CHAPTER 2

Hemorrhoids

"To inject, to band or to excise?" These were the alternatives for a colorectal surgeon some 50 years ago, when sclerosant injection, rubber band ligation and hemorrhoidectomy were the sole alternatives. In the last half century the management of hemorrhoids has undergone dramatic changes. Just focusing on surgical procedures shows an array of alternatives including not only the Open (Milligan-Morgan), the closed (Ferguson) and the semi-closed (Reis-Neto) manual hemorrhoidectomies but also Laser hemorrhoidectomy, the PPH hemorrhoidopexy, THD dearterialization procedures, Hussein's ligation-anopexy, Farag's ischemic suture and the STARR procedure for 4th degree piles and mucosal prolapse.

It is worth remembering a quote from Professor Goligher in an article entitled "Skepticsm in surgery" (published in Perspectives in Colon and Rectal Surgery in 1990) that "many innovations prove to be in the long-term much less successful than was originally hoped . . . and often turn to be out to be frank failures." [Pescatori 2011] There is much truth in this as it pertains to some of the novel procedures heralded as hemorrhoidal panaceas. Cryotherapy has disappeared because of pain, mucorrhea and sepsis and even stapled hemorrhoidopexy is declining in use as a result of what was reported in the Guidelines of the American Society of Colon and Rectal Surgery as "potentially devastating complications" [Cataldo et al 2005; Senagore 2012]. As a consequence, the PPH device was withdrawn from the American market because of its high cost, concern about serious and even life-threatening complications and a higher hemorrhoid recurrence rate when compared with other more standard surgical techniques [Nisar et al. 2004; Tjandra and Chan 2007; Giordano et al 2009; Faucheron et al 2012].

After many novel procedures designed to reduce postoperative pain and accelerate healing, manual hemorrhoidectomy still remains the gold standard. Since 2004, THD (Doppler-guided dearterialization) seemed the most promising innovation, being non-invasive with both a low complication and recurrence rate accompanied by a relatively low cost. Larger series and longer follow-up are both needed in order to ensure that it is an effective long-term procedure that matches the recurrence and complication rate of manual hemorrhoidectomy. The alternative is the use of the LigaSure hemorrhoidectomy which has been associated with a low complication

rate and which is the most commonly used surgical procedure for hemorrhoids as reported by the Chairmen of the Italian Coloproctology Units [Bruni and Occelli 2006].

My favorite operation is the Ferguson procedure, which carries a low complication rate, the rare risk of bleeding, a high rate of long-term cure and a reported better functional outcome than the Milligan-Morgan hemorrhoidectomy [Johannsson 2013]. Despite this, I tend to tailor the procedure both to the patient and the degree of hemorrhoids where it would not seem logical to carry out a PPH procedure for one or two-quadrant piles with no internal mucosal prolapse or a Farag suture for external hemorrhoids. In one-quarter of my patients I perform more than one procedure in the same case which is an illustrated feature of this book where such tailoring is a matter of experience and judgment. For example, after the excision of two advanced internal and external piles with the Ferguson technique, I prefer a ligation-anopexy in dealing with a third large but mostly internal pile avoiding the risk of an anal stricture. In hemorrhoids like much of proctology, many complications are technically preventable.

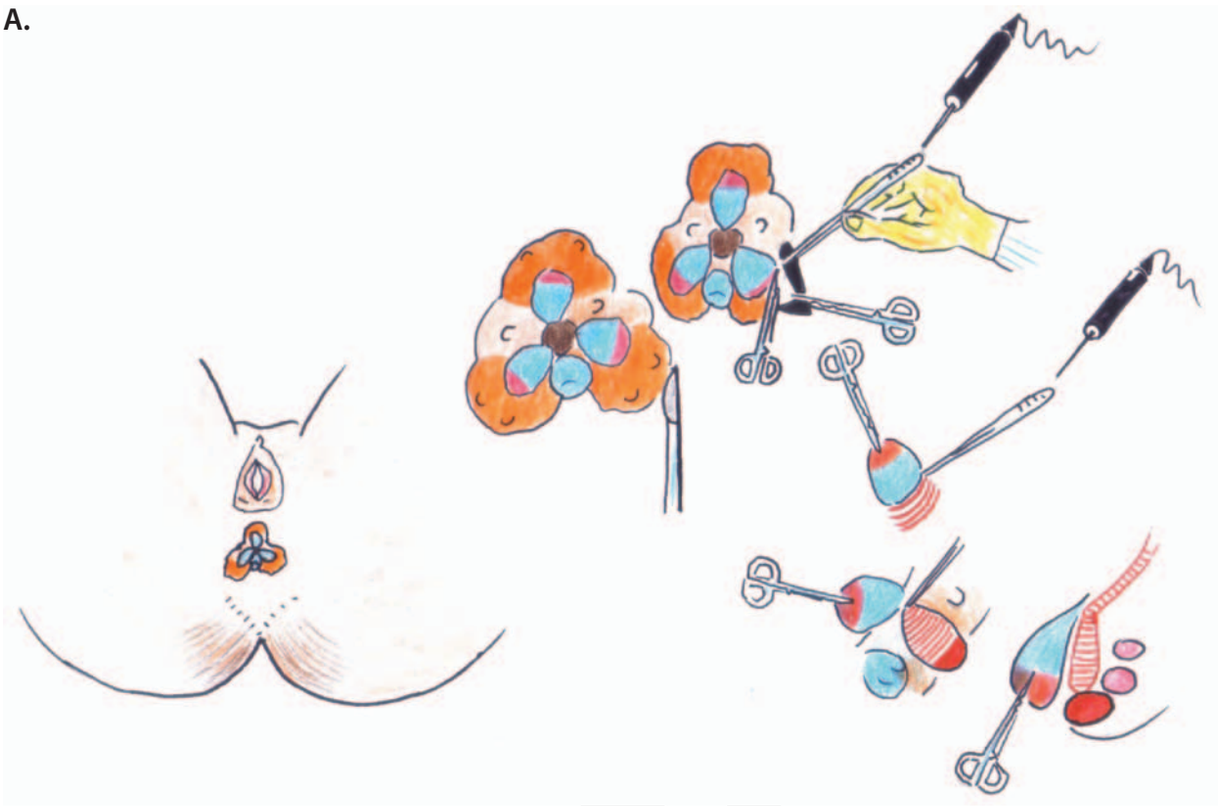
Most patients with hemorrhoids may be treated in a day-care setting even if combined with other anorectal procedures. For example if there is an associated fistula, it is imperative to avoid extensive de-epithelization of the anal canal which, again, would result in a stricture. For these types of cases, closure may be readily provided by a local customized flap as shown in this chapter. Post-hemorrhoidectomy pain may be either prevented or minimized using a combination of glyceryl trinitrate ointment with or without Botulinum toxin injection with each technique chemically reducing internal anal sphincter spasm without incurring significant postoperative fecal leakage [Khubchandani 2002].

