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LETTER TO THE EDITOR

Endoscopic polidocanol foam sclerobanding for treatment of internal hemorrhoids: A novel outpatient procedure

An-Na Mou, Yu-Ting Wang

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An-Na Mou, Yu-Ting Wang, Department of Radiology, Sichuan Provincial People's Hospital, University of Electronic Science and Technology of China, Chengdu 610072, Sichuan Province, China

Corresponding author: Yu-Ting Wang, PhD, Professor, Department of Radiology, Sichuan Provincial People's Hospital, University of Electronic Science and Technology of China, No. 32 Section 2, 1st Ring Road (West), Chengdu 610072, Sichuan Province, China. wangyuting_330@163.com

Abstract

In the study, we comment on the article by Qu *et al*. Internal hemorrhoids are the most common anorectal disorders worldwide with bleeding, prolapse, and difficulty in defecation. Endoscopic rubber band ligation (ERBL) is a safe, convenient, quick, and economical outpatient procedure. The main goal of ERBL is to alleviate prolapse, but the high incidence of recurrence and post-procedural pain are of clinical concern. Polidocanol foam as a local hemostatic and anesthetic agent could reduce the rates of post-procedural pain and bleeding. Endoscopic polidocanol foam sclerobanding (EFSB) is a novel approach that could lift the mucosa for easy ligation and promote increased scarring in the submucosal tissue which translates into long-term relief from prolapse recurrence and reduced 24-h post-procedural pain. The study by Qu *et al* is a novel multi-center prospective randomized study to compare ERBL and EFSB in patients with grades II and III internal hemorrhoids with one-year follow-up. Results showed that EFSB is a novel therapy for internal hemorrhoids, but future studies with a larger sample, multiple treatment sessions, and long-term follow-up are required to confirm these findings.

Key Words: Internal hemorrhoids; Goligher classification; Rubber band ligation; Sclerotherapy; Polidocanol foam

Core Tip: The clinical manifestations, pathogenesis, classification, and treatment in patients with internal hemorrhoids are briefly summarized. Endoscopic rubber band ligation (RBL) and injection sclerotherapy are widely used and recommended as a first-line outpatient procedure for hemorrhoids. In the prospective and multicenter study performed by Qu *et al*, endoscopic polidocanol foam sclerobanding, combining endoscopic polidocanol foam sclerotherapy with RBL, is evaluated in a clinical trial as a new procedure. It is a unique method to treat grade II and grade III internal hemorrhoids by reducing prolapse recurrence, reducing 24-h post-procedural pain, and improving long-term efficacy compared with endoscopic RBL.

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TO THE EDITOR

Internal hemorrhoids are one of the most common benign anorectal disorders. The prevalence rates range from 4.4% to 45%[1]. United States epidemiological investigation shows that more than 2.2 million patients present with this disease annually[2]. Internal hemorrhoids are soft cushion-like dilated veins formed by abnormal distortion and engorgement of submucosal venous arcades in the distal rectum, located above the dentate line and covered by columnar epithelium. There is no visceral or somatic innervation. The main clinical manifestations of internal hemorrhoids are bleeding, prolapse, and difficulty in defecation. It may be complicated by thrombosis, incarceration, and secondary anemia which could seriously affect the quality of life. Weakening of the supporting anal cushion tissue and spasm of the internal sphincter are the main causes of internal hemorrhoids[3]. Based on this theory, the goal of treatment is to gradually eliminate or reduce clinical symptoms and prevent prolapse non-invasively with a high degree of accuracy without complete or subtotal surgical resection of the hemorrhoids[1,4].

Treatment

At present, internal hemorrhoids are classified into four degrees by Goligher classification depending on the degree of hemorrhoid prolapse[5]. Grade I, grade II, and grade III are the most common. The treatment of internal hemorrhoids includes conservative treatment, office-based treatment, and surgery. Treatment depends on Goligher classification and patient preferences. If a provisional diagnosis of internal hemorrhoids has been made without excessive bleeding or excruciating anal pain, conservative management is preferred[1,6]. If there is no response after 6-8 wk of conservative management, further treatment strategies may be considered[7]. Most patients with symptomatic grades I to III internal hemorrhoids can be effectively managed with office-based treatment, such as rubber band ligation (RBL), sclerotherapy, or infrared coagulation, all of which have a low risk of bleeding and cause minimal discomfort. Patients usually have less pain and can return to work and normal activities sooner compared to treatment with surgical excision. Grades III and IV hemorrhoids, especially those which are ineffective with conservative or office-based treatment, may be treated with primary surgical interventions such as hemorrhoidectomy, stapled hemorrhoidectomy, or Doppler-guided hemorrhoidal artery ligation (DG-HAL) in addition to mastopexy[1,6].

Office-based treatment: RBL is considered the most effective, cost-efficient, and well-tolerated office-based procedure in improving grades I-III prolapse with a low complication rate[4,8]. The recurrence rates for RBL range from 15.5%-49% with 66.9% of patients needing repeat RBL at a 2-year follow-up[9,10]. Therefore, patients should expect repeat RBL due to possible recurrence. Perineal sepsis and severe bleeding are rare but are expected complications after RBL. A case series describes seven cases of perineal sepsis in patients who received RBL[11]. In another case series, the incidence of severe bleeding is reported as 1.7%-2.5%[12].

Patients receiving anticoagulation therapy may need to pause their medication prior to sclerotherapy[6]. Sclerotherapy is indicated in patients with grades I to III internal hemorrhoids with bleeding tendency which may be unresponsive to conservative treatment or cannot undergo surgical interventions. It is safe for anticoagulated patients. It is effective for patients with severe comorbidities who can not undergo traditional surgical treatment and for elderly patients with symptomatic bleeding hemorrhoidal disease[13,14].

