The American Journal of Surgery (2014) 208, 21-25

The American Journal of Surgery®

Clinical Science

Hemorrhoidal laser procedure: short- and long-term results from a prospective study

Nicola Crea, M.D.[a,*], Giacomo Pata, M.D.[b], Mauro Lippa, M.D.[a], Deborah Chiesa, M.D.[c], Maria Elena Gregorini, M.D.[d], Paolo Gandolfi, M.D.[a]

[a]*Department of General Surgery, San Camillo Clinic Institute, Via Turati 44, 25123 Brescia, Italy;* [b]*Department of Medical and Surgical Sciences, Second Division of General Surgery, Brescia Civic Hospital, Brescia, Italy;* [c]*Department of Medical and Surgical Sciences, Third Division of Internal Medicine, University of Brescia School of Medicine, Brescia Civic Hospital, Brescia, Italy;* [d]*Maternal-Fetal Medicine Unit, Department of Obstetrics and Gynaecology, University of Brescia School of Medicine, Brescia Civic Hospital, Brescia, Italy*

KEYWORDS:
Hemorrhoids;
Hemorrhoidal laser procedure;
Treatment

Abstract

BACKGROUND: We report the results of 2-year regular use of the hemorrhoidal laser procedure (HeLP) in 97 patients with symptomatic second- to third-grade hemorrhoids with minimal or moderate internal mucosal prolapse.

METHODS: Data on duration of the procedure, perioperative complications, postoperative pain, downgrading of hemorrhoids, resolution or persistency, and recurrence of hemorrhoidal disease (HD) were prospectively collected.

RESULTS: No significant intraoperative complications occurred. The median follow-up was 15 months. Postoperative pain was null in most patients. There were no cases of rectal tenesmus or alteration of defecation habits. Symptoms and HD downgrading reached a "plateau" at 3 to 6 months after the HeLP. At this evaluation, frequency of bleeding, pain, itching, and hemorrhoidal acute syndrome decreased by 76% to 79%. HD grade showed a significant reduction. HD recurrence rate was 5% at 2 years.

CONCLUSIONS: Our study demonstrates that the HeLP is a safe, effective, and painless technique for the treatment of symptomatic second- to third-grade hemorrhoids with minimal or moderate mucosal prolapse, ideally suitable as ambulatory treatment.

Hemorrhoids are a common anorectal condition. They affect millions of people around the world and represent a major medical and socioeconomic problem.[1,2] The most common symptoms include rectal bleeding, pain, anal irritation, anal mass prolapse, and a disrupted quality of life.[3,4] In the United Kingdom, hemorrhoids were reported to affect 13% to 36% of the general population.[5] However, this estimation may be higher than actual prevalence because the community-based studies mainly relied on self-reporting and patients may attribute any anorectal symptoms to hemorrhoids. Because of its high incidence among the adult population, a painless and effective surgical treatment for hemorrhoidal disease (HD) represents a timely issue for colorectal surgeons. In spite of continuous progress in that field, many controversies still remain

The authors have no conflicts of interest or financial ties to disclose.

* Corresponding author. Tel.: +39-030-2910367; fax: +39-030-293369.

E-mail address: cirioz@libero.it

Manuscript received June 11, 2013; revised manuscript October 9, 2013

0002-9610/$ - see front matter © 2014 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.amjsurg.2013.10.020

about the appropriate surgical therapy: excision, ligation, dearterialization, and stapled or conventional procedures? At present, the most common surgical procedures for HD are the excision–ligation, first described by Milligan-Morgan et al,[6] and the closed variant technique, proposed by Ferguson et al.[7] However, postoperative pain is commonly experienced in both cases.[8] The introduction of mini-invasive surgical procedures yielded better control of the symptoms with less postoperative pain, challenging the conventional procedures. Morinaga et al[9] described a new surgical procedure for HD named the hemorrhoidal artery ligation (HAL). Later, Sohn et al[10] proposed the transanal hemorrhoidal dearterialization (THD). Both the techniques are based on the identification and ligation of all the terminal branches of the superior rectal artery, through a specific proctoscope associated with a Doppler transducer. These procedures cause the reduction of blood flow to the hemorrhoidal tissue, thus determining decongestion and shrinkage of the hemorrhoidal cushions. The decreased tension helps the connective tissue regeneration, the reduction of the prolapse, and the improvement of the hemorrhoidal symptoms.

