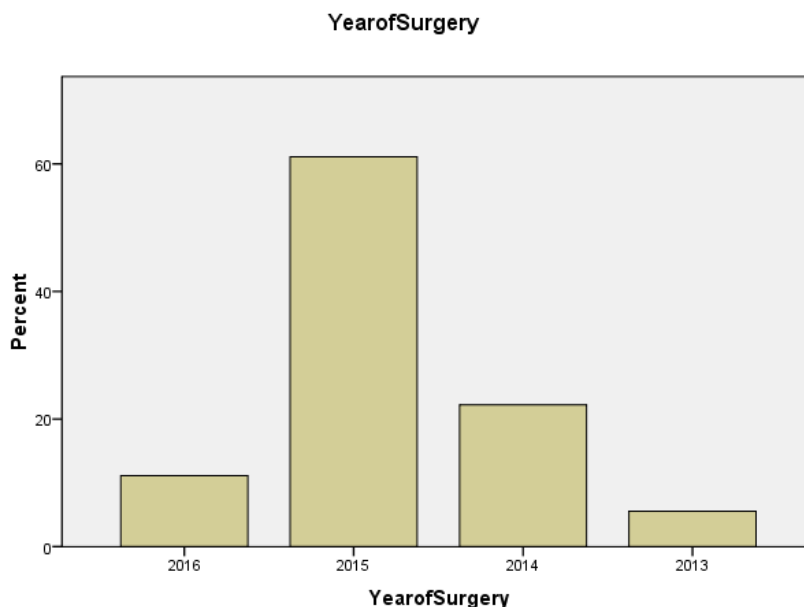


Fig. (1): The annual resection rate for pancreatic body masses.

#### Demographic data

The demographic study shown the median age was 37.5 year and the mean age was 39 years. The maximum age was 57 years and the minimum was 17 years. And females were 66.7% and male were 33.3%.

#### Diagnosis

The most common symptom was abdominal pain that had been recognized in about 66.7% of the cases, followed by mass in 16.7% of the cases. (Figure 2 shows the presenting sympto

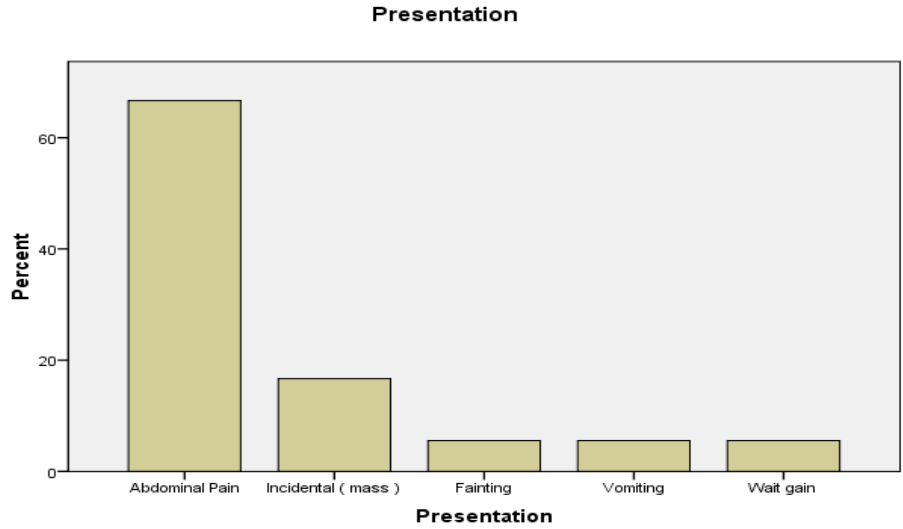


Fig. (2): The presenting symptoms.

**Surgical option**

There are many types of surgery, but the most frequently practiced surgery was distal pancreatectomy with concomitant splenectomy in the rate of 77.8%, followed by distal pancreatectomy with splenectomy and other organ manipulation. (as shown in figure 3).

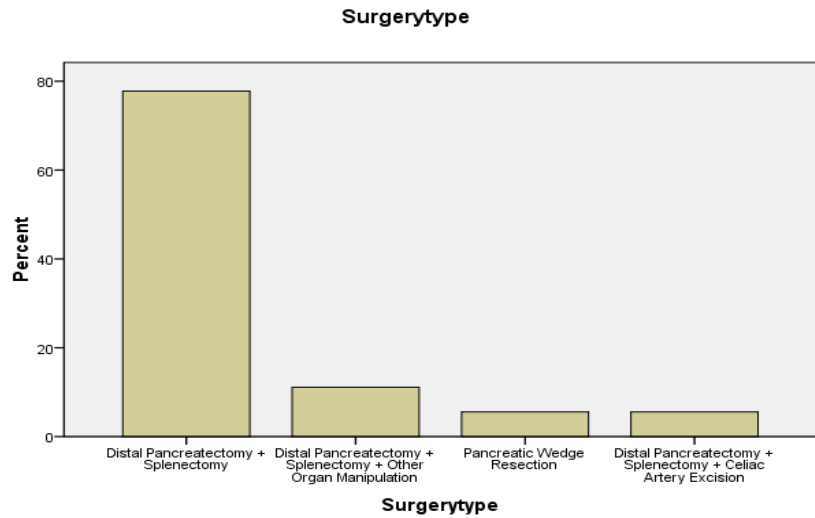


Figure (3) :Types of surgery used for resection.

