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ORIGINAL ARTICLE

Ligation under vision in the management of symptomatic hemorrhoids: A preliminary experience

Cemal Kara [a], Alper Sozutek [b,*], Ismail Yaman [c], Semih Yurekli [a], Turker Karabuga [a]

[a] Department of General Surgery, Karşıyaka State Hospital, Karşıyaka, İzmir, Turkey
[b] Department of Gastroenterological Surgery, Faculty of Medicine, Mersin University, Akdeniz, Mersin, Turkey
[c] Department of General Surgery, Faculty of Medicine, Balıkesir University, Balıkesir City, Balıkesir, Turkey

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Summary *Aim:* To evaluate the surgical outcomes of 47 patients who underwent hemorrhoidal arterial ligation under vision (LUV) for symptomatic Grade II and Grade III hemorrhoids.
Methods: A total of 47 patients who underwent LUV between May 2005 and February 2009 were analyzed retrospectively. The patients were evaluated with regard to demographic data, grade of the disease, symptoms, medical and/or surgical treatment previously received, operation time, pain scores, analgesic requirement, length of hospital stay, and complications related to the procedure.
Results: The study population ($n = 47$) included 31 (65.9%) men and 16 (34.1%) women with a median age of 37.4 ± 11.7 (range, 19–63) years. Of these 47 patients, 18 (38.3%) patients had Grade II hemorrhoidal disease (HD) and 29 (61.7%) patients had Grade III HD. On average, six ligatures (range, 3–8) were used. The mean operation time was 27 ± 4.8 (range, 15–35) minutes. No major complication that required surgical intervention occurred in the early postoperative period for any of the patients except for two patients with rectal submucosal hematoma. The mean hospital stay was 1.2 ± 0.65 (range, 1–4) days. The median follow-up period was 21.5 ± 7.7 (range, 12–44) months. At the last follow-up, 38 (80.8%) patients remained asymptomatic; two (4.2%) patients with Grade II HD and four (8.5%) patients with Grade III HD were still suffering from bleeding but with a reduction in the frequency; prolapsed hemorrhoids were detected only in three (6.3%) patients.

Conflicts of interest: All contributing authors declare no conflicts of interest.

* Corresponding author. Department of Gastroenterological Surgery, Mersin University Medicine Faculty Research and Training Hospital, Zeytinlibahce Caddesi, 33079 Mersin, Turkey.
E-mail address: dralpers@hotmail.com (A. Sozutek).

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Conclusion: LUV is a safe and easily applied alternative technique with low postoperative complications for the surgical treatment of symptomatic Grade II and III HD.

1. Introduction

Hemorrhoidal disease (HD) is one of the most common pathological conditions encountered in gastroenterology and colorectal surgery units.[1,2] Symptomatic Grade I and Grade II hemorrhoids can generally be treated conservatively, whereas Grade III and Grade IV hemorrhoids are usually resistant to medical therapies and often require surgery.[2] Although many surgical methods have been proposed, the ideal treatment for HD remains a subject of debate.[3,4] Hemorrhoidectomy is accepted as the gold standard for the surgical treatment of HD for many years, although the procedure is associated with severe postoperative pain, long recovery period, and serious complications (e.g., anal stenosis, incontinence, and bleeding after surgery).[4–6] In recent studies, the physiology and anatomy of the anorectal region are well defined.[7] Consequently, the vascularization and the importance of hemorrhoidal piles in anal continence are well understood. Following these major improvements, the nonexcisional methods, which are based on the principle of disrupting the blood flow of hemorrhoidal piles, such as stapled hemorrhoidopexy (SH)[8] and Doppler-guided transanal hemorrhoidal dearterialization [Doppler-guided hemorrhoidal artery ligation (DGHAL)][9] have been introduced in the surgical treatment of HD. These methods have successful outcomes with lower complication rates and offer obvious advantages such as less postoperative pain and early recovery period.[10] Unfortunately, these techniques can be performed only in major surgical centers by advanced colorectal surgeons because these procedures require experience and expensive specialized instruments. By contrast, as Bronstein et al[2] indicated, the hemorrhoidal arterial ligation procedure can be easily performed under vision without using any specialized instruments and Doppler device. In this study, we aimed to evaluate the outcomes of 47 patients who underwent hemorrhoidal arterial ligation under vision (LUV) for symptomatic hemorrhoids.

2. Patients and methods

Forty-seven patients who underwent hemorrhoidal arterial LUV for Grade II and Grade III HD between May 2005 and February 2009 were analyzed retrospectively. The procedure was performed only after obtaining written informed consent from the patients. Patients who had thrombosis and/or Grade IV prolapsed hemorrhoids were excluded from this study. A complete medical history was obtained from all patients. The anorectal region was examined by digital examination and rectoscopy to stage the disease and rule out other anorectal conditions.

2.1. Surgical technique

A fleet enema (250 mL) was used for preoperative preparation. All patients underwent the surgical procedure in the jackknife position under spinal anesthesia. Initially, the procedure was performed by exposing the anal canal using the Hill—Ferguson anoscope but for the last 17 patients, a videoanoscope (Medbar Medical Products, İzmir, Turkey) was used because of its advantages such as better viewing and lightning.[11] Following the insertion of the anoscope, the hemorrhoidal cushions were observed at 3 o'clock, 7 o'clock, and 11 o'clock positions. The submucosal tissue of pile base was transfixed at a depth of 0.5 cm with two polyglactin 2/0 stitches above 2—3 cm of the dentate line. Ligation was performed between 3 o'clock and 5 o'clock, 7 o'clock and 9 o'clock, and 11 o'clock and 1 o'clock positions. The number of necessary ligations required ranged from three to seven for each patient. Three minutes following the ligation, the hemorrhoidal cushions began to congest. The ligated piles turned pale and decreased in size in 5 minutes.

The patients were evaluated with regard to demographic data, grade of the disease, symptoms, medical and/or surgical treatment previously received, operation time, pain score, analgesics requirement, length of hospital stay, and complications related to the procedure. Postoperative pain was assessed using visual analog scale (VAS). Intramuscular diclofenac sodium was applied for pain management. The disease was staged according to Parks' scale. The patients were examined following discharge after 1 week, 1 month, 6 months, and 1 year. To evaluate the effectiveness of the procedure, we considered only the results after 1 year of follow-up.

2.2. Statistical analysis

The data obtained were summarized in a computerized spreadsheet and statistical analyses were performed using SPSS version 11.5 for Windows (SPSS Inc., Chicago, IL, USA). The χ^2 test was used to compare categorical variables and Student *t* test for parametric values. Numerical data were presented as mean ± standard deviation and categorical data were expressed as number and percent. Statistical significance was set at $p < 0.05$.

3. Results

The study population ($n = 47$) included 31 (65.9%) men and 16 (34.1%) women with a median age of 37.4 ± 11.7 (range, 19—63) years. Of these 47 patients, 18 patients (38.3%) had Grade II HD and 29 patients (61.7%) had Grade III HD. Rectal