Is Injection of Botulinum Toxin a Treatment of Choice for Chronic Anal Fissure?

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ABSTRACT

Objective — *To evaluate the effectiveness of injection of botulinum toxin as first line treatment for idiopathic chronic anal fissure.*

Study design — *Descriptive case series.*

Place & Duration of study — *Private clinics from January 2010 – December 2011.*

Methodology — *Twenty-nine patients with posterior midline chronic anal fissure, with the age ranging from 25-60 year, were inducted in this study. They did not suffer from any other anal or systemic disease. Twenty units of botulinum toxin was diluted in 1ml of normal saline. An insulin syringe of 25G needle was used for injection keeping patients in left lateral position. Anal canal was sprayed for 30 second with 10% xylocaine spray. The filled toxin was injected into the two sides of the fissure and at its base. Patients were examined after one week and then every 2 weeks till the fissure heal (maximum duration 12 weeks). They were also asked to keep record of pain during defecation and bleeding per rectum.*

Results — *Pain during defecation disappeared by the third day in all the patients. Bleeding per rectum stopped by first week in 14 (48.2%) patients and by third week in others. By 10th week, 25 (86.2%) patients had their fissure healed. The remaining did not heal till 12th weeks.*

Conclusions — *A healing rate of 86.2% within 10 weeks was achieved which is much better than other non-operative modalities.*

Key words — *Chronic Anal Fissure, Injection Botulinum toxin, internal anal sphincter.*

INTRODUCTION:

Anal fissure is defined as a longitudinal tear in the lining of the anal canal distal to the dentate line.[1,2] The tear, being present in the squamous part of the epithelium, causes considerable pain, fresh bleeding while defecation and impairment in quality of life. [3] It may be acute with superficial tear which heals either spontaneously or with conservative treatment.[2] When the acute fissure fails to heal with conservative treatment by 04-06 weeks then it is labeled as chronic anal fissure.[1,2,4] It appears as a elliptical shaped ulcer, 90% of time in the posterior mild line with indurated margins. Base is either made of the fibrotic scar or the lower part of the internal sphincter, which is also accompanied by a skin tag distally and a hypertrophic papillae anteriorly.[5]

The pathogenesis of the chronic anal fissure is not completely understood. Multiple traumas to the epithelium of the anal canal, when a hard fecal mass passes through the recto-anal junction coupled with relative ischemia of the posterior anal tissue as demonstrated by the doppler studies and hypertonia of the internal sphincter muscle may be the possible causes of acute anal fissure converting to chronic anal fissure.[5,6] Thus decreasing the hypertonia of the internal sphincter muscle of anus is the objective of both the surgical and medical treatment.[7]

The lateral internal sphincterotomy is the most commonly performed surgery with the healing rate of upto 95-97%.[3] Complications especially fecal incontinence is reported up to 17% in dilatation and 4-7% in internal sphincterotomy.[8] Due to this

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unwanted complication, other alternatives which reduce the resting internal sphincter pressure, thus causing temporary medical sphincterotomy, with intact sphincter ring to avoid incontinence, such as topical application of nitric oxide, calcium channel blockers or injection botulinum toxin in internal sphincter are being used.[3,5]

Bothilium toxin is a lethal proteinous neurotoxin.[9] The toxin decreases the release of acetyl choline, thus blocking the neuromuscular transmission, hence causing paralysis of muscles which is reversible in nature. This study aimed to find out the efficiency of inection botulinum also known in idiopathic chronic anal fissure.[8]

METHODOLOGY:

A prospective study of two years with effect from January 2010 was carried out in which 29 cases of idiopathic chronic anal fissure were included. All of them were males; with age ranging from 25-60 year. All of them had a posterior midline chronic anal fissure. Patients with chronic fissure associated with hemorrhoids, fistulas, large skin tags or suffering from diseases like Chron's disease, tuberculosis etc were excluded.

