Beyond Beauty : Botulinum Toxin Use in Anal Fissure

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Abstract

Background: Chronic fissure in ano is a common distressing problem with high recurrence rates. Any treatment modality should be simple, effective and reversible with no permanent sequelae. Long term medical management with poor compliance or surgical therapy with risk of incontinence are both less than ideal. In this scenario chemical sphincterotomy using Botulinum toxin offers an alternative modality.

Methods: A total of 30 patients of chronic fissure in ano were treated with Botulinum toxin injection in the internal sphincter. **Result:** All patients had significant symptomatic relief with high rates of fissure healing. The simplicity of administration, lack of complications and cost effectiveness make it a useful alternative to the currently practiced approaches.

Conclusion: Botulinum toxin offers a simple outpatient treatment of chronic fissure in ano, which is safe, cost effective and reversible without significant complication. It has the potential of being used as a first line treatment in chronic fissure in ano.

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Key Words : Chronic fissure in ano; Botulinum toxin

Introduction

Chronic anal fissure is a common and distressing problem which occurs with equal frequency in men and women. The majority occur in the posterior midline below the dentate line extending up to the anal verge. Multiple or atypical locations are usually associated with chronic inflammatory bowel, venereal or immunodeficiency disease. The inciting event is usually the passage of hard stools with tear of the anal lining. Hypertonicity of the internal sphincter with consequent reduction in blood supply leads to relative ischemia and chronicity.

Treatment over the centuries has evolved from conservative therapy with stool softeners and high fiber diet to surgical modalities comprising internal sphincter disruption. Both approaches aim to break the vicious cycle of pain and fear of defecation with consequent hard stools leading to further tear and spasm. Concern over uncontrolled or permanent sphincter damage along with better pharmacologic understanding has led to re-evolution of conservative approaches. Pharmacological /chemical sphincterotomy aim to temporarily relax the sphincter till healing is complete. Topical glyceryl trinitrate, calcium channel blockers and botulinum toxin A are the commonly employed agents [1]. The present study clinically assesses the role of botulinum toxin A in the management of chronic anal fissure (CAF).

Material and Methods

All patients of CAF presenting to general surgery

outpatient department (OPD) were assessed. Patients with single or combined posterior or anterior fissure symptomatic for more than six weeks were included. Chronicity of fissure was confirmed by duration of symptoms, typical circumscribed split, induration of edges and exposure of internal sphincter fibers with fibrosis of base. Multiple fissures secondary to local, inflammatory bowel or venereal pathology as well as those with previous surgical interventions were excluded.

A questionnaire of history and patient record including telephonic contact numbers was maintained. The clinical details were noted and no special investigations or anal manometry was undertaken. All injections were administered on OPD basis 30 minutes after application of topical 2% lignocaine jelly. The patients are administered the drug in the left lateral or knee elbow position. Botulinum Toxin type A (Botox, Allergan, Irvine, Calif) in a 100 unit vial is diluted with 2.5 ml saline to a concentration of 40 units per ml. An insulin syringe is employed to inject Botox in a dose of 0.4 unit /kg body weight. The anal canal is gently dilated with a narrow blade bivalve speculum. This permits visualization of the fissure and palpation of the taut internal sphincter. The calculated dose is injected in three aliquots into the lower half /two thirds of the internal sphincter away from the fissure axis at 3/9'0 clock position (Fig. 1). The patients were advised to continue high roughage diet and topical use of 2% lignocaine jelly. Review was advised at one, three and six weeks with follow up thereafter at three and six months.

Results

A total of 30 patients were included in the study. There were 16 males and 14 females with an average age of 36.4