Although postoperative bleeding is a serious problem, it is in my experience rare and preventable. I have had 22 severe bleeds after more than 1,000 hemorrhoidectomies performed over 40 years, where I had to re-operate on the patient only twice. One of these cases was handled in the office and the other in the ward, merely suturing a small superficial bleeding area evident in the lower anal canal and verge in both patients. In the other 20 patients, all cases of bleeding stopped by irrigating the rectum with cold water and leaving an inflated Foley catheter balloon *in situ* for between 3-12 hours. Blood transfusion was required in 7 cases. It is worth iterating these results over a prolonged experience to point out to our younger colleagues and some general surgeons, who may attempt to tamponade the rectum with gauze packs or return the patient to the operating theater.

Chapter 2 Hemorrhoids

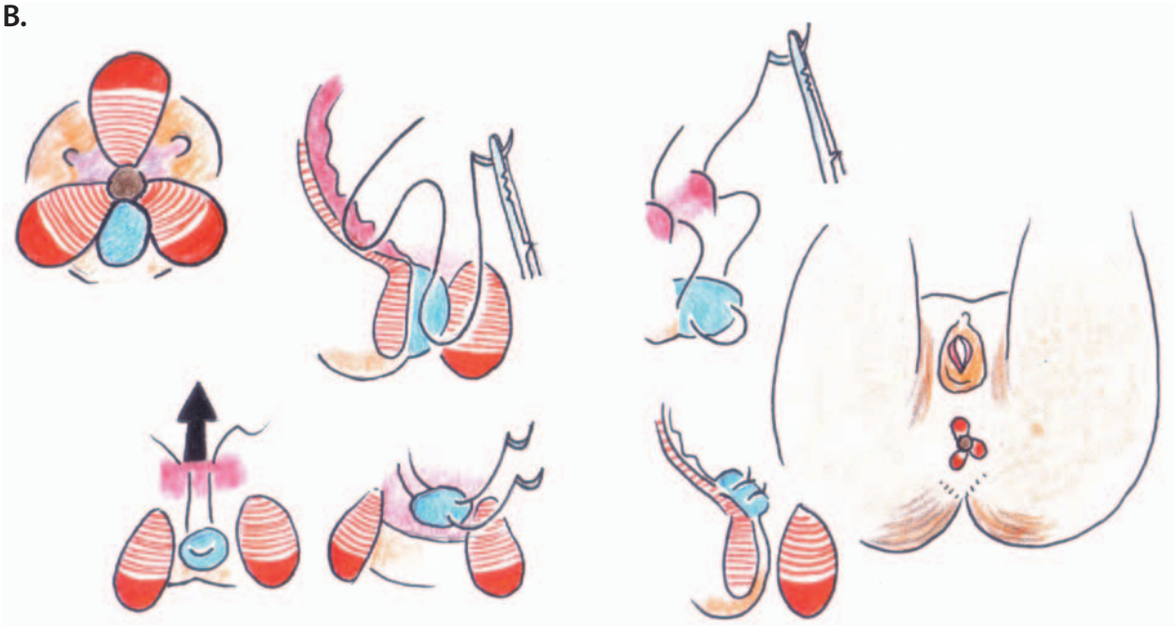
2.1. Milligan-Morgan Hemorrhoidectomy

A.



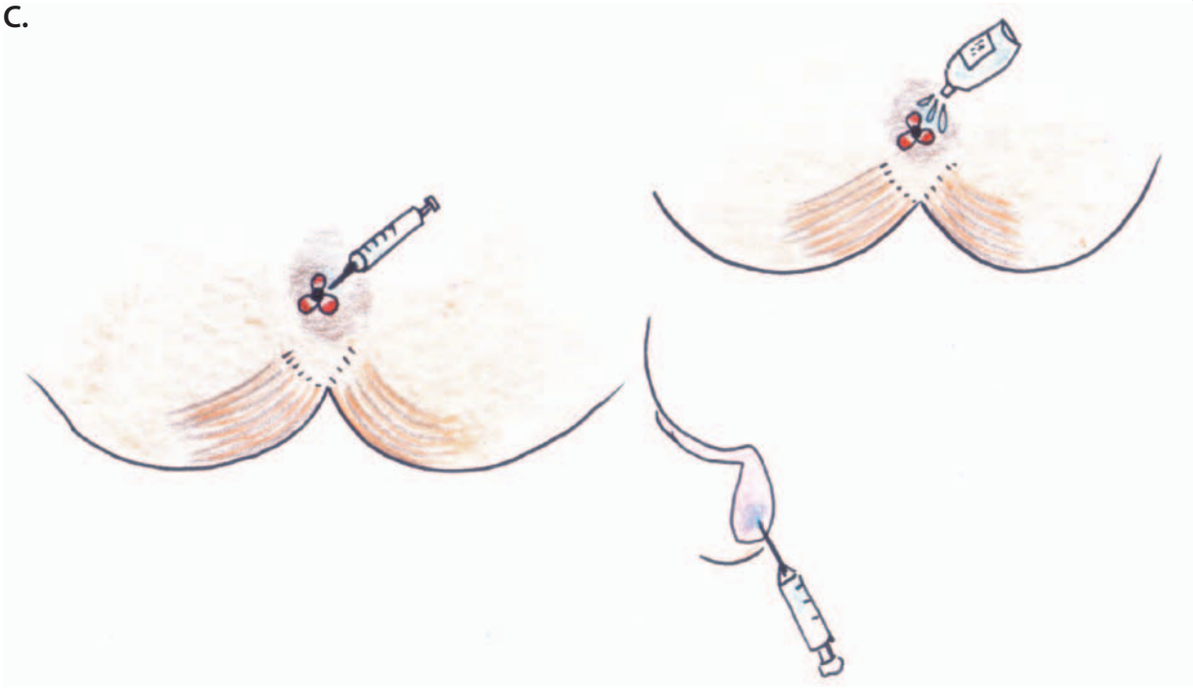
A. 4th degree hemorrhoids with accessory (secondary) pilies. Milligan-Morgan diathermy excisional hemorrhoidectomy with preservation/protection of the internal anal sphincter dissecting the anal cushion from the sphincter musculature.

B.



B. After excision of the main pile complexes with preservation of the anodermal skin bridges, the accessory pile is treated without excision by mucopexy to lift the area rostrally and to reduce the likelihood of postoperative anal stenosis.

C.

