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INVITED COMMENT

Tips and tricks: hemorrhoidectomy with LigaSure™

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The search of the most effective and less painful technique for the treatment of hemorrhoids is still a major concern for colorectal surgeons. The technique of LigaSure™ hemorrhoidectomy is just a new method to perform the classic operation described by Milligan and Morgan more than 70 years ago. This kind of surgical option still plays a significant role in the treatment of hemorrhoids, particularly for IV degree hemorrhoids [1], and is still considered the most effective treatment in term of hemorrhoid relapse [2].

Although this technique is considered "invasive" compared to other less painful methods [3, 4], it has been demonstrated to improve significantly postoperative pain, bleeding and, consequently, in-hospital stay compared to traditional diathermy Milligan–Morgan excision [5]. Besides the advantages for the patients, I would like to point out the major advantages for the surgeon. The possibility to perform a virtually bloodless operation makes the operation easier, quicker and safer thus justifying the increased cost of the LigaSure™ device compared to diathermy.

The technique here described by Gianni Milito, one of the Italian pioneers of this surgery, is a detailed step-by-step description of the operation; however, it describes an ideal 3-pedicle hemorrhoidectomy which unfortunately is not the rule in our operating theatre. First of all I like to would add something about patient selection. Patients with congenital, acquired or drug-induced coagulative defects are good candidates for this technique which ensures a safe sealing of the hemorrhoid vessels. Even recurrent hemorrhoids or cases with one or two sides prolapsing hemorrhoids can be effectively treated with this technique, even in an ambulatory setting under local anesthesia. In this case, the prolapsing hemorrhoids are pulled out and its excision is performed as described by Milito but without the need of an anal dilator.

I have also had some positive experience of this technique in some AIDS patients with bleeding IV degree hemorrhoids without complications.

The forceps have recently been improved. The old device has been abandoned in favor of the most practice, effective and ergonomic forceps (LigaSure Precise™ mod 1200LS, Valleylab, Tyco Healthcare group LP, USA). This new devise has short and slim jaws which facilitate hemorrhoids dissection from the internal anal sphincter and further limiting the extent of thermal injury to just 1 mm.

For completeness I would add that a similar operation could be performed using ultrasounds (Ultracision, Ethicon EndoSurgery) instead of radiofrequency energy. The procedure is just a little bit quicker (mainly because it is not necessary to transect the line of coagulum), but the temperature developed during the excision is higher than in radiofrequency and a painful edema of the residual skin tags is the rule.

It could have been interesting to know Milito's experience in case of intraoperative or postoperative bleeding. In case of uncontrolled bleeding one can prepare a classic diathermy on the operating setting, use a re-absorbable stitch or try again the LigaSure™ device. In the rare cases of persistent bleeding after repeated application of the LigaSure device, I put a re-absorbable stitch at the bleeding site. Another point to be stressed could be what to do in case of postoperative bleeding. An emergency re-operation, sometime during the night after the operation, is an

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unpleasant experience for the patients and the surgeons too and normally any attempt is made to prevent it. Its management is not different from other post-hemorrhoidectomy bleeding: a conservative treatment could be adopted with the use of i.v procoagulants and local absorbable hemostat cellulose (Tabotamp, Johnson & Johnson, USA), but a surgical revision is mandatory if hemoglobin level falls down under 8 g/l. A hemoglobin level more than 8g/l is still acceptable if the bleeding is stopped but the patient cannot be discharged until a clear improvement and first defecation occur.

Finally, the intensive aftercare protocol adopted by Milito clearly gives evidence about his concern on post-operative pain. In fact, although less painful than diathermy operation, LigaSure^{TM} hemorrhoidectomy is painful in any case because of the opened wounds created in a very sensitive area like the anoderm. Besides classic pain killers, Milito suggests the use of glycerin trinitrate ointment. This has been indicated in a recent randomized controlled trial [6] based on the "opinion" that post-hemorrhoidectomy pain is due to sphincter spasm; furthermore, he suggests the use of metronidazole supposing that postoperative pain is due to infection at the site of anal wounds. The utility of this antibiotic-based approach was suggested in 1998 [6] but has not be confirmed in a recent randomized controlled trial [7], although topical application of metronidazole ointment seems to reduce postoperative pain [8].

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