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ORIGINAL ARTICLE

French experience in the management of hemorrhoids by HAL™ Doppler

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KEYWORDS

Hemorrhoids;
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Summary

Objective: The goal of this study was to prospectively evaluate the surgical management of hemorrhoids by Doppler-guided hemorrhoidal artery ligation (Doppler HAL™).

Patients and methods: This study was conducted between April 2008 and September 2009. The Doppler HAL™ technique was performed in patients with grades II to IV, irrespective of whether they had previously undergone medical or instrumental management or not. The other demographics of the studied population, the operative and post-operative results as well as the functional outcome at one month and at one year were recorded prospectively and analyzed retrospectively.

Results: Sixty-one consecutive patients (mean age 45 [range 28–85]) underwent Doppler HAL™. The mean duration of operation was 26 minutes [range 18–45]. The average number of ligations per patient was seven. Three patients left the hospital the same day, 51 patients were discharged on day 1 and five patients on day 2. Post-operative mortality was nil. The post-operative morbidity rate was 4.9%. Functional results evaluated at one month and one year showed that initial symptoms had disappeared in more than 78% of patients. The recurrence rate for hemorrhoidal related disease was 10.5% during the first year.

Conclusion: Surgical treatment of hemorrhoids by the Doppler-guided hemorrhoidal artery ligation technique is mini-invasive, with low morbidity, and satisfactory short and medium term functional results. This technique represents a reliable surgical alternative to classical hemorrhoidectomy and hemorrhoidopexy in the therapeutic strategy of hemorrhoidal disease.

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Introduction

Hemorrhoidal disease is very common, involving between 4.4% and 36.4% of the overall population [1]. There are several different options to treat hemorrhoidal disease, combining medical, instrumental and surgical techniques in various therapeutic schemes. In 1995, Morinaga, a Japanese surgeon, developed a technique based on Doppler-guided

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Figure 1. Overall view of the operation table with the hemorrhoidal artery ligation (HAL™) probe (surrounded by the 2 cm ring) and the necessary surgical instruments.

selective ligation of the main hemorrhoidal arteries, branches of the inferior rectal arteries [2]. This technique has gained popularity in Europe, but not in France until recently. Until now, only Faucheron et al. have published on this subject [3–5]. Notwithstanding, this technique seems particularly interesting because of its low morbidity, the possibility of early post-operative rehabilitation, and good functional outcome. For these reasons, we decided to prospectively evaluate this surgical technique in the management of hemorrhoidal disease.

Patients and methods

This study was performed in the surgical unit of HIA Desgenettes between April 3, 2008 and September 24, 2009. The classic indications for Doppler-guided hemorrhoidal artery ligation (Doppler HAL™) were patients with grades II to IV hemorrhoids, whether or not they had already had undergone medical or instrumental treatment for their hemorrhoidal disease. All consecutive patients undergoing Doppler HAL™, performed by four different surgeons in the visceral surgery unit of HIA Desgenettes, in Lyons, France during this same period, were included. After the operation, patients were seen at one month and one year to prospectively evaluate the functional outcome. The demographics, the operative and post-operative results as well as the functional outcomes were analyzed retrospectively.

The instrument used consists of an HAL™ probe, a transparent rectoscope, provided with a centimeter-sized window at its end through which the ligations are performed (Fig. 1). A Doppler transducer, connected to the hand-held Doppler apparatus, is found at the base of this window (Fig. 2). The rectoscope has a light source that illuminates and exposes the rectal surface upon which the surgeon operates. The hand-held apparatus is connected to the Doppler-wave generator (Fig. 3). Only a few, but very specific, instruments are necessary: a needle holder, long bladed scissors, an extracorporeal knot sliding instrument, long dissecting forceps, and 0-caliber polyglycolic acid (Vicryl) absorbable suture material mounted on a half-circle needle.

The patient should have a pre-operative enema. Lithotomy position facilitates the introduction of the previously

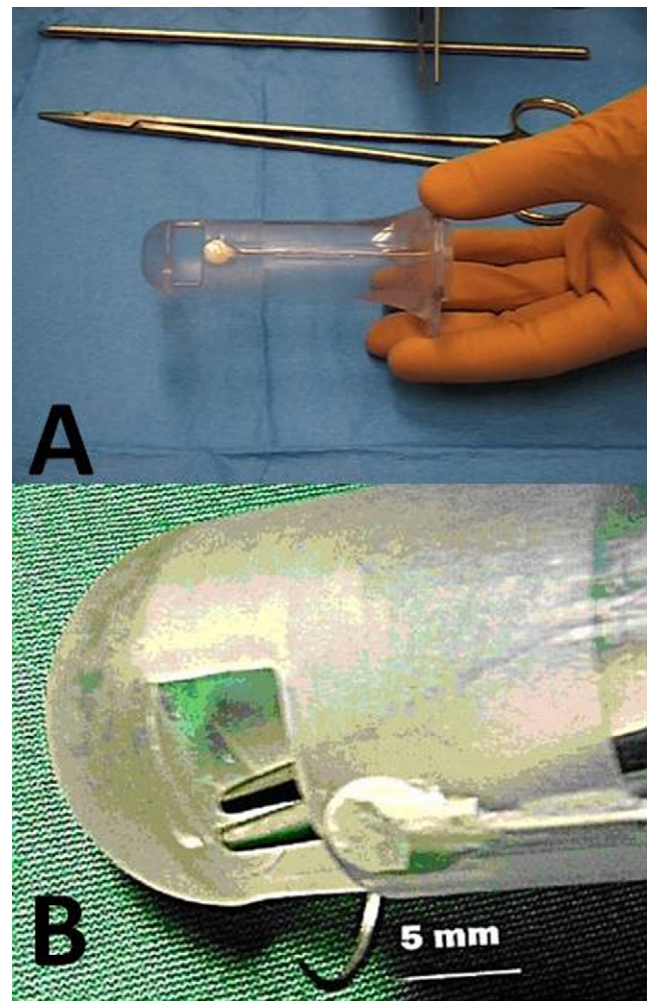


Figure 2. A. Overall view of the transparent rectoscope with the Doppler transducer at its end. B. Detailed view of the extremity of the rectoscope where the centimeter-sized window through which the ligations are accomplished, can be seen.



Figure 3. Doppler-wave generator.

lubricated probe into the anal canal as far as possible. Under these conditions, the window at the end of the probe is located at 6 cm above the pectinate line, easily visible through the transparent probe.

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