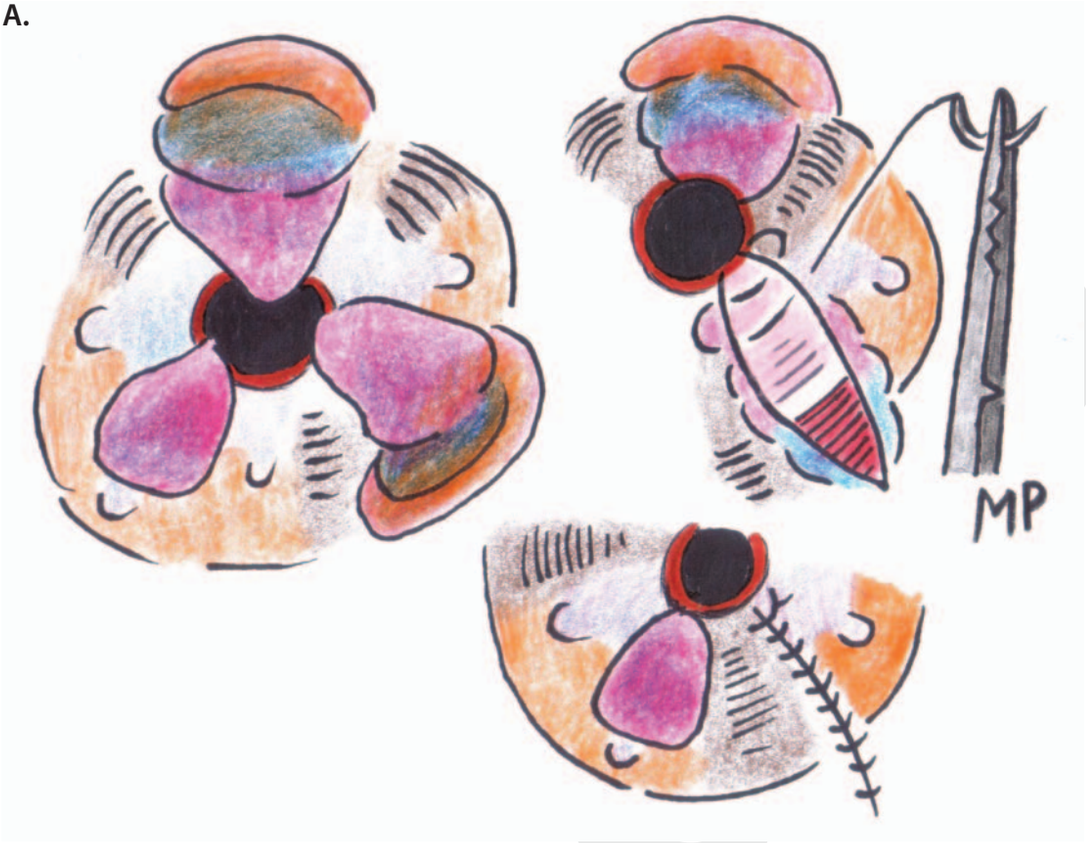


C. Postoperative pain is controlled by intrasphincteric Botulinum toxin injection plus topical glyceryl trinitrate ointment.

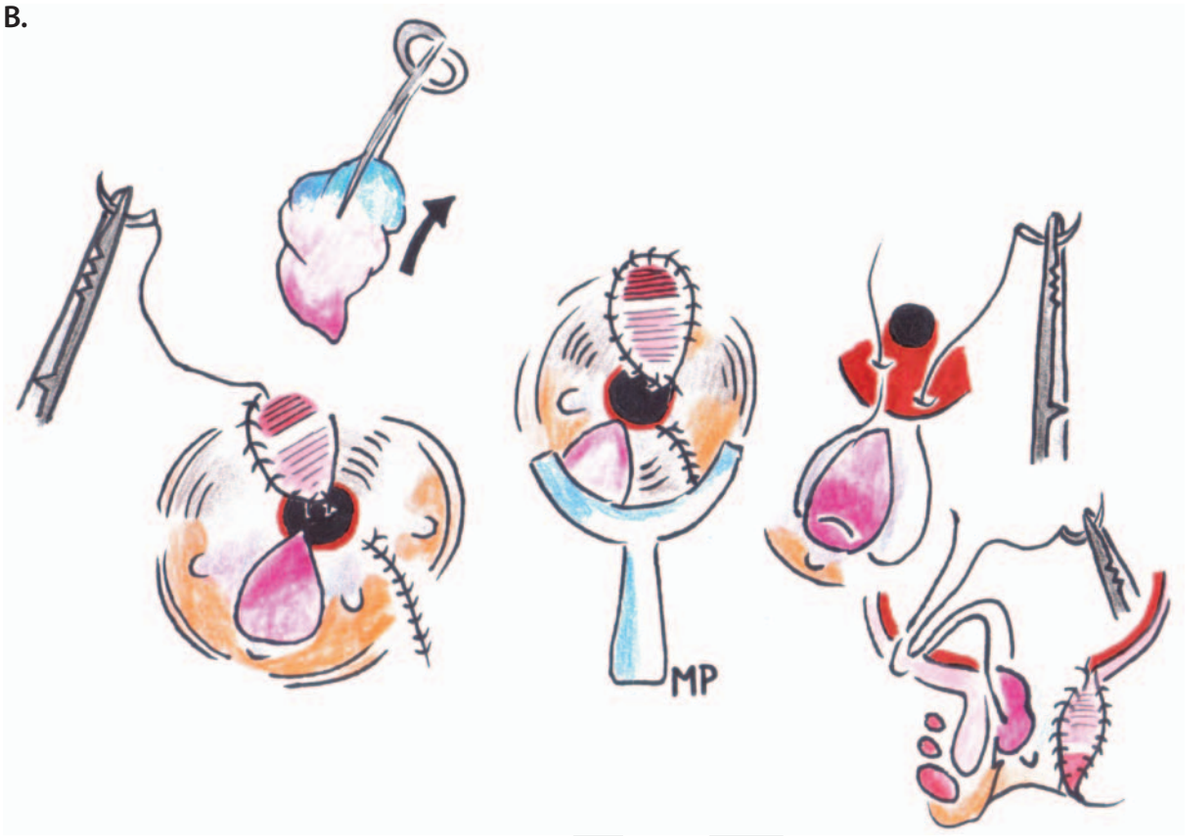
Comment: Indirect contact with the diathermy against the forceps allows dissection with minimal bleeding. When there are secondary hemorrhoids, these may be dealt with by a "U" stitch anchoring the pile to the rectal muscle and re-suturing it with two transverse sutures similar to a Farag procedure. This prevents anal stricture formation and descent of the pile-bearing area, particularly if there is a prior history of straining at stool. Although taught this trick by Sir Alan Parks I have modified the technique by adding the transverse sutures. Hemorrhoidectomy needs to be tailored to the type of pile (internal or external, primary or secondary) as well as to whether there is a risk of anal stricturing or any associated fibrosis of the anal canal, combining open and closed methods based on the prediction of likely outlet problems and supplementing these techniques with hemorrhoidopexy. I will usually perform different procedures in the same anus in about 20% of my patients, most frequently choosing a combination of the Ferguson hemorrhoidectomy with a ligation anopexy.