**Tissue diagnosis**

According to the results of diagnosis the resected tissues, pancreatic cystic lesions percentage around 49.7 %, and 77.77 % were benign (adenomas without dysplasia ). while mucinous cystadenoma was encountered as the most common diagnosis with the frequency of 33.3% (figure 4).

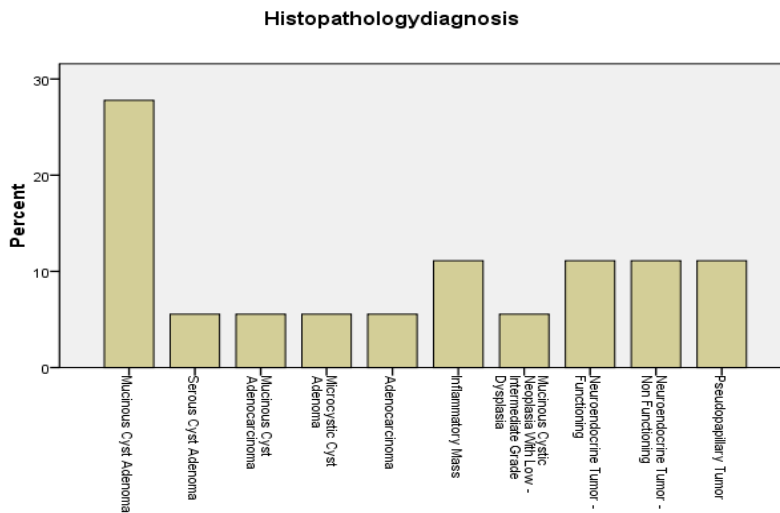


Figure (4): Tissue diagnoses of the resected masses.

### Complications

Regarding the postoperative complications’ rate which shown less than (30%), The group that managed without surgery by percutaneous drainage under local anesthesia whether by single or multiple attempts and with the use of injectable antibiotics with or without somatostatin inhibitors showed the highest frequency. ( see figure 5 ). One case was complicated by thrombocytosis and gastrointestinal bleeding which was managed conservatively.

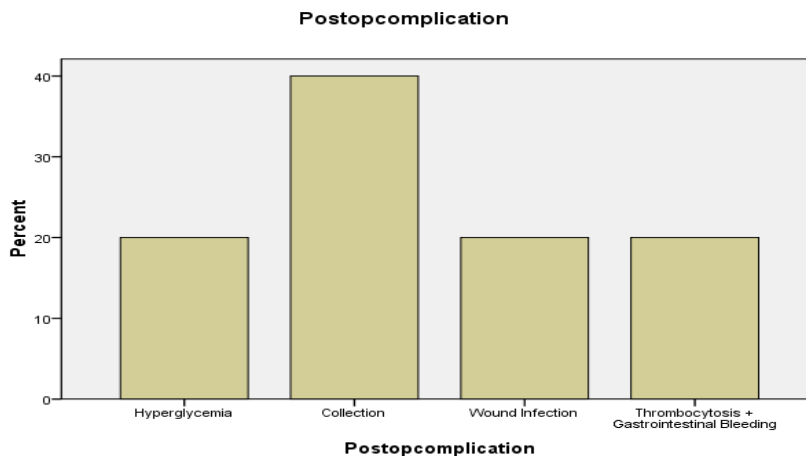


Figure (5): Postoperative complication .

### Discussion

Perioperative morbidity and mortality rates are usually done after Pancreatic (4) and that’s why there is familiar idea that pancreatic resection for pancreatic cancer be abandoned. Many centers have developed recently and that’s had led to significant improvement in the short term outcomes after pancreaticoduodenectomy, these results were also extended to distal pancreatic resection

as evidenced by Fernandez-del Castillo et al (5). The data collected in this study showed zero percent of mortality and that’s could be explained by younger – middle aged population that was involved and also due to the less aggressively surgical options those were applied for carefully selected individual patients.

The figure (1) represents the increment of the annual rate of pancreatic surgical resection tumor we can noticed that the rate in 2015 year increased in 2-fold over that of 2014 (as mentioned previously in methodology this study did not cover the data of whole months of the years 2013 and 2018).

