

Hemorrhoid Embolization: The Emborrhoid Technique

Vincent Vidal, MD, PhD, discusses the origins and effectiveness of this treatment, along with clinical experience to date.



What are the origins of applying embolization as a therapy for hemorrhoids?

Dr. Vidal: In 1994 and 1998, Prof. E.V. Galkin first described a potential interventional radiology treatment for chronic hemorrhoids complicated by hemorrhage.¹ These two major articles were published in Russian, which limited their audience. Later, a few other published case reports demonstrated the efficiency of embolization of the superior rectal arteries for life-threatening rectal bleeding from various origins. These preliminary studies reported no rectal ischemic complications.

Ten years ago, proctologists developed a new concept of treatment: elective transanal Doppler-guided hemorrhoidal artery ligation (DG-HAL). DG-HAL consists of ligating the terminal branches of the superior rectal artery (SRA) under transanal Doppler guidance.² This treatment is based on the hypothesis that rectal bleeding and pain occur when venous hemorrhoidal pressure reaches a certain threshold. The ligation of the SRA may decrease the arterial flow significantly, leading to a decrease of the venous pressure and of the symptoms.

If DG-HAL was effective in treating hemorrhoid disease, it was feasible that this concept could be compatible with embolization. In 2007, I suggested that arterial occlusion be performed with coils in the terminal branches of the SRA via the endovascular route. It took me a few years of discussion with surgeons and proctologists to obtain my first patients. My colleague, the surgeon Prof. I. Sieleznieff, trusted me and sent me three

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patients who were suffering from severe rectal bleeding and were not suitable for other medical or surgical treatments.³ After treating these three patients, we concluded that coil embolization of the SRA—the so-called *emborrhoid* technique—was technically feasible and appeared to be well tolerated. After this first observation, we began treating patients who were not suitable for medical or surgical treatments, which we call *compassionate patients*.

Do you believe the greatest potential is in patients with contraindications to surgery?

Dr. Vidal: Proctologists have many compassionate patients. But, there are also many other patients who suffer from hemorrhoids but do not complain to physicians because they refuse to have an endorectal treatment. If we can offer a treatment for outpatients without pain, I believe more patients will seek treatment for this condition.

The emborrhoid technique is probably indicated as a first-line treatment in an early stage of the disease (stage II). The sooner hemorrhoids are treated, the fewer complications (such as prolapse) patients will have to face.

If we want to validate the emborrhoid technique, we have to conduct a randomized, prospective, multicenter study to compare emborrhoid versus DG-HAL. We are currently working on this study, and we hope to begin next year.

Additional studies will be needed to evaluate the best indications.

How would you summarize the collective clinical experience to date? How many trials are currently underway, and how many patients are enrolled?

Dr. Vidal: I am not aware whether clinical studies are taking place outside of Russia and France. Unfortunately, Prof. Galkin died last year, and for the moment, I do not know if patients are still being enrolled at his institution. We are waiting for a publication from Prof. Zakharchenko, a proctologist and colleague of Prof. Galkin, about their series of patients.

In France, two studies are taking place. Regarding first-line therapy, there is a feasibility study including 26 patients with a survey for 1 year. We have already finished the enrollment, and the preliminary results will be communicated at CIRSE 2015 in Lisbon. Regarding compassionate therapy, with the team of Prof. Marc Sapoval in Paris, we continue to include patients under compassionate use. We have already enrolled 30 patients, and the results are very promising, as described in the *CardioVascular and Interventional Radiology* publication.⁴

What are the unique challenges of the SRA in terms of coil delivery? What are the ideal characteristics of embolization materials used in this setting?

Dr. Vidal: The emborrhoid technique is technically easy. The inferior mesenteric artery is catheterized using a Simmons catheter. The SRAs are then catheterized with a microcatheter. The anatomy is usually symmetric with a left and right SRA. A posterior branch arising from the left or the right SRA can also give some branches that vascularize hemorrhoids. Our goal is to deliver the coil as far as possible in the SRA. We use 0.018-inch pushable coils flushed with saline, which is safe for the anorectum and cannot lead to ischemia.

The best coils for the SRA range from 2 to 3 mm in diameter.

Our goal is to have no artery remaining below the pubic symphysis after embolization. Very often, we notice anastomoses with inferior and middle rectal arteries. It is still not clear if these anastomoses need to be embolized, especially for the middle rectal artery, which can be as big as the SRA. The results of our current study will help us to understand if these anastomoses lead to recurrence of symptoms.

How is clinical success determined, both periprocedurally and at follow-up? How long must the follow-up period be in order to further the validation of this technique?

Dr. Vidal: Clinical success is defined as a lack of bleeding and/or pain, or insignificant amounts of bleeding and/or pain that is well tolerated by patients. It is very important to explain to the patient that we are not going to remove hemorrhoids—we just treat the symptoms. Patients can experience some residual symptoms such as bleeding without deterioration of their quality of life. We have noticed that, as with DG-HAL, the best results are achieved after 1 month.

If we want to validate the emborrhoid technique, we have to conduct a randomized, prospective, multicenter study to compare emborrhoid versus DG-HAL. We are currently working on this study, and we hope to begin next year.

We will obviously be very interested to find out if foreign centers want to participate in the study. In other cases, interventional radiologists will be able to contact the proctologists at their institution and suggest the emborrhoid technique. They will probably be astonished by the cooperation they will find with proctologists. So many compassionate patients have been waiting for a noninvasive treatment. ■

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