2.2. Tailored hemorrhoidectomy

A.

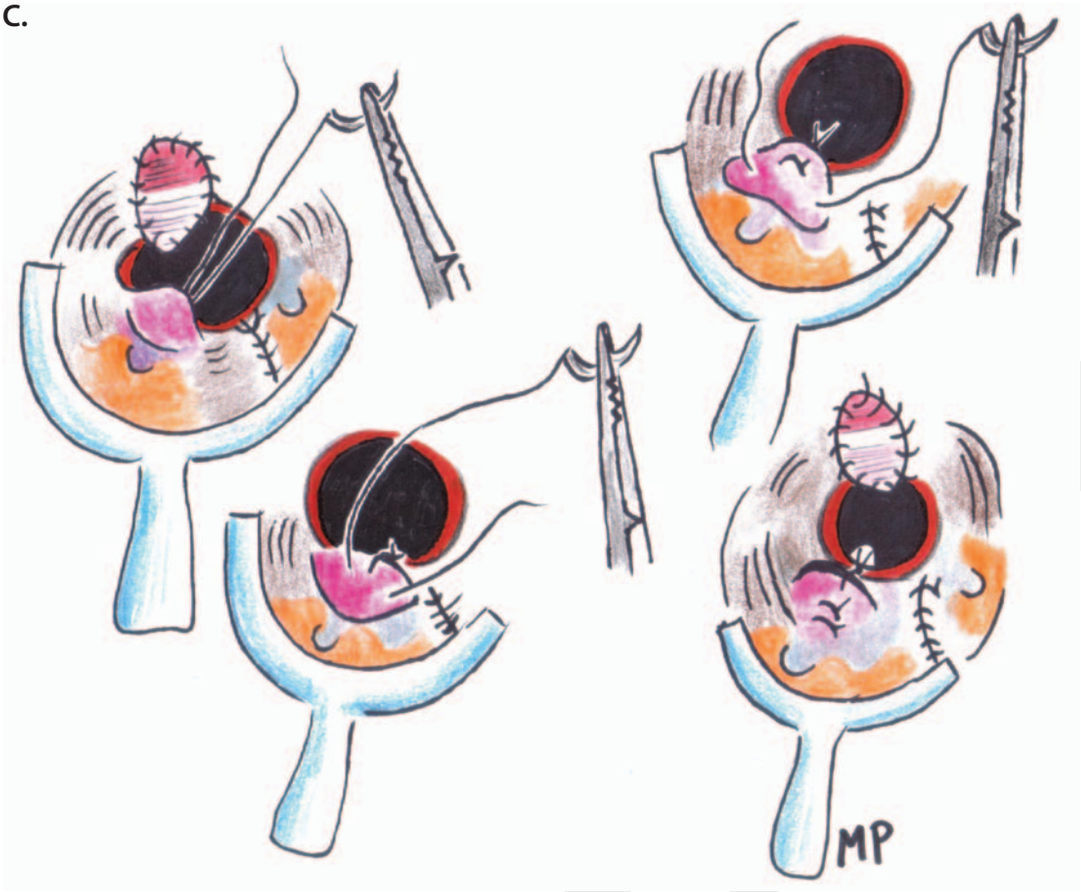


A. In this technique 3 methods are combined to treat extensive prolapsing hemorrhoids and prevent anal stenosis postoperatively. The first component is by Ferguson closed hemorrhoidectomy to the main pile mass.

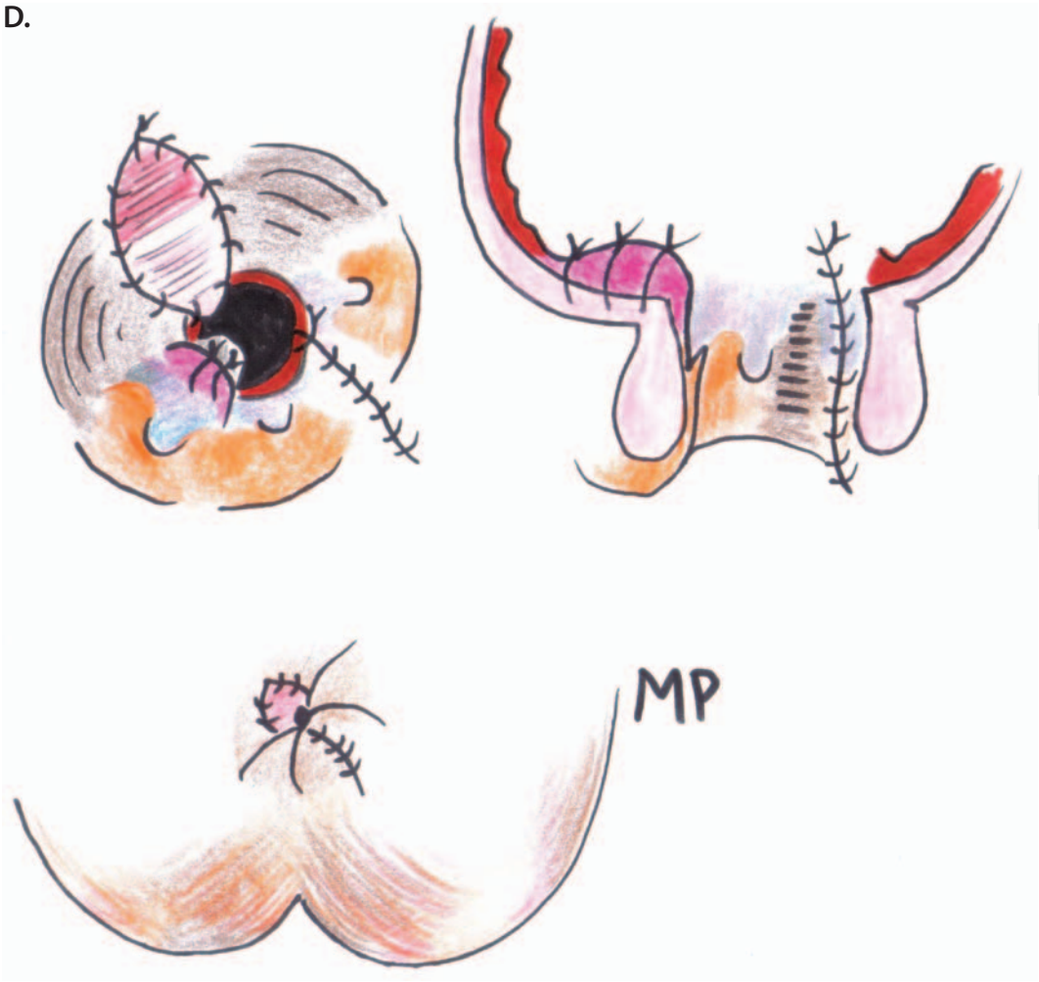


B. Excision of one main pile mass leaving the wound open plus a mucopexy of an accessory pile mass designed to preserve anoderm.