After calculating the median age of patients and appeared around 35 years and that's age lower than that found in another study held by Fabio Madureira et al (6) which was 57 years. And this controversy result can be explained by the fact that 34.1% of the cases are mucinous cystic adenomas and neoplasia of low - intermediate grade dysplasia which are commonly seen in perimenopausal women (7), which is the same cause for the female preponderance .

There were two recognizable periods by which the patients highly present to our center, the first in the 3 weeks' time and the second in the two years' time. The second period was affected by one case of metastatic tumor ( carcinoma peritonei ) who was already clinically diagnosed to have an advanced pancreatic tumor.

As excision thought to be the only chance of cure for the aggressive pancreatic cancer, and the survival highly improved by changing the operation to an extended distal pancreatectomy (DP) including resection of regional lymph nodes, retroperitoneal structures, surrounding vessels, and adjacent organs (stomach, spleen, colon, adrenal gland) cited by Matthias Glanemann et al (8).

This study has shown pancreatic cystic neoplasia as the most familiar diagnosis and this different to what was found by other reviews like in Keith D. Lillemoe et al (9) where the lesions due to chronic pancreatitis were the most common diagnosis representing about 24 % of the cases.

While postoperative complications rates were similar to or lower than those rates of Keith D. Lillemoe et al (9). 31% developed complications, in decreasing order, new onset insulin dependent diabetes, fistula, intraabdominal abscess, small bowel obstruction and hemorrhage , and this complication (the fistula) can be explained by the relatively high percent of distal pancreatectomies for chronic pancreatitis' associated lesions

Finally the length of postoperative hospital stay (with the cost that it carries) was generally lower in our review as compared with the results from Traian Dumitrascu (10)

where the mean was 9 days and the range from 6-45 days, while in Keith D. Lillemoe (9) the mean was 14 days, reflecting the time the complications needed to resolve within it .

## Conclusion

Pancreatic tumors still representing a difficult medical problem for doctors in diagnosis , confirmation and treatment , but since distal pancreatectomy is relatively an easy surgery with an acceptable outcomes , the surgical oncological principles that limit the applicability of resection options should be over-come by both the detection of tumors at an earlier stages and the proper selection of the suitable surgical option for each individual case. Our results showed that the conventionally used procedure (distal pancreatectomy) is safe with an acceptable complications rate when used for benign or premalignant tumors with one modification need to be addressed that is spleen preservation. For malignant tumors this technique alone or with other modifications like (anterior or posterior) RAMPS or modified Appleby procedures may need to be part of the available options for the treatment of distal pancreatic malignancies.

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**Ethical Clearance:** This study is ethically approved by the Institutional ethical Committee.

## References

- 1 - Savio D, Sinclair L, Ijaz UZ, Parajka J, Reischer GH, Stadler P, Blaschke AP, Blöschl G, Mach RL, Kirschner AK, Farnleitner AH. Bacterial diversity along a 2600 km river continuum. *Environmental microbiology*. 2015 Dec;17(12):4994-5007.
- 2- Jarnagin WR, editor. *Blumgart's Surgery of the Liver, Pancreas and Biliary Tract E-Book*. Elsevier Health Sciences; 2016 Oct 10.
- 3- Jarnagin WR, editor. *Blumgart's Surgery of the Liver, Pancreas and Biliary Tract E-Book*. Elsevier Health Sciences; 2016 Oct 10.
- 4- Gudjonsson B. Cancer of the pancreas: 50 years of surgery. *Cancer*. 1987 Nov 1;60(9):2284-303.
- 5- Fernández-del Castillo C, Rattner DW, Warshaw AL. Standards for pancreatic resection in the 1990s. *Archives of Surgery*. 1995 Mar 1;130(3):295-300.

- 6- Madureira FA, Grès P, Vasques RR, Levard H, Randone B, Gayet B. Predictive factors of morbidity in distal pancreatic resections. *Revista do Colégio Brasileiro de Cirurgiões*. 2012 Dec;39(6):496-501.
- 7- Chalhoub N, Mourad C, Mouaccadie L, Khoury EE. Serous Cystadenoma of the Pancreas: Radio-Anatomical Correlation. *Int J Radiol Radiat Ther*. 2017;4(1):00087.
- 8- Glanemann M, Shi B, Liang F, Sun XG, Bahra M, Jacob D, Neumann U, Neuhaus P. Surgical strategies for treatment of malignant pancreatic tumors: extended, standard or local surgery?. *World journal of surgical oncology*. 2008 Dec;6(1):123.
- 9- Lillemoe KD, Kaushal S, Cameron JL, Sohn TA, Pitt HA, Yeo CJ. Distal pancreatectomy: indications and outcomes in 235 patients. *Annals of surgery*. 1999 May;229(5):693.
- 10- Dumitrascu T, Scarlat A, Ionescu M, Popescu I. Central pancreatectomy versus spleen-preserving distal pancreatectomy: a comparative analysis of early and late postoperative outcomes. *Digestive surgery*. 2012;29(5):400-7.