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RAPID COMMUNICATION

Can 5-aminosalicylic acid suppository decrease the pain after rectal band ligation?

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Abstract

AIM: To investigate the effect of 5-aminosalicylic acid (5-ASA) suppositories on rectal band ligation-induced pain.
METHODS: Sixty patients were randomized into two treatment groups.
RESULTS: Our results showed that there was no difference between 5-ASA suppository group and the control group for pain control.
CONCLUSION: 5-ASA may be an alternative treatment for hemorrhoids; however, it does not affect the rectal band ligation-induced pain.

Key words: Hemorrhoid; Pain; 5-aminosalicylic acid; Rectal band ligation

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INTRODUCTION

Patients with hemorrhoids most often consult a physician only after their symptoms become unbearable. Hemorrhoids are frequently occurring inflammatory processes involving the hemorrhoid plexus[1]. Treatments of this inflammatory process remains a difficult problem in some cases, despite the large number of conservative methods available, such as injection sclerotherapy, rubber band ligation (RBL), cryotherapy, infrared photocoagulation, bipolar diathermy galvanic generator and laser application[2]. RBL, which is an easy and inexpensive procedure, is used to treat second-degree hemorrhoids, and surgery is often necessary for third and fourth degree hemorrhoids[3].

Although RBL is a well-established treatment of choice for symptomatic internal hemorrhoids, fatalities following RBL have been reported[4-6]. Following this treatment some patients experience pain which may be accompanied by itching. Post-RBL pain has been reported at a frequency of 8.3% in the literature[7]. These complaints usually start on the day of treatment and may last several days.

The aim of this study was to investigate the effect of 5-aminosalicylic acid (5-ASA) suppositories (250 mg BID) on RBL-induced pain.

MATERIALS AND METHODS

Patients

The study was designed as a double-blind, randomized trial of 24 mo duration. One hundred and seven patients (44 males and 63 females) volunteered to take part in the study after receiving a full explanation of the nature and purpose of the trial.

Before the start of the trial, and after three weeks of treatment, patients were assessed both clinically and rectoscopically. Endoscopic examination assessed the degree of hemorrhoids[8], and determined whether or not anal fissure was present.

Sixty patients with second degree symptomatic hemorrhoids were included in this study. All patients' histories were obtained, and complete physical examination, digital rectal examination, and rigid rectoscopy were performed. Both groups consisted of 30 patients and none of these patients suffered from other systematic disease nor were they pregnant.

All the patients were prescribed the standard fiber diet and warm sitz baths (29℃/daily, twice). All patients underwent rectal band ligation for a single hemorrhoid cushion. One group was started on 5-ASA 500 mg BID P.R. and the control group received suppositories with placebo (glycerin). Patients were asked to score their pain on postprocedure day 1 and day 2. The scale used scored no pain as 0, mild pain as 1 and severe pain as 2.

Statistical analysis

The Statistical Package for Social Sciences (SPSS) version 10.0 for Windows was used to analyze the data. The Pearson Chi-square, McNemar and the Student-*t* test were used whenever appropriate. Differences were considered significant if $P < 0.05$.

RESULTS

There were 30 patients in each group; 14 males and 16 females in the 5-ASA group (mean age, 31.86 ± 10.75 years), and 9 males and 21 females in the control group (mean age, 32.73 ± 9.58 years). There were no statistically significant differences between the two groups according to sex and age.

Twenty-five patients (15 in the 5-ASA group and 10 in the control group) also presented with anal fissure. There were no statistical differences between the two groups ($P > 0.05$).

All patients showed clinical and endoscopic evidence of active hemorrhoid disease and complained of pain in the perianal region. In addition, some patients had bleeding, mucus in stool, tenesmus, itching or pain in the perianal region during defecation.

Table 1 shows the differences on RBL-induced pain between groups 1 and 2. With regard to RBL-induced pain, we could not find any significant differences for either of the groups on the first ($P = 0.390$) or on the second day ($P = 0.601$). Although there was pain in 33% of 5-ASA group patients on the first day, that ratio increased to 90% on the second day. However, that difference was not statistically significant ($P = 0.290$).