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Fig. 1 : Botox sphincterotomy in progress. Note the thin canoe shaped fissure at 12 'O' clock indicated by the left index finger. The injection is being administered with an insulin syringe at near 9 'O' clock position. The patient has prominent anal cushions

years (range 25 - 62 yrs) (Table 1). Of these, 18 patients gave history of habitual constipation while 11 specifically related the onset to the passage of hard stool on an occasion. One claimed the fissure onset to an episode of increased frequency of motions. Symptoms of pain during defecation and streaking of stools ranged in duration from 1.5 to 18 months (average five months). All patients had undertaken conservative treatments with varying relief. 14 patients gave history of earlier episodes of having fissures which had healed by conservative means. The fissures were anterior (2 cases), posterior (24 cases) and four patients had both anterior and posterior fissures. An average of 27 units of Botox was injected in each patient. One patient each complained of itching and discomfort post injection but none had any complications related to the procedure. Majority had significant relief of symptoms after the chemical sphincterotomy starting as early as 3rd day post injection. Eight patients had complete relief of pain by seventh day while six had less than 50% relief (Table 2). There was progressive improvement in symptoms during follow up with 22 patients becoming asymptomatic with healed fissures at three months. Six patients had healed fissures but complained of some discomfort while two continued to be symptomatic with persistence of fissure.

Discussion

Fissure in ano is a common and recurring ailment with distressing symptoms. The painful ulcer is considered to be ischemic in origin with hypertonicity and spasm of the internal sphincter contributing significantly to the pathology [2]. The onset is attributed to passage of hard stools which cause a tear over the

Table 1

Patient and clinical profile

Age (year)	36.4 (25-62)
Sex (M:F)	16:14
Duration (months)	5 (1.5-18)
Past history of fissure	14
Location	Post 24, Ant 2, Both 4
Botox dose (IU)	27 (22-30)

Table 2

Results: Symptomatic relief and fissure healing

Pain relief	<50%	50-75%	>75%	100%	Fissure healing
7 days	6 (20)	4 (13.3)	12 (40)	8 (26.7)	Nil
3 weeks	3 (10)	3 (10)	8 (26.7)	16 (53.4)	12 (40)
3 months	0 (0)	2 (6.7)	6 (20)	22 (73.3)	28 (93.3)

posterior anal verge with characteristic symptoms of pain during defecation and streaking of stools with blood. Fear and avoidance of motion leads to a vicious cycle of constipation and recurring anal injury. Surgical treatment has traditionally been aimed to reduce sphincter spasm by division of its fibers. Wide anal dilatation results in uncontrolled disruption of the sphincter with unacceptably high incidence of incontinence should be abandoned. Open sphincterotomy has yielded place to lateral internal sphincterotomy (LIS) where controlled division of its lower half to two third of the internal sphincter relieves the spasm. Though a simple and effective procedure with healing rates of 90-95% its drawback is the risk of permanent alteration of continence [3].

With multiple treatment options now available, there is an emerging trend of avoiding irreversible surgical options [4]. In a busy surgical OPD with long operation waiting lists, many patients of chronic fissure in ano are relegated to conservative treatment mode of high roughage diet, stool softeners, sitz bath and local anesthetic jellies. Chemical sphincterotomy using oral medications / local applications aims to relax the spasm till fissure healing is complete without risk of permanent sphincter injury. Calcium channel blockers have shown overall poor results despite prolonged use. The use of 0.2 % nitroglycerin ointment requires repeated applications over few weeks. It has common side effects of headache, local burning and development of tolerance. Treatment results are also average compared to surgical therapy [5]. Botulinum toxin offers the advantage of a single injection treatment as an OPD procedure. The drug has an early onset and prolonged paralytic effect lasting for 4-6 months. Pain relief is apparent within a few days and progressive relief is obtained till three months. Most fissures heal within 4-8 weeks.

Treatment with Botox is cost effective with the entire treatment costing less than Rs.4000/-, while an LIS costs nearly five times. With an high (93%) rate of pain relief and fissure healing rates at three months, only few patients will require repeat injections or surgical intervention. Lysy et al [6] quote long term healing rates of 70 % with conservative methods with the remaining patients requiring LIS. They used an average of 20 units of Botox as compared to an average 27 units in the present study. This study indicates that Botox as an agent for chemical sphincterotomy offers high symptomatic relief and healing rates. There is no risk of incontinence or irreversible sphincter damage and the treatment may be safely repeated in event of a recurrence. No special instruments or precautions were employed in these cases. In busy surgical practice with constraints of operation time, Botox offers a useful and effective outpatient alternative to operative treatment. A larger study group with a longer follow up period is required to ascertain the recurrence rates and long term results.

Conflicts of Interest

None identified

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