Qu *et al*[15] evaluated the efficacy of endoscopic polidocanol foam sclerobanding (EFSB) to treat grades II and III internal hemorrhoids. In the article, 195 patients with symptomatic internal hemorrhoids were prospectively and randomly divided into the EFSB group (98 cases) and endoscopic RBL (ERBL) group (97 cases) from four Chinese Gastroenterology and Endoscopy centers and were followed for 12 mo. Compared to the ERBL group, the EFSB group had a lower recurrence rate at the 12-mo follow-up, a significant symptomatic reduction, and a high degree of patient satisfaction. It was first reported that EFSB, as a novel based-office procedure, was used to treat grade II and grade III internal hemorrhoids combined with ERBL and sclerotherapy. Most of the previous studies were focused on RBL or sclerotherapy alone. A new meta-analysis highlighted that sclerotherapy had a similar success rate, lower recurrence rate, and fewer complications compared to RBL[14]. Salgueiro *et al*[16] showed that the therapeutic success was not significantly different between RBL and polidocanol foam sclerotherapy (85% *vs* 93.3%, $P = 0.14$), the recurrence rates were higher in the RBL group (16.1% *vs* 42.2%, $P = 0.02$), and complications were more frequent with RBL (30% *vs* 10%, P

= 0.01). Another meta-analysis showed that RBL performed better than sclerotherapy in controlling prolapse and bleeding while the recurrence rate at 3 mo was similar and patient satisfaction was significantly higher with RBL, even though post-procedural pain was significantly higher[17]. Abiodun *et al*[18] showed that the rate of reduced clinical symptoms in the ERBL group was higher than that of the sclerotherapy group, the recurrence rate had no significant difference between the two groups, and the postoperative pain was higher in the ERBL group. These studies had some differences in the recurrence rate but agreed that the frequency of postoperative pain is higher in the RBL group. According to Qu *et al*[15], the recurrence rate was lower in the EFSB group than in the ERBL group (11.2% *vs* 21.6%, P = 0.038), and EFSB was independently and negatively associated with post-procedural pain at 24 h by multiple linear regression analysis[15].

Pata *et al*[19] first reported sclerobanding which combined RBL with 3% polidocanol foam sclerotherapy to treat grade II and grade III hemorrhoidal disease, and showed that the novel sclerbanding was a safe technique with a low rate of postoperative complications[19]. Qu *et al*[15] demonstrated similar results. However, the sclerbanding by Pata *et al*[19] was performed with an anoscope. However, procedures with an anoscope may be complicated by a limited field of vision and reversed image. Retroflex ERBL could provide a wide view to identify the hemorrhoids, improve maneuverability and flexible performance of hemorrhoidal ligation, allow more rubber band release, and reduce the rate of complications [20]. Endoscopic sclerotherapy allows good visualization of internal hemorrhoids, which helps in accurate and precise injection of polidocanol foam into the submucosa, therefore reducing the injection errors and related complications. Qu *et al*[15] first reported sclerobanding using an endoscope. They used 10 mg/mL (1%) of polidocanol foam and performed single treatment. Polidocanol foam is a cost-effective, commonly available, and preferred therapeutic agent with a low risk of complications. It induces the inflammatory reaction with sclerosis of the submucosal tissue, hemorrhoid vascular occlusion, hemorrhoidal tissue atrophy and fibrosis, reducing bleeding and prolapse, and relieving perianal pain. It also causes some degree of anesthetic effect and has few side effects. Polidocanol foam allows for a reduction in the injection dose of the sclerosing agent, potentially increasing the contact area and adhesion with the endothelium compared with liquid agents. The submucosal injection of polidocanol foam prior to RBL could raise the mucosa to facilitate ligation and increase submucosal tissue fibrosis, helping to reduce bleeding.

In comparison, infrared coagulation is more expensive and complex compared to RBL and is suitable for grade I and grade II internal hemorrhoids with bleeding and also in some cases of grade III internal hemorrhoids.

Surgical treatment: Excisional hemorrhoidectomy is the gold standard procedure for internal hemorrhoids; however, it has a higher complication rate with a longer recovery time. Surgery is indicated when office-based procedures are felt to be ineffective[4]. Stapled haemorrhoidectomy is not routinely recommended as a first-line surgical treatment for hemorrhoids[4,6]. DG-HAL is associated with decreased postoperative pain but increased recurrence rates compared with excisional hemorrhoidectomy[6].

Although it is confirmed that EFSB is a unique method for sclerobanding to treat grade II and grade III internal hemorrhoids by combining ERBL and polidocanol foam sclerotherapy, the success rate of EFSB needs to be investigated further. Patients with severe symptoms may require additional treatments, whereas EFSB is usually performed as a single treatment. Studies with larger sample sizes and longer follow-up are needed to look at the recurrence rate of EFSB compared to polidocanol foam sclerotherapy and other therapies such as excisional hemorrhoidectomy.

CONCLUSION

The incidence of internal hemorrhoids is increasing due to urbanized lifestyles and work habits. Office-based treatment is preferred and strongly recommended for patients with symptomatic grades I-III HD. EFSB may be a satisfactory method to decrease the rate of prolapse recurrence and 24-h post-procedural pain.

FOOTNOTES

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Country of origin: China

ORCID number: An-Na Mou 0000-0001-6767-2838; Yu-Ting Wang 0000-0002-1443-2643.

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