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**Alp Yildiz**  
Department of General Surgery,  
Yildirim Beyazit University  
Yenimahalle Training and  
Research Hospital, Ankara,  
Turkey

## Rubber band ligation on internal hemorrhoid treatment as a safe and effective option

**Alp Yildiz**

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### Abstract

Rubber band ligation is established as one of the most important, cost-effective and commonly used treatments for first- to third-degree internal hemorrhoids, causing fibrosis, retraction, and fixation of the hemorrhoidal cushions. In this study we evaluate the safety of the procedure according to complication rates. 134 patients with Grade 2 internal hemorrhoids included the study. All patients underwent single or two quadrant rubber band ligation under local anesthesia. Intraoperatively 21 patient developed mild bleeding, 1 patients developed massive bleeding postoperatively. No patient developed thrombosed hemorrhoids, 11 patients developed urinary retention needing catheterization, 51 patients developed mild pain postoperatively. 14 patients developed vasovagal symptoms, in 1 patient slippage of bands occurred. Pelvic sepsis and death not occurred. In this study our results showed that rubber band ligation is a safe and effective option Grade 1 and 2 internal hemorrhoids in proper cases.

**Keywords:** hemorrhoidal disease, rubber band ligation, treatment

### Introduction

In the 1950s, Blaisdell <sup>[1, 2]</sup> described a new technique for the ligation of bleeding internal hemorrhoids which can be performed in the office without the need for hospitalization. This new concept was based on the fact that internal hemorrhoids are easily accessible, practically devoid of pain and thus, suitable for outpatient treatment. In addition, during this period, injection therapy was an alternative to surgery, but without any controlled destruction of hemorrhoidal tissue. The technique of office ligation of internal hemorrhoids was later modified and simplified using rubber bands by Barron <sup>[2, 3]</sup> in the 1960s. Since then, rubber band ligation (RBL) was established as one of the most important, cost-effective and commonly used treatments for first- to third-degree internal hemorrhoids, causing fibrosis, retraction, and fixation of the hemorrhoidal cushions <sup>[2, 4]</sup>. In this study we evaluate the safety of the procedure according to complication rates.

### Patients and Methods

134 patients with Grade 2 internal hemorrhoids included the study. All patients underwent single or two quadrant rubber band ligation under local anesthesia. Patients with serious systemic disorders, bleeding disorders, coagulation disorders and with any disorder which effects wound healing excluded this study. All related complications evaluated retrospectively.

### Results

Mean age of the patients was 39.4. 76 male 58 female patients included. Intraoperatively 21 patient developed mild bleeding, 1 patients developed massive bleeding postoperatively. No patient developed thrombosed hemorrhoids, 11 patients developed urinary retention needing catheterization, 51 patients developed mild pain postoperatively. 14 patients developed vasovagal symptoms, in 1 patient slippage of bands occurred. Pelvic sepsis and death not occurred.

### Discussion

Haemorrhoids represent pathological changes in the anal cushions, a normal component of the anal canal involved in aiding evacuation of stool and fine-tuning of anal continence. These pathological changes include rupture of the supporting connective tissue within the cushions,

**Correspondence**  
**Alp Yildiz**  
Department of General Surgery,  
Yildirim Beyazit University  
Yenimahalle Training and  
Research Hospital, Ankara,  
Turkey

resulting in enlargement of the vascular plexus. The pathogenesis of haemorrhoids explains the symptoms associated with the condition: bleeding, swelling and prolapse, seepage due to the disruption of the fine tuning of continence and consequent irritation of the perianal skin<sup>[5]</sup>. More severe symptoms may include thrombosis leading to pain. Haemorrhoids are very common, affecting as many as 1 in 4 of the population and resulting in a significant community and hospital practice burden. Over 20,000 haemorrhoidal procedures are carried out in the UK each year<sup>[5, 6]</sup>. Treatment options for haemorrhoids are varied; however, the evidence base for many of these options has, until recently, been poor. Despite the poor scientific substantiation, some of these treatment options have stood the clinical test of time. However, many new options have been introduced since the turn of the century. There is recent scientific support for some of these newer options that allow an evidence-based update to management<sup>[5]</sup>.