These patients were injected with botulinum toxin A. A total dose of 20 units was diluted in one ml of isotonic saline and injected in internal sphincter while the patient lying in the left lateral position using insulin syringe with 25 G needle. The anus was sprayed for 30 seconds with 10% xylocanie prior to giving the injection. The toxin was injected on both sides of the fissure and also at its base. No sedation was given. Analgesic was given for pain if required. Patients were requested for follow up after one week and then every two weeks till the fissure healed. They were also asked to keep the record of the severity of pain and bleeding per rectum. Patients were also advised to avoid constipation by taking 2 tablespoon of Isphagol husk daily and plenty of water along with leafy vegetables in their diet.

RESULTS:

All the patients in the study had been treated for more than 06 weeks on conservative lines but their fissure did not heal. All the patients reported for follow up after one week. All patients reported that their pain had markedly reduced in severity on the first post injection day and were completely relieved of pain after 03 days. The bleeding per rectum during defecation had also stopped in 14 patients (48.2%). By their second visit after 03 weeks other patients (51.7%) were also free from bleeding per rectum during defecation.

By 10th week 25(86.2%) patients had their fissure healed. The remaining four patients were followed up for other two weeks (total of 12 weeks) but their fissure did not heal. The patients were then given the option of second dose of botulinum toxin or operation. Two patients refused the treatment, while two opted for operation. Thus the result of healing of chronic anal fissure in our study was 86.2% by 10 weeks. Transitory incontinence to flatus and feces was noted in 4 (13.8%) patients but they became continent by the time their fissure healed that is by 10th week. No other complication was noticed.

DISCUSSION:

Patients suffering from chronic anal fissure, a benign anal condition are not uncommon in surgical practice. The episodes of sharp pain during defecation, that continues as a dull anal pain for long at times accompanies with streak of blood, soiling of clothes with discharge or stool, and anal puritus are common complains. All these understandably have a negative impact on the quantity of the life of the patients for which they seek remedy.[3]

For long chronic anal fissure was considered to originate either from chronic phlebitis in anal crypts or from cryptitis with the formation of blunt internal fistula. But Schouter et al. have demonstrated that chronic anal fissure is an ischemic ulcer. Any constant increase in the anal pressure especially so hypertonia of the internal anal sphincter secondary to pain further compromise the blood supply to anal mucosa and will not allow the tear to heal.[6]

Therapeutic measures aims at reducing the hypertonia of chronic anal fissure. The medical sphincterotomy consists of the application of topical applications to anal canal of different chemical compounds.[9-12] They overcome the hypertonicity of the internal anal sphincter achieving upto 70% of healing rate without causing permanent damage to anal sphincter mechanism.[13] But their application 2-3 times per day and other complications like flushing of feaces, headaches, anal burning, postural hypotension and tachyphylaxis forces some of the patients to discontinue the treatment. Injection of botulinum toxin in internal anal sphincter is another type of medical sphincterotomy. This causes temporary paralysis of the hypertonic internal anal sphincter for upto 12-16 weeks and improves local blood perfusion. There are no side effects except for transitory incontinence and thus allowing the fissure to heal.

In this study the procedure was done as an outpatient procedure in the clinic. It was well tolerated by all

the patients. The procedure did not take more than 10 minutes and patients walked out of the clinic after injections. There was no need for any anesthesia. Most of our patients showed early improvement becoming pain free within 72 hours. The bleeding during defecation also stopped by 3rd week. This is in accordance with other studies.[3,13,14] The healing of chronic anal fissure in most of the patients (86.2%) noted by 10th week, which is slightly less than 96% reported in other study.[15]. No untoward side effects like sub cutaneous abscess, perianal thrombosis was seen in our study.

In present study incontinence to flatus and faces was the complaint in 4 (13.8%) patients which is slightly higher than 7-10% noted in other series.[3,13] This disappeared in all cases before the healing of the fissure. More over the age did not appear to affect the outcome in our study as in others[3]. None of the 25 patients with healed ulcer have yet reported back.

CONCLUSIONS:

Injection botulinum is treatment of choice in chronic anal fissure. It is a safe, well tolerated procedure, performed without anesthesia and is cost effective.

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