Effective treatment of haemorrhoids: early complication and late results after 150 consecutive stapled haemorrhoidectomies

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BACKGROUND*: Haemorrhoidectomy according to Longo potentially reduces post-operative pain and allows an early return to work. The aim of this study was to evaluate the efficacy of the technique, the early and especially late complications, and recurrences, in 150 patients.*
METHODS: *Between January 2005 and December 2006, we performed 150 consecutive haemorrhoidectomies with the Longo technique: 82 for third degree haemorrhoids and 68 for fourth degree haemorrhoids. The mean age of patients was 42 years. Every patient had a pre-operative proctoscopy and endoscopy. KIT PPH01 (Ethicon Endo Surgery) was used. We evaluated the length of the operation, the post-operative pain, the early and late complications, and the recurrence of the disease. The mean follow up was 52 months (range 36-72).*
RESULTS: *There was no mortality. The mean length of the operation was 25 minutes with a range of 15 to 45 minutes. Pain, evaluated using the V.A.S. scale, was very light in 114 patients (V.A.S. 2,1) and light in 36 (V.A.S. 3,2). Only 11 (7.5%) patients took painkillers, on demand, for a week after discharge from hospital and 2 patients (1,3%) for more than one month. Early complications (6.6%) were: 5 bleeding (2 after seven days), 4 acute urinary retentions, 1 external haemorrhoid thrombosis and 1 haematoma of the rectus wall. Mean Hospital stay was 2.1 days. Late complications (10%) were: 5 "faecal urgency" which disappeared after six months, 6 moderate asymptomatic strictures, and 4 persistent skin tags. There were 8 recurrences (5,1%), 2 for haemorrhoids of grade 3 e 6 for haemorrhoids of grade 4. All the recurrences appeared within the first 24 months.*
CONCLUSION: *The stapled procedure according to Longo is an effective treatment for haemorrhoids. The results for post-operative pain and early return to work are very good. However, special care for haemostasis is essential in order to avoid bleeding. An effective surgical technique prevents late complications, but results after long term follow up show a not insignificant percentage of recurrences that appeared expecially in the fourth degree haemorrhoids. Therefore a careful pre-operative exclusion of those patients with a prominent prolax is necessary.*

KEY WORDS: Complication, Recurrence, Stapled haemorrhoidectomy.

Introduction

The haemorrhoidal condition affects 60% of the US population and about 4% of US citizens require surgery for it [1],while in Italy 1 milion new cases a year are reported (2% of the populations) [2]. The most common technique in the West remains that of Milligan Morgan [3], entailing an excision of the haemorrhoid where more bridgings of the cutaneous mucosa must be preserved. The problems with this technique are well known, in particular: post-surgical pain, long recovery time, and possible damage to the sphincter [4,5]. Alternative techniques have therefore been proposed [6,7]. The most promising has proved to be that of Longo [8] and is based on the physio-pathological procedure that corrects the prolapse of the mucosa through the interruption of the terminal branches of the superior haemorrhoidal artery

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with an excision made with a circular stapler of a portion of mucosa comprising the rectal ampolla and the anal mucosa.
The value of this technique is supported by various studies [9-11], which have demonstrated a reduction in post-operative pain and an early recovery when compared with the Milligan Morgan technique. Nevertheless, this procedure has received criticism for the occasional occurrence of severe complications such as intestinal obstruction [12] and sepsis 13 which are related to poor surgical execution. Moreover, some surgeons report problems with the sphincter function (14) after mucosectomy even though specific studies have excluded functional damage with this procedure [15]. In order to make this technique work, a lengthy follow up period is necessary [16]. The purpose of our study was to evaluate the effects of Longo's procedure in 150 consecutive cases with a long follow up.