Recently, Giamundo et al[11,21] proposed a new nonexcisional surgical technique called the hemorrhoidal laser procedure (HeLP). It pursues the same goal of the THD and HAL, that is, the mini-invasive treatment of symptomatic second- to third-grade hemorrhoids with minimal internal mucosal prolapse.[12] With the HeLP procedure, the shrinkage of the terminal branches of the superior hemorrhoidal artery is achieved by a specific laser device. Usually, no kind of anesthesia is required.

Our prospective study reported the results after 2 years of regular use of HeLP in patients with symptomatic second- to third-grade hemorrhoids with minimal or moderate internal mucosal prolapse.

Patients and Methods

From April 2010 to June 2012, 97 patients underwent the HeLP procedure at the Department of General Surgery, San Camillo Clinic Institute, Brescia, Italy. This study was approved by the internal ethical committee. The written informed consent was obtained by all patients enrolled in the study. All subjects were preoperatively studied through medical history evaluation, routine blood tests, and physical examinations (digital examination and/or anoproctoscopy). The HeLP procedure was proposed only in case of symptomatic second-degree hemorrhoids or third-degree hemorrhoids with minimal or moderate internal mucosal prolapse at preoperative evaluation and failure of conservative treatment. The assessment of the prolapse was made on the basis of digital rectal examination and anoscopy. Defecography was requested in cases of severe prolapse or symptoms of obstructed defecation syndrome (outlet obstruction). The exclusion criteria from the study were younger than 18 or older than 75 years; fourth-degree hemorrhoids and third-degree hemorrhoids with moderate/severe prolapse at preoperative anoproctoscopy; previous surgery for HD; thrombosis of hemorrhoidal cushions; fecal incontinence (Wexner fecal incontinence score >7)[13,14]; obstructed defecation syndrome; previous surgical anastomosis lower than 5 cm from the dental line; anal stenosis, anal fissures, or fistulas; acute inflammatory bowel diseases; and current therapy with anticoagulant drugs. Before surgery, a colonoscopy was performed in all patients to rule out sources of bleeding different from HD—as recommended by the common guidelines for screening of colorectal disease.[15] Goligher classification[15] for hemorrhoids were used for preoperative and postoperative staging purposes.

Surgical Technique and Postoperative Management

All procedures were performed using the HeLP kit from Biolitec AG–CeramOptec (Bonn, Germany). A dedicated 23-mm diameter proctoscope was inserted into the rectum, with the patients in lithotomy position. Through the small window at the proctoscope distal part, the Doppler transducer was used to identify the terminal branches of the superior hemorrhoidal artery, approximately 3 cm above the dentate line. Once the arterial flow was identified, all branches were closed using a laser optic fiber (5 pulses of 1.2 seconds each with a .6-second pause at the power of 13 W) that replaced the Doppler probe in the same small proctoscope window. By the reintroduction of the Doppler transducer, the actual closure of the artery was checked and, if necessary, a new sequence of 2 laser shots was delivered in the same point.

All operations were carried out without general or local anesthesia; conscious sedation was usually unnecessary. Nonsteroidal anti-inflammatory drugs, usually ketorolac, were administered intravenously only on demand; antibiotic prophylaxis was routinely adopted. The HeLP was performed as office procedure. No intestinal preparation was needed; 2 enemas (on the evening before the procedure and in the early morning of the procedure) were administrated. All patients were discharged within a few hours after surgery.

Data on duration of the procedure, perioperative complications, postoperative pain and downgrading of HD, resolution or persistency, and recurrence of disease were prospectively collected. Major bleeding was defined as any bleeding causing hemoglobin reduction of 3 g/dL or more or requiring transfusion of 2 red blood cell units or more.

Postoperative pain was evaluated using a 4-point verbal rating scale (VRS) (none, mild, moderate, and severe). Absence of pain was recorded as zero in the evaluative scale. ''Mild pain'' was attributed to an occasional disturbance not affecting daily life and activities at follow-up; it corresponded to 1 point in the evaluative scale. ''Moderate pain''