C.



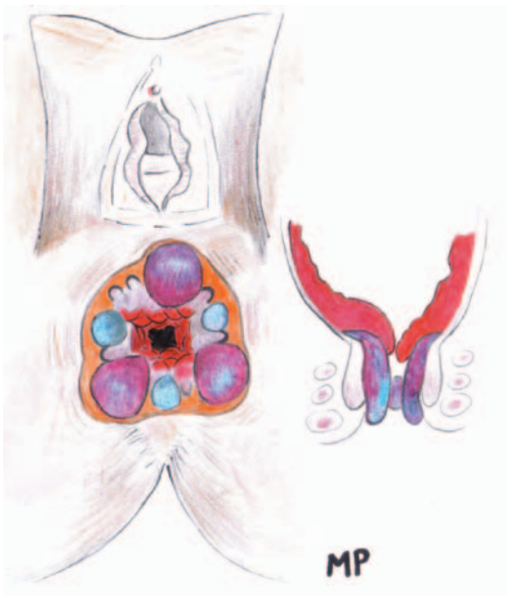
C. Details of anoderm-preserving mucopexy of the accessory pile.

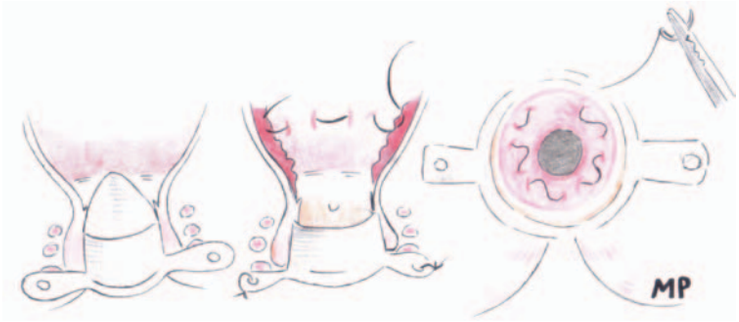


D. Final appearance (internally and externally) of the 3 combined techniques.

2.3. Stapled Hemorrhoidopexy for Circumferential Mucosal Prolapse

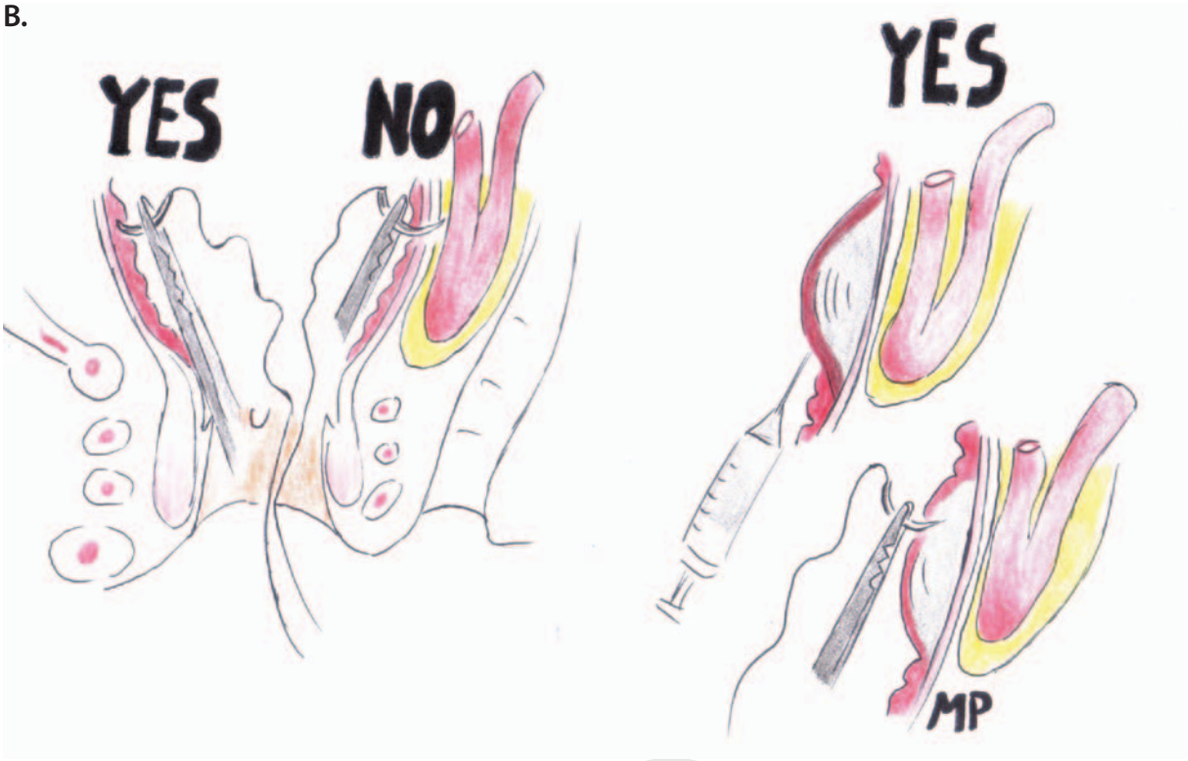
A.





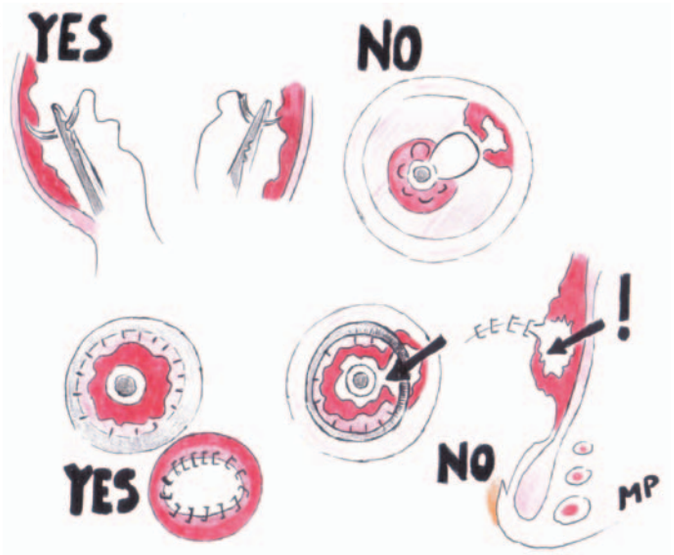
A. Insertion of PPH kit anal dilator and performance of the purse-string suture about 2 cm. above the dentate line.

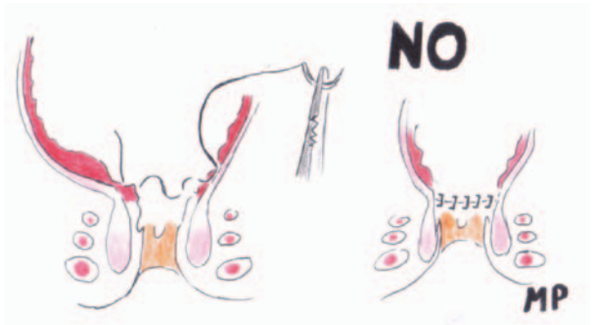
B.



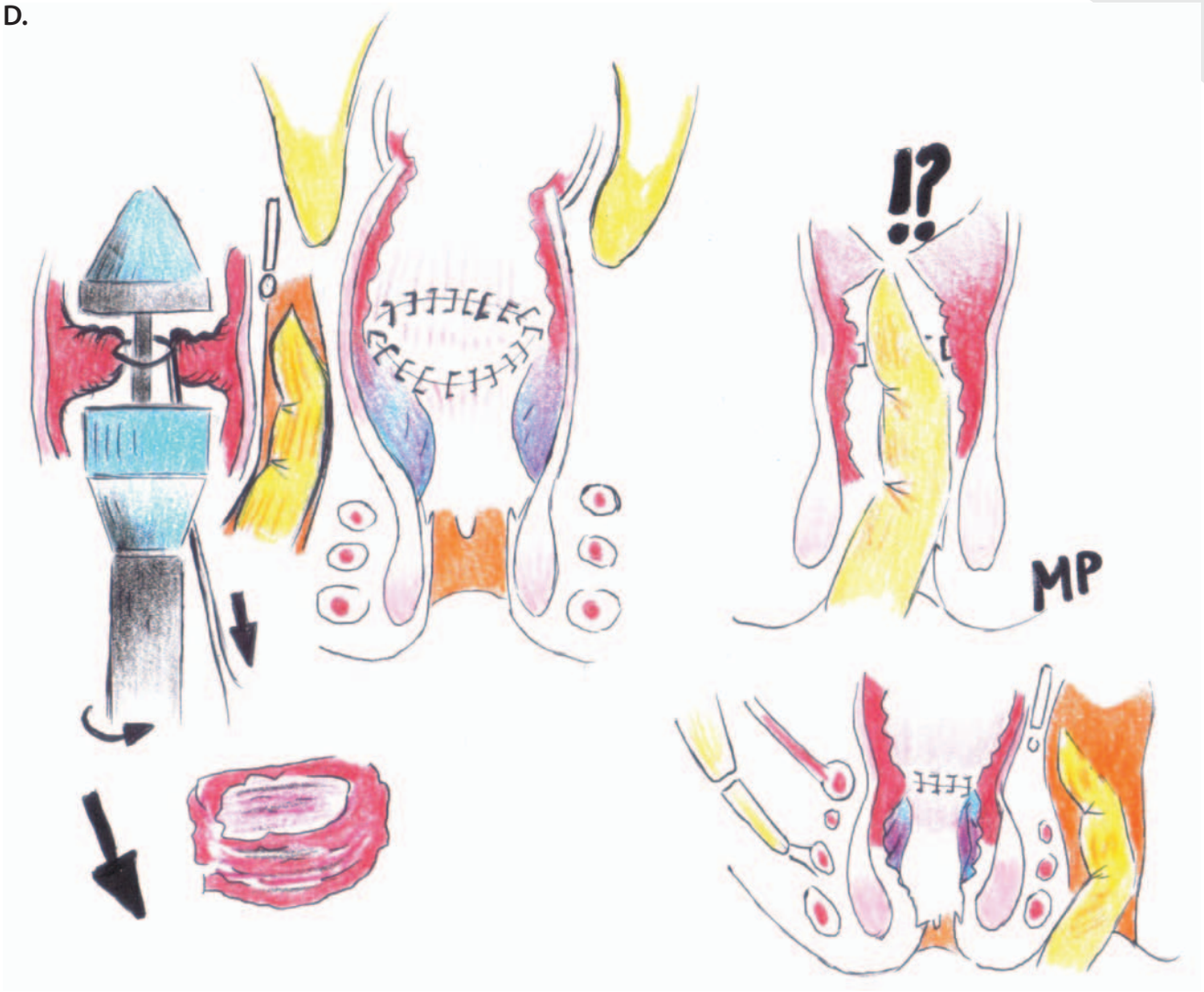
B. The mucosa may be infiltrated avoiding a too deep placement of the purse string suture which can be after staple deployment, a source of proctalgia and which may rarely be associated with inadvertent enteric injury.

C.



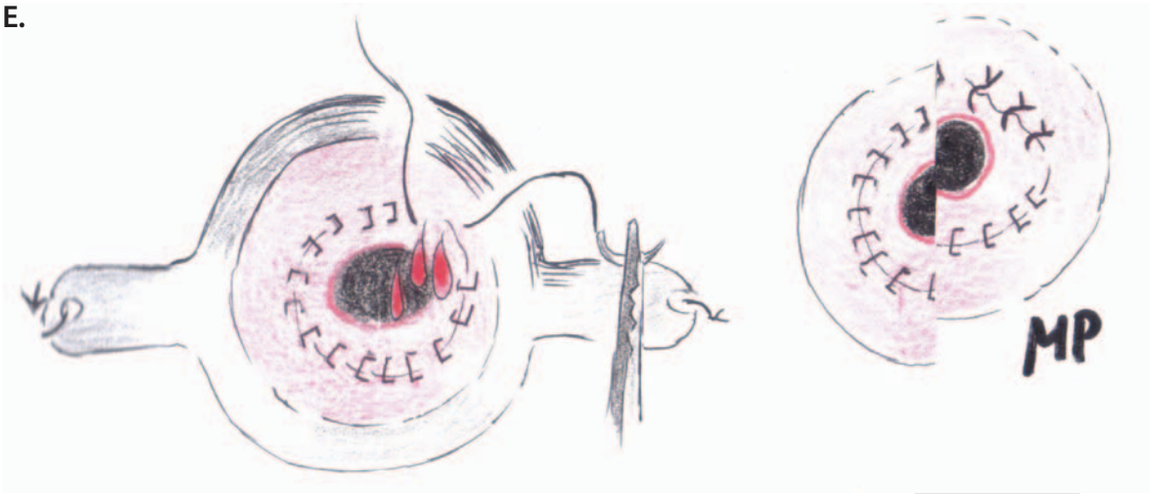


C. The purse string suture must be complete otherwise it may exclude part of the lumen and lead to a "rectal pocket syndrome" which may be a source of proctalgia, fecal accumulation recurrent sepsis and odoriferous discharge.



D. The stapled anastomosis is wide and patent with complete doughnut rings. Digital examination confirms rectal patency and excludes the uncommon complication of rectal obliteration.

E.



E. The staple line is oversewn with a 3/0 vicryl suture to secure hemostasis.

Comment: About one-third of patients presenting with internal and external hemorrhoids will have associated internal mucosal prolapse and it is this patient with circumferential (principal and accessory) hemorrhoidal prolapse who may benefit from a stapled hemorrhoidopexy, provided that there is no significant history of chronic constipation and straining likely to lead to hemorrhoidal recurrence. If strict criteria are followed, the PPH hemorrhoidopexy is suitable for only about 10% of referred cases where meta-analyses have shown a higher recurrence rate when compared with conventional manual hemorrhoidectomies.

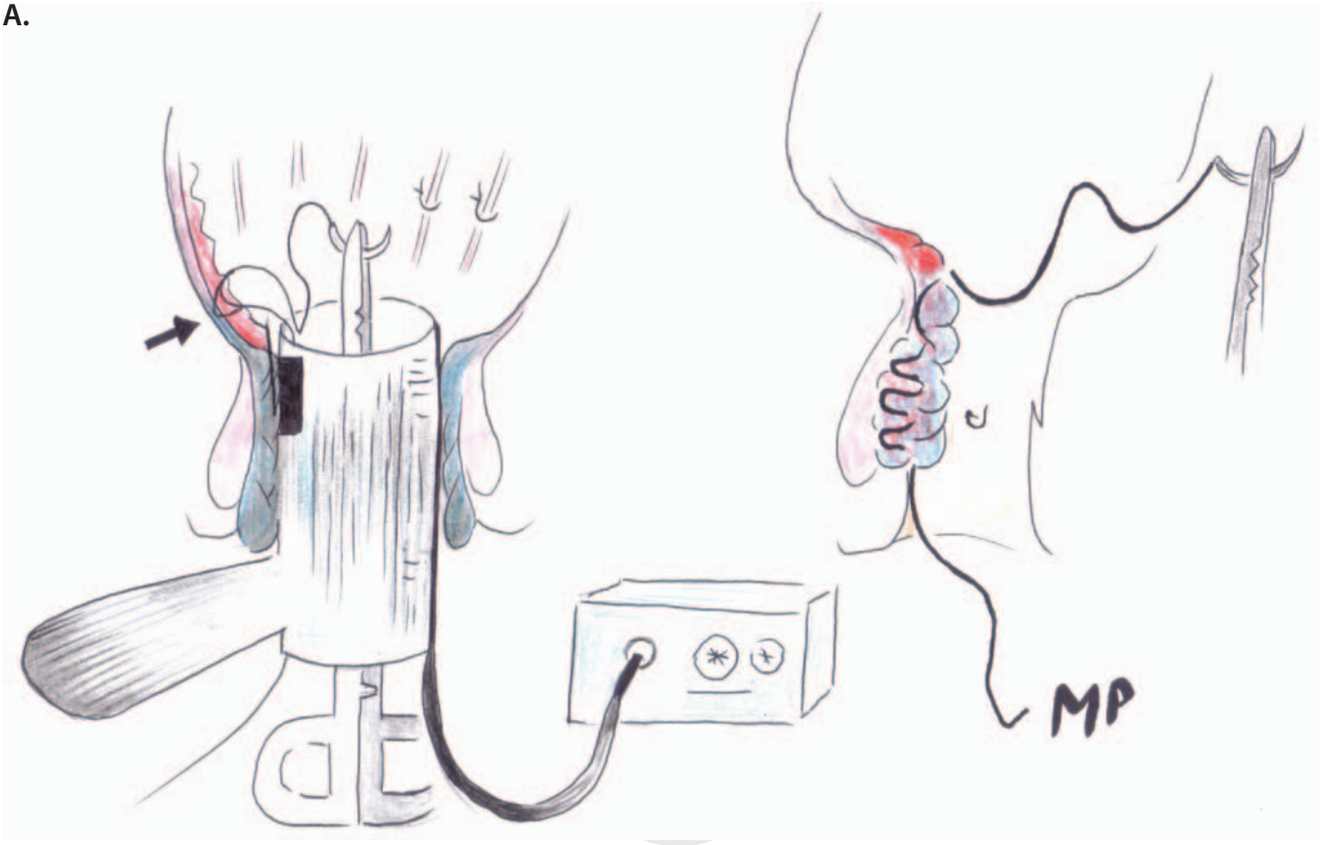
2.4. Ferguson hemorrhoidectomy

Formal excision of the hemorrhoid is followed by suture from the apex of the excision to the distal peripheral skin with preservation of mucocutaneous bridges and prevention of postoperative anal stenosis.

Comment: Note that the limits of the Ferguson hemorrhoidectomy differ from those of a Milligan-Morgan approach. In the Ferguson technique, the dissection is carried over then around the pile as a narrower excision in order to avoid tension with the mucosal suture and subsequent wound dehiscence. With wider incisions, the tension is likely to cause wound dehiscences. The distal apex of the incision has to be extended well out of the anus in order to avoid a "dog ear" which although not a cosmetic concern is more likely to lead to an annoying skin tag sometimes requiring secondary excision. The running suture may be tied at the anorectal ring providing suture strength although with exposure to higher tension so that I may not use this technique for all 3 piles. I prefer rapid to longer-lasting vicryl as recommended by Santhat Nivatvongs of the Mayo Clinic in case of abscess formation. I find that 3/0 or 4/0 Vicryl is associated with less pain than the heavier sutures and I ensure that all hemorrhoidal tissue is examined by a pathologist to exclude associated dysplasia and intra-epithelial neoplasia. Overall, I prefer the Ferguson technique over the Milligan-Morgan technique where it has been shown to be associated with less bleeding and potentially better continence as it resurfaces the anal canal. It is accepted that the down-side of this approach is a 20% risk of wound dehiscence even in the best of hands.