Patients and methods

From January 2005 to December 2006, we performed 150 consecutive haemorrhoidectomies with the Longo technique. 82 patients had third degree haemorrhoids, 68 patients had fourth degree haemorrhoids. 100% of patients reported anal discomfort, 75% experienced bleeding, 15% had itchiness, and 11% had pain. Every patient had a pre-operative proctoscopy and endoscopy. 127 patients underwent epidural anaesthesia, and the remaining 23 general anaesthesia. Patients with anal fistulas and anal fissures or clinical condition that impaired manual reduction of prolapse were excluded from this study.
KIT PPH01 (Ethicon Endo Surgery) was used. The first step was a gentle and progressive reduction of the prolapse with a dedicated tool. This was followed by a purse-string suture made with Prolene 0 to achieve a muco-mucosa anastomosis at least 4 centimetres above the pectinate line. The tool was held closed for one minute following the execution of the anastomosis and then routinely we inserted a few additional stitches in order to prevent bleeding. A Foley catheter was inserted for 6 hours. We recorded the length of operation, the post-operative pain, (V.A.S. score), the recovery time, the early and late complications, the return to work and the recurrences. Follow-up was at 2 weeks, 2 months, 6 months and every 6 months. Mean follow-up was 52 months (range 36-72 months).

Results

Onehundred fifty patients underwent haemorrhoidectomy with the Longo technique: 67 men and 83 females. The mean age was 42 years with a range of 25 years to 72 years. The mean length of the operation was 25 minutes, with a range of 15 to 45 minutes. No mortality was reported. The mean stay in the hospital was 2.1 days with a range of 1 to 12 days. Early complications that occurred in 6.6% of cases were: 5 bleeding, 4 acute urinary retentions, 1 external haemorrhoid thrombosis and 1 haematoma of the rectal wall. The 3 early bleedings, which occurred within the first 12 hours, required surgical repair with stitches at the anastomotic line but no blood transfusions. The two late bleeding, which appeared 7 days after the operation, were due to a partial detachment of the perianastomotic mucosa. This event necessitated a re-operation with blood transfusions. Acute retention of urine occurred after epidural anaesthesia in 4 patients with prostatic hypertrophy, in 3 patients the urinary catheter remained non longer than 24 hours, and in one no longer than 76 hours.
The haematoma of the rectal wall necessitated the surgical insertion of a drain. Resulting pain was very light in 114 patients (VAS score 2.1) and light in 56 (VAS score 3.2). Only 11 patients (7,5%) took occasional painkillers for a week after being discharged from the hospital and 2 patients (1.3%) for 6 months for an unspecific reaction to the stapler resolved after removing the grafts. The return to full activity had a mean of 1.9 weeks with a range of 0.3 to 3 weeks.
During the follow up, no functional alterations were evident and not one patient had gas, liquid or solid incontinence. Late complications (10%) included 5 patients with "faecal urgency", which disappeared without treatment after 6 months, 6 patients with moderate asymptomatic strictures, and 4 patients with persistent skin tags. We reported 8 recurrences (5.1%), 6 in patients with fourth degree haemorrhoids, all appearing within 24 months from surgery.

Discussion

The stapled haemorrhoidectomy is a new technique which it preserves the anatomy of the anal canal and obtains a reduction in the mucosal prolapse through an anopexy which occurs due to an interruption of the blood flow to the haemorrhoidal stalk. The advantages of this technique are well known, especially with respect to post-operative pain and an early return to normal working activity [17-20]. More controversial are the long term results [21, 22].
In our study, the incidence of post-operative pain has been very small: 72% of patients having a very light pain (VAS score 2,1) and 28% light (VAS score 3,2). The reduction in post-operative pain is explained by the locatin of the anastomosis made 4 centimeters above the pectinate line, which spares the sensitive nerve endings of the anus. Only 11 patients needed painkiller for a week and 2 for 6 month after the surgery. For this reason, the post-operative stay in hospital was short (a mean of 2.1 days), and likewise there was a short

time for complete recovery. The length of the operation is no different from traditional techniques, but it is important to note that each step of the operation and the haemostatic procedures must be carefully performed (22, 23).

The incidence of early complications has been 6.6%, with bleeding being the most frequent. Usually bleeding appears in the first 12 hours but it easy to control with revised surgery. In this study, we found 3 cases of early bleeding from the anastomotic line even when, as described, we kept the tool closed for one minute after the execution of the anastomosis and, as a matter of routine, inserted a few additional stitches of haemostasis at the end of the operation.