Many office-based procedures (Such as rubber band ligation, injection sclerotherapy, infrared coagulation, cryotherapy, radiofrequency ablation and laser therapy) are effectively performed for grade 1-2 hemorrhoids and some cases of grade 3 hemorrhoids with or without local anesthesia. Among several office-based procedures, rubber band ligation (RBL) appeared to have the lowest incidence of recurrent symptom and the need for retreatment<sup>[7, 8]</sup>. RBL is also the most popular non-surgical intervention for hemorrhoids performed by surgeons<sup>[7, 9]</sup>. It is a relatively safe and painless procedure with minimal complication. However, RBL is contraindicated in patient with anticoagulants or bleeding disorder, and those with concurrent anorectal sepsis. With a technical note, the proper position of rubber band should be at the base of hemorrhoid bundle or over the bleeding site, but not too close to the dentate line. Vacuum suction ligator may offer clearer visualisation of hemorrhoids and more precise placement of banding when compared to a traditional forcep ligator<sup>[7, 10]</sup>. Multiple sites and serial sessions of banding may be required for large internal hemorrhoids.

Mild bleeding, pain, vasovagal symptoms, slippage of bands, priapism, difficulty in urination, anal fissure, and chronic longitudinal ulcers are normally considered minor complications, more frequently encountered. Massive bleeding, thrombosed hemorrhoids, severe pain, urinary retention needing catheterization, pelvic sepsis and death are uncommon major complications. Mild pain after rubber band ligation is the most common complication with a high frequency in some studies. Secondary bleeding normally occurs 10 to 14 d after banding and patients taking anti-platelet and/ or anti-coagulant medication have a higher risk, with some reports of massive life-threatening haemorrhage. Several infectious complications have also been reported including pelvic sepsis, Fournier's gangrene, liver abscesses, tetanus and bacterial endocarditis. To date, seven deaths due to these infectious complications were described. Early recognition and immediate treatment of complications are fundamental for a favourable prognosis<sup>[2]</sup>. In this study our results showed that rubber band ligation is a safe and effective option Grade 1 and 2 internal hemorrhoids.

## References

1. Blaisdell PC. Office ligation of internal hemorrhoids. *Am J Surg* 1958; 96:401-404 [PMID: 13571517 DOI: 10.1016/0002-9610(58) 90933-4].
2. Albuquerque, Andreia. Rubber band ligation of hemorrhoids: A guide for complications. *World journal of gastrointestinal surgery*. 2016; 8(9):614.
3. Barron J. Office ligation of internal hemorrhoids. *Am J*

- Surg* 1963; 105:563-570 [PMID: 13969563 DOI: 10.1016/0002-9610(63)903 32-5].
4. Siddiqui UD, Barth BA, Banerjee S, Bhat YM, Chauhan SS, Gottlieb KT *et al*. Devices for the endoscopic treatment of hemorrhoids. *Gastrointest Endosc* 2014; 79:8-14 [PMID: 24239254 DOI: 10.1016/j.gie.2013.07.021].
5. Brown, Steven R. Haemorrhoids: an update on management. *Therapeutic advances in chronic disease*. 2017; 8(10):141-147.
6. NHS Information Centre. Hospital episode statistics (Procedure search), <http://content.digital.nhs.uk/hes> (2005, accessed 31 May 2017).
7. Lohsiriwat, Varut. Treatment of hemorrhoids: A coloproctologist's view. *World Journal of Gastroenterology: WJG*. 2015; 21(31):9245.
8. MacRae HM, McLeod RS. Comparison of hemorrhoidal treatment modalities. A meta-analysis. *Dis Colon Rectum* 1995; 38:687-694 [PMID: 7607026].
9. Beattie GC, Wilson RG, Loudon MA. The contemporary management of haemorrhoids. *Colorectal Dis*. 2002; 4:450-454 [PMID: 12790918 DOI: 10.1046/j.1463-1318.2002.00371.x].
10. Ramzisham AR, Sagap I, Nadeson S, Ali IM, Hasni MJ. Prospective randomized clinical trial on suction elastic band ligator versus forceps ligator in the treatment of haemorrhoids. *Asian J Surg*. 2005; 28:241-245 [PMID: 16234072].