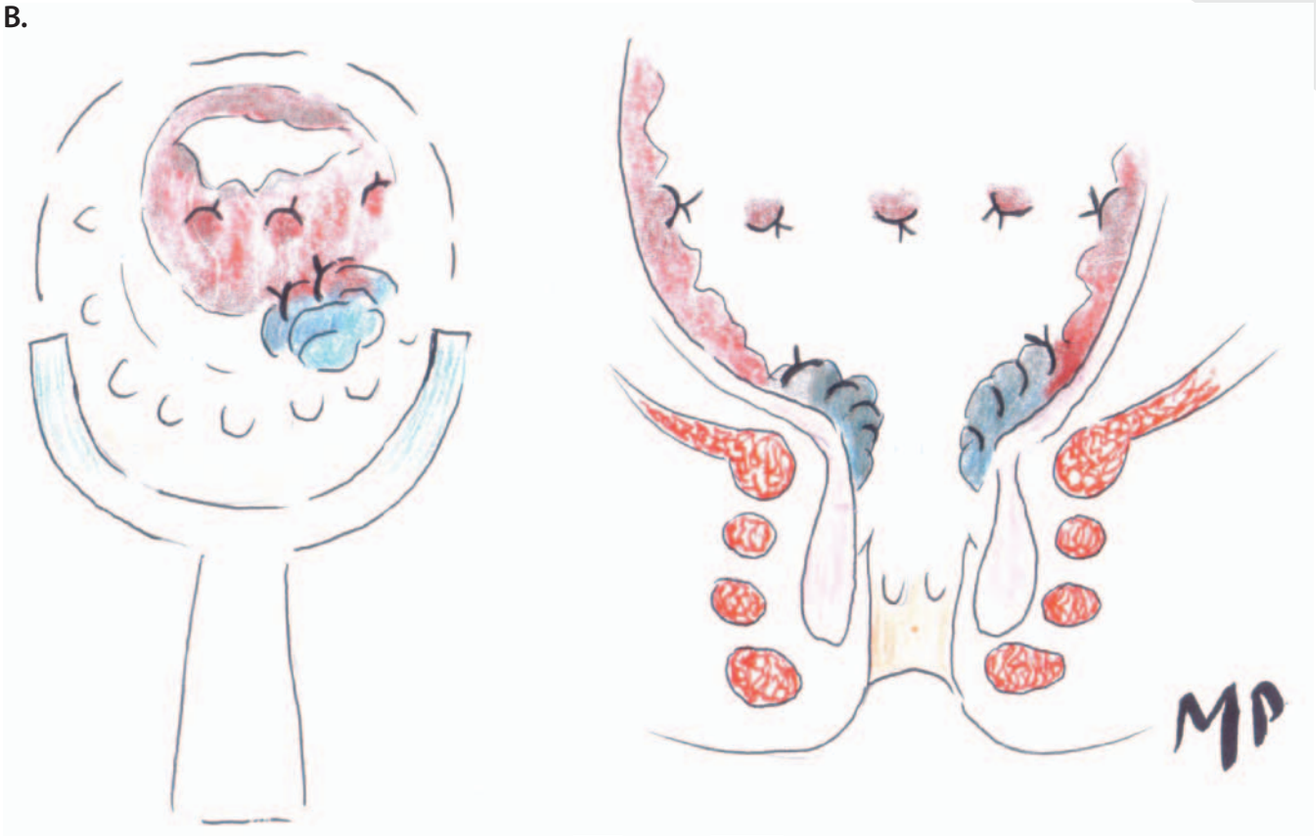
2.5. Doppler-guided hemorrhoidal dearterialization (THD) with mucopexy

A.



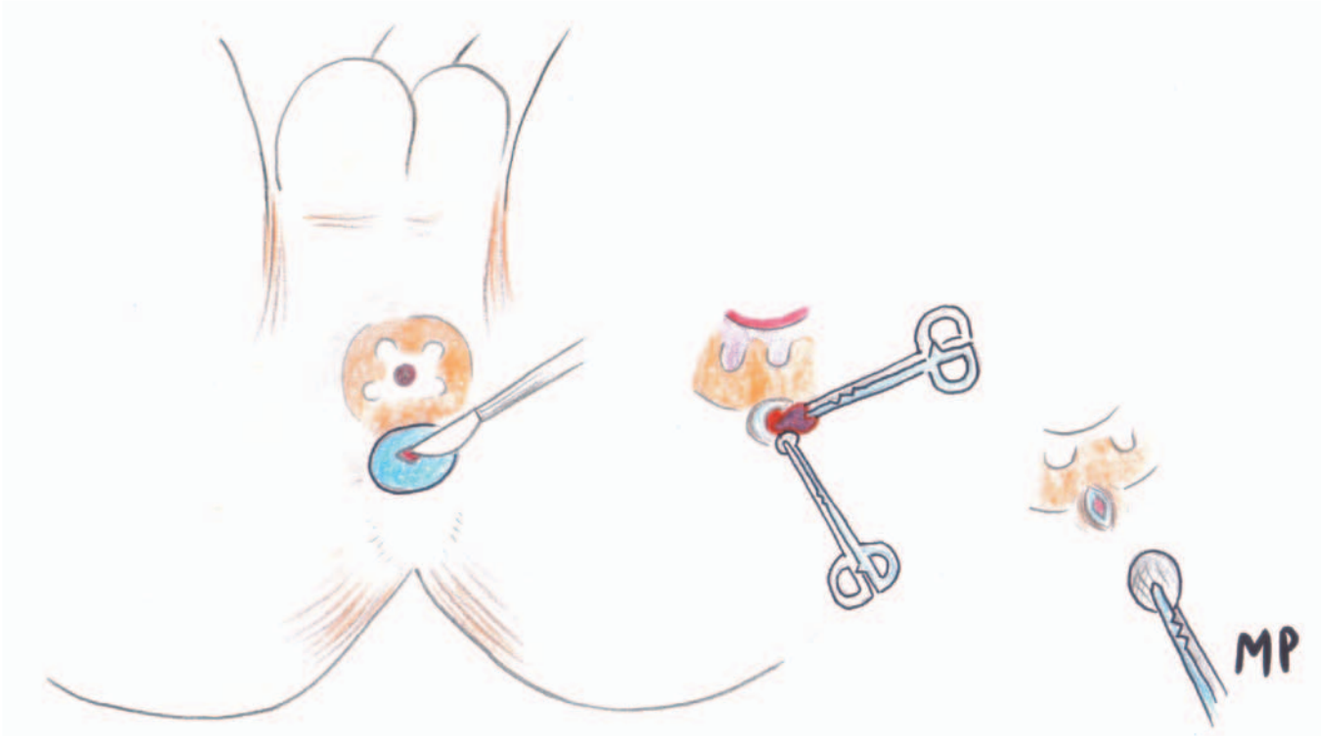
A. Suture transfixion is performed under Doppler guidance to obliterate the vascular signal.

B.



B. Usually 6-8 ligations are performed (final appearance)

2.6. Office proctology : Evacuation of a thrombosed external pile



This procedure is performed early after the event under local anesthesia with evacuation and excision of the thrombus.