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Botulinum Toxin Vs Lateral Internal Sphicterotomy for Anal Fissures

Ameer Salah Tawfeeq

College of Medicine/University of Babylon/Iraq

Abstract

A prospective study of 60 patients with anal fissures that aims to compare between two different types of treatment (Botulinum toxin A injection BTA and lateral internal sphincterotomy LIS) regarding pain-relief, healing rates and side effects and to establish a systematic method to be followed in the treatment.

Keywords: *Anal fissure, Lateral sphincterotomy, Botulinum toxin.*

Introduction

Anal fissure is a canoe –shaped longitudinal tear that is most commonly found over the posterior wall of the anal canal below the dentate line. Anal fissures that do not heal in six weeks are considered chronic[1]. The exact etiology of anal fissures is unknown but there is clear association with hyper-tonicity of the anal sphincter and the condition is triggered by trauma to the anal canal. Previously it was thought to be related to constipation but this is evident in only 75% of anal fissures, and in fact, diarrhea may be a cause [2]. Sexual abuse[3] and water stream from bidet- toilettes[4] may be a cause of anterior anal fissures. Secondary fissures due to Crohn's disease, Tb, herpes and HIV are usually found in atypical locations [5].

Over the years, multiple methods have been tried for the treatment of anal fissures. All of which aim to reduce the anal sphincter tone which consequently leads to healing of the fissure. Conservative measures eg. Stool softeners, high fiber diet , sitz baths are worth trying in the acute phase but are usually not beneficial for the chronic fissures.

Criteria to consider that a fissure is chronic are:

1. Fissures not responding to the conservative measures.
2. Sentinel pile.
3. Hypertrophied anal papilla.
4. Induration of the edge.
5. Exposed internal sphincter.

Method

This study had been performed in the Outpatient Department and The Operation Theater of Al Hilla Teaching Hospital between January 2014 and August 2018. Proper informed consent had been taken from the involved patients regarding both procedures and the study method was fully -explained.

Sixty patients with chronic anal fissures(CAF) had been studied prospectively. Thirty of them were treated by Botulinum toxin A (BTA) injection and another 30 by lateral internal sphincterotomy (LIS).

Exclusion criteria were:

1. Recurrence following previous surgery.
2. Multiple fissures.
3. Pregnant women.
4. Secondary fissures eg. Crohn's disease and Tb.

The two groups were matched regarding gender distribution, age and severity of the symptoms (Table 1).

Corresponding author:
Ameer Salah Tawfeeq
College of Medicine/University of Babylon/Iraq
E-mail: ameersalah47@yahoo.com

Table 1: Male: female distribution and mean age

Groups	Females	Males	Mean age
BTA	18(60%)	12(40%)	33.7
LIS	17(56%)	13(43%)	32.6

LIS was performed under spinal and sometimes general anesthesia in lithotomy position. The internal sphincter was divided using cautery while the external sphincter was preserved.

BTA was given to the patients in the outpatient department in the left lateral position. BTA was diluted in saline to a concentration of 50 units/ ml. A 27 gauge needle syringe was used to introduce 10 units of BTA on each side of the midline anteriorly.

Patients of the two groups were reviewed after 2, 6 and 12 weeks regarding side effects, pain relief and fissure healing.

Results

All of the treated fissures were posterior in location.

Pain relief was achieved in 23, 24 and 24 after two, six, and twelve weeks respectively in the BTA group (Table 2) while pain relief happened in 21, 30 and 30 of the LIS group after two, 6six and twelve weeks respectively (Table 3) .

Healing was achieved in 15, 23 and 26 after two, six, and twelve weeks respectively in the BTA group (Table 2) while healing happened in 16, 22 and 29 of the LIS group after two, six and twelve weeks respectively (Table 3) .

No side effects were detected in the BTA group while incontinence to flatus occurred in 4(13.3%) of the LIS and headache happened in 2(6.6%) following spinal anesthesia and infection happened in 1(3.3%) of the LIS group.

Table 2: Pain relief and healing following BTA

Time	Pain relief	Healing
2 weeks	23(77%)	15(50%)
6 weeks	24(80%)	23(76.7%)
12 weeks	26(86.6%)	24(80%)

Table 3: Pain relief and healing following LIS

Time	Pain relief	Healing
2 weeks	21(70%)	16(53%)
6 weeks	30(100%)	22(73.3%)
12 weeks	30(100%)	29(96.6%)

Discussion

After 3 months of BTA injection the pain relief and healing rate were 86.6% and 80% respectively which is significantly- less than the LIS group which was 100% and 96.6% respectively. Many studies show healing rate of 100% following LIS [6,7,8]. No side effects have been reported following BTA while flatus incontinence occurred in 13.3% and headache in 6.6% of the LIS group. A lot of studies report a wide range of side effects following BTA injection including flatus incontinence, hematoma, flu-like illness and epidydimitis of which none has been encountered in the presented study [9, 10]. When using BTA, the dose, distance from the anal verge and the angle of injection are of paramount importance to achieve the healing.

In view of the above and due to the potentially-significant complications of LIS, it is highly-recommended to start with BTA as a 1st line treatment and shift to LIS if healing has not been achieved. If the patient is ready to accept the risk of incontinence with LIS and wants the better healing rate as a priority, then he should be offered the operation.

Glyceryl trinitrate ointment is another form of chemical sphincterotomy but it causes headache and lacks uniformity some parts being sub-potent and do not achieve healing while others supra-potent and cause hypotension[11].

Ten units of BTA were injected in the presented study. Some studies show less healing rate with BTA (93.3%) and this might be attributed to the lower dose[12].

Another important consideration is the cost as while the cost of BTA was about 60$, the cost of surgery is certainly more but depends on whether it was performed in a government or a private hospital and in average was 300$. Also the patients had to leave their work during the recovery time for an average of one week. There is also the waiting list time which would be frustrating for

the patient.

Before starting any sphincterotomy, whether chemical or surgical, conservative measures are worth trying as they can achieve healing in 70% of the cases [13].

Follow up of the patients in the presented study was considerably- short (12 weeks). A recurrence rate of about (0-8%) 6-24 months after BTA injection has been reported [14,15].

Ethical Clearance: The research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq.

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