In the control group, 20% of patients did not have pain on the first day, and 93.3% had no pain on the second day. This difference was statistically not significant ($P = 0.490$).

We did not find any statistical difference between two groups according to sex ($P = 0.441$ for 5-ASA group; $P = 0.080$ for control group) between the first day and the second day ($P = 0.233$ for 5-ASA group; $P = 0.523$ for control group). When we compared first day pain after RBL between fissure (+) and (-), it was statistically significant for both groups ($P = 0.005$ for the 5-ASA group; $P = 0.007$ for the control group). On the other hand, there were no differences among the groups on the second day ($P = 0.189$ for the 5-ASA group; $P = 0.103$ for the control group).

If we compare the pain scores between the two groups who had fissures (+), there were no differences ($P = 0.665$ for the first day of treatment; $P = 0.659$ for the second day of treatment).

Table 1 Comparison of pain in each group one and two days after RBL *n* (%)

Pain (score)	Group1 (day 1)	Group 1 (day 2)	Group 2 (day 1)	Group 2 (day 2)	*P* (day 1)	*P* (day 2)
No (0)	10 (33)	27 (90)	6 (20)	28 (93.3)		
Mild (1)	13 (43)	2 (6.7)	18 (60)	2 (6.7)	0.390	0.601
Severe (2)	7 (23)	1 (3.3)	6 (20)	0		

DISCUSSION

Pain is the main symptom for second degree internal hemorrhoids. The exact etiopathogenesis of hemorrhoids-induced pain remains unknown. It is known that spasm of the internal sphincter is believed to be responsible for the discomfort after hemorrhoidectomy[8]. Furthermore, RBL behaves like hemorrhoidectomy presenting with similar pain. However, incarceration of smooth muscle fibers and mucosa in the transfixed vascular pedicle and epithelial denudation of the anal canal may also constitute the reason for pain[9]. A proper technique of ligation dictates that rubber bands are placed well above the dentate line. Sharp pain immediately after installment of a band denotes encroachment on the pain-sensitive area adjacent to the dentate line and necessitates removal of the band[10]. Theories for such pain include the band being placed in the receptive field of an aberrant somatic cutaneous nerve of the internal sphincter being drawn into the band, causing spasm and pain[11]. Other possible causes of pain include pressure sensation caused by edema of the hemorrhoid bundle and also, foreign body sensation of the band on the rectal mucosa.

Therefore, a number of substances with anti-inflammatory (corticosteroids), anesthetic (xylocaine) or venoconstrictive action, are currently in use with various degrees of success, 5-ASA is a powerful anti-inflammatory agent, which has been extensively used in patients with inflammatory bowel disease as an alternative topically applied corticosteroid[12]. It reduced the intensity of all symptoms evaluated, probably *via* its anti-inflammatory activity, and decreased significantly the congestion of the hemorrhoid plexus[1]. On the other hand, there is only one study published which has investigated the reduction of pain by an agent post-RBL. It showed that hydrocortisone-cinchocaine-framycetin suppositories, which are effective for inflammation, showed no significant difference in decreasing the severity of pain[13].

Neiger and Widaver showed that 5-ASA, given in the form of suppositories three times daily for two weeks, was very effective in eliminating the clinical symptoms in patients with hemorrhoids. Our results showed that 5-ASA, in the form of 250 mg suppositories given twice daily, is an effective drug in the symptomatic treatment of hemorrhoids irrespective of their degree of severity, without causing any significant side effects[14].

It is known that edema is one of the results of inflammation. Despite the fact that 5-ASA is effective against inflammation, in our study it failed to decrease

the severity of pain. Our results may be interpreted in two ways: 5-ASA may not affect the pain induced by hemorrhoids, or there may not be any correlation between pain and inflammation or edema.

However, we showed that anal fissures had a potential effect in inducing RBL pain in patients with hemorroids. We decided that if a patient with hemorrhoids had anal fissure, the priority treatment should be applied to the anal fissure for decreasing the severity of pain symptoms.

In conclusion, 5-ASA may be an alternative treatment for hemorrhoids, but it is not effective in RBL-induced pain.

COMMENTS

Background

Post Rectal Bant Ligation (RBL) pain has been reported at a frequency of 8.3% in the literature.

Research frontiers

5-aminosalicylic acid (5-ASA) decreases the inflammation of proctitis. Inflammation ıs one of the reasons of RBL-induced pain.

Innovations and breakthroughs

Anal fissures have a potential effect in inducing RBL pain in hemorroids patients. We decided that if a hemorrhoid patient had anal fissures, the priority treatment should be applied to the anal fissure for decreasing the severity of pain symptoms. 5-ASA may be an alternative treatment for hemorrhoids.

Applications

Although 5-ASA decreases the inflammation of proctitis, it is not effective in RBL-induced pain.

Peer review

These results may be interpreted in two ways: 5-ASA may not affect the pain induced by hemorrhoids, or there may not be any correlation between pain and inflammation or edema.

REFERENCES

1 **Gionchetti P**, Campieri M, Belluzzi A, Brignola C, Miglioli M, Barbara L. 5-ASA suppositories in hemorrhoidal disease. *Can J Gastroenterol* 1992; **6**: 18-20

2 **Dennison AR**, Paraskevopoulos JA, Kerrigan DD, Shorthouse AJ. New thoughts on the aetiology of haemorrhoids and the development of non-operative methods for their management. *Minerva Chir* 1996; **51**: 209-216

3 **Smith LE**. Symptomatic internal hemorrhoids. What are your options? *Postgrad Med* 1983; **73**: 323-330

4 **Bat L**, Melzer E, Koler M, Dreznick Z, Shemesh E. Complications of rubber band ligation of symptomatic internal hemorrhoids. *Dis Colon Rectum* 1993; **36**: 287-290

5 **O'Hara VS**. Fatal clostridial infection following hemorrhoidal banding. *Dis Colon Rectum* 1980; **23**: 570-571

6 **Russell TR**, Donohue JH. Hemorrhoidal banding. A warning. *Dis Colon Rectum* 1985; **28**: 291-293

7 **Marshman D**, Huber PJ Jr, Timmerman W, Simonton CT, Odom FC, Kaplan ER. Hemorrhoidal ligation. A review of efficacy. *Dis Colon Rectum* 1989; **32**: 369-371

8 **Ho YH**, Seow-Choen F, Low JY, Tan M, Leong AP. Randomized controlled trial of trimebutine (anal sphincter relaxant) for pain after haemorrhoidectomy. *Br J Surg* 1997; **84**: 377-379

9 **Ganio E**, Altomare DF, Gabrielli F, Milito G, Canuti S. Prospective randomized multicentre trial comparing stapled with open haemorrhoidectomy. *Br J Surg* 2001; **88**: 669-674

10 **Hooker GD**, Plewes EA, Rajgopal C, Taylor BM. Local injection of bupivacaine after rubber band ligation of hemorrhoids: prospective, randomized study. *Dis Colon Rectum* 1999; **42**: 174-179

11 **Tchirkow G**, Haas PA, Fox TA Jr. Injection of a local anesthetic solution into hemorrhoidal bundles following rubber band ligation. *Dis Colon Rectum* 1982; **25**: 62-63

12 **Goligher JC**. Surgery of the Anus, Rectum and Colon, 3rd ed. London: Springfield III CC Thomas, 1975: 831-832

13 **Williams JA**, Evans JC. An assessment of anesthetic-steroid suppositories: a controlled trial following rubber-band ligation of hemorrhoids. *Dis Colon Rectum* 1972; **15**: 66-68

14 **Govosdis V**, Triantafillidis JK, Cheracakis P, Barbatzas Ch, Plaitakis Z, Delis K, Merikas E, Zervakakis A. Efficacy of the topical application of 5-aminosalicylic acid (5-ASA) in the treatment of internal hemorrhoids. *Helenic J Gastroenterol* 1996; 322-324

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