Thus the Longo procedure, although useful, does not preclude possible bleeding complications. That is why we prefer to dismiss the patient the day after surgery even though there are studies which report that this operation can be performed in day surgery [24]. In the case of bleeding, we advise an early re-operation in order to avoid more serious complications such as haematoma of the rectal wall which occurred in one patient 2 days after the operation and necessitated the insertion of a drain. In the case of the late bleeding after seven days, this was due to a detachment of the mucosa with a serious loss of blood that needed a transfusion and a re-operation. This is a rare but serious complication and therefore the patient should be fully informed.

We are also concerned that some severe complications occur due to poor surgical execution [25, 26]. External haemorrhoid thrombosis occurred in one patient, this rare complication can occur because the operation modifies the arterious vascolarization and doesn't modify the venous return [27]. In short the studies have demonstrate the advantages of Longo's technique in terms of less post operative pain and a quicker return to work, while in terms of early complications, such as bleeding and thrombosis and the length of surgery, there are not significant differences [28, 29].

It is important to evaluate more long term results. In our study, late complications had an incidence of 10%: 6 cases of faecal urgency that were resolved within six months of the operation without any therapy. Follow up at 52 months (median) showed no functional alterations in the sphincter and a good continence in all our patients, because the technique does not interfere with ano-rectal functions [30]. We suggest a gentle and progressive reduction of the prolapse with the circular anal dilatator and so we prefer to avoid this operation in patients with a previous fibrotic reaction that may impair complete manual reduction.

In the follow up, we observed 6 cases of moderate stenosis but this was completely asymptomatic. In fact, the making of the purse-string suture is a very critical stage of the technique; it is necessary to include only the mucosa at a correct distance from the pectinate line. In 4 patients there were persistent skin tags that represented a no functional problem. Incidence of persisten post-operative pain vary between others from 1.6% up to 30% with no apparent explanation [31, 32]. In our experience two cases found an abnormal reaction of the suture causing persistent pain which disappeared after removal of the staples. The problem is reported elsewhere [33] and, in our opinion, this cause should always be suspected whenever persistent pain occurs after a correct surgery.

We report 8 recurrences (5.%), both appearing within 24 months of the operation. Other studies also report a higher incidence of recurrence in fourth degree haemorrhoids [34], probably due to the more difficult inclusion of the prolaxed mucosa in the purse-string suture. With respect to recurrence there are differing opinions: studies with lengthy follow-ups do not seem to show a higher incidence of recurrence using the Longo technique when compared that of Milligan Morgan [35, 36]. A long term follow up has developed to evaluate a long term results. In our experience patients with fourth degree haemorrhoids have a higher percentage incidence (9,8%) of recurrencies when compared with midle (12 months) term follow up (3,2%). It is important to remember that all the recurrences appeared within 24 months after surgery and this should be at least the follow up time after a haemorrhoidecomy according to Longo.

In fact, the long term results differ according to the grade of the haemorrhoid. As well as 22% of recurrencies in patients with 4 degree haemorrhoids, there are studies which report recurrences of 6% in 3 degree haemorrhoids [38]. Also in our study a different percentage of recurrence was evident. In fact, after surgery for 3 degree haemorrhoids the percentage recurrence was 2.3% while the percentage of recurrence in 4 degree haemorrhoid was 9.8%.

In any case, many other studies demonstrate a higher incidence of recurrence for 4 degree haemorrhoid whether treated with staples or with Milligan-Morgan technique [39, 40]. Also in case of recurrence a new operation may be adviseable [41]. While some authors suggest a more aggressive approach to haemorrhoid of grade IV as indicated by stapled transanal rectal resection technique[42]

Conclusions

Haemorrhoidectomy according to Longo represents a valid method for the cure of haemorrhoid disease. In our study of 150 cases, the results are very good concerning post-operative pain and an early return to work. The incidence of early and late complications is limited and the sphincