Rubber Band Ligation of Hemorrhoids: A Simple, Painless, and Cost Effective Procedure

S. Aliyu, M.B. Tahir, U.D. Babayo, A.B. Zarami, A.G. Ibrahim and A.G. Madziga
Department of Surgery and Histopathology,
University of Maiduguri Teaching Hospital,
Maiduguri, Borno State, Nigeria

Abstract: *Background.* Open surgical procedure in the treatment of hemorrhoids is associated with high morbidity that discouraged many patients and made them to look for other alternatives of treatment. Rubber band ligation has been found to have less morbidity and many patients preferred it as an alternative procedure. *Materials and Methods.* The study prospectively reviewed all patients diagnosed with hemorrhoids and managed in this Hospital between January 2012 and December 2016. *Results.* A total of 53 patients were studied age range from 17 to 70 years with male to female ratio of 2:1. The peak age group was 21 to 30 years with 23.08%. The severities of the condition were first degree in 20.75%, second degree in 52.83%, and third degree in 26.42%. Those with multiple sessions were 20.75%, of which 63.63% had third degree while 36.67% had second degree. The post operative complications were anal pain/ discomfort in 49.06%, mucus discharge in 35.85%, minor bleeding in 13.21% patients. Recurrences were seen in 9.43% patients. Patients were followed for a period of 9 – 30 months with a mean follow up period of 18 months *Conclusion.* Rubber band ligation is an efficacious, cost-effective, simple and patient friendly treatment for all hemorrhoids regardless of the degree. In our series complications were mere discomfort and mucus discharge.

Keywords: hemorrhoids, rubber band ligation, management outcome

Introduction

Hemorrhoids are very common anorectal condition defined as the symptomatic enlargement and distal displacement of the normal anal cushions. They affect millions of people around the world, and represent a major medical and socioeconomic problem (Loder et al., 1994). Multiple factors have been claimed to be the etiologies of hemorrhoidal development including constipation and prolonged straining. The abnormal dilatation and distortion of the vascular channel, together with the destructive changes in the supporting connective tissue within the anal cushion, is a paramount finding of the hemorrhoidal disease. An inflammatory reaction and vascular hyperplasia may be evident in hemorrhoid (Morgado et al., 1988; Aigner et al., 2009; Chung, Hou and Pan, 2004). Hemorrhoids are generally classified on the basis of their location and degree of prolapsed. Internal hemorrhoid originate from the inferior hemorrhoidal venous plexus above the dentate line and are covered by mucosa, while external hemorrhoids are dilated venules of this plexus located below the dentate line and are covered with squamous epithelium. Mixed (interno-external) hemorrhoids above and below the dentate line. The internal hemorrhoids are further graded based on their appearance and degree of prolapsed, known as Goligher's (1976) classification: (1) First degree hemorrhoids (Grade 1): The anal cushion bleeds but do not prolapsed; (11) Second-degree hemorrhoids (Grade 11): The anal cushions prolapsed through the anus on straining but reduced spontaneously; (111) Third-degree hemorrhoids (Grade 111): The anal cushion prolapsed through the anus on straining or exertion and require manual replacement into the anal canal; and (1V) Fourth degree hemorrhoids (Grade 1V): The prolapsed stays out all the times and is irreducible. Acutely thrombosed incarcerated internal hemorrhoids and incarcerated, thrombosed hemorrhoids involving circumferential, rectal mucosal prolapsed are also fourth-degree hemorrhoids (American Gastroenterological Association, 2004). The commonest presenting

symptoms are painless rectal bleeding, mucus discharge, and rarely pain when complicated by thrombosis (Lohsiriwat, 2012; Seok-Gyu and Soung-Ho, 2011; Herman and Mather, 2007; Agbo, 2011; Bayer, Myslovaty and Picovsky, 1996; Wanq et al., 1991; Goligher, 1976). The diagnosis is based on the typical history of painless per rectal bleeding and presence of prolapsed anal mucosa. The treatment options are open surgical procedures, rubber band ligation, laser ablation, and cryosurgery. The aim of the study was to determine the effectiveness of rubber band ligation for all degree of hemorrhoids.

Patients and Methods

The study prospectively reviewed all patients diagnosed with hemorrhoids and managed in this Hospital between January 2012 and December 2016. Permission for the study was granted by the Hospital management and informed consent obtained from all patients. Information extracted from clinical and laboratory records and data analyzed using SPSS statistical analysis. All patients were diagnosed and treated as an outpatient basis. Investigations done were packed cell volume, urinalysis, fasting blood glucose, and abdominopelvic ultrasound scan. All patients had digital rectal examination and proctoscopy. All patients had rubber band ligation using Baron Gun as an office procedure without prior anesthesia or bowel preparation.

Results

A total of 53 patients were studied age ranged from 17 to 70 years with male to female ratio of 2:1. The peak age group was 21 to 30 years with 17(23.08%) (Table 1). The severity of the condition were first degree in 11(20.75%), second degree in 28(52.83%), and third degree in 14(26.42%). Those with multiple sessions were 11(20.75%), of which 7(63.63%) had third degree while 4(36.67%) had second degree. The post operative complications were anal pain/ discomfort in 19(35.85%), mucus discharge in 26(49.06%), minor bleeding in 7(13.21%) patients. Recurrences were seen in 5(9.43%) patients who subsequently had a repeat session. The average time taken for the procedure was ten minutes. Patients were followed up for a period of between 9- 30 months with a mean of 18 months. All patients returned to work within 48 hours after the procedure.

Table 1. Age distribution

Age (yrs)	No	%
15-20	6	11.32
21-30	17	32.08
31-40	5	9.43
41-50	14	26.42
51-60	8	15.09
61-70	3	5.66
Total	53	100.00

Discussion

The peak incidence of the disease was between 21 – 30 years in 23.08% of patient and this is in sharp contrast with findings by Johanson and Sonnenberg (1990) that found a peak of 45-65 years. The severity of the condition seen were first degree in 20.75%, second degree 52.83%, and third degree in 26.42%, a similar trend was found by Sheng-Long et al. (2015). Those with multiple sessions were seen in 20.75 %. The multiple sessions were done for 63.63% of 3rd degree while 36.67% in 2nd degree (Chaleoykitti, 2002) reported similar trend. The post operative complications were pain /discomfort in 36.67% and minor bleeding in 13.21%, same spectrum of complications was reported by Andreia (2016). The recurrence rate

was noted to be 9.43% in the current study which is similar to Andreia (2016). The procedure was well tolerated thus can be done as out-patient office procedure, with the attendant benefit of early return to work within 72hrs. It takes 3-5 minutes to perform the procedure, painless, and patients spend an average of equivalent of USD 75 with a very short period of recovery hence early return to work. When compared to open surgery the procedure takes an average of 30- 45 minutes, has severe post operative pain, and patients spend trice of the price as well as time off work place is longer with an average of 4-8 weeks.

Conclusion

Rubber band ligation is a simple, cost effective, patient friendly, and an efficacious modality of treating hemorrhoids regardless of the degree. In our experience all categories were treated with success and minimal bearable complications, it is therefore a formidable tool in the treatment of such condition especially in hospital with long surgery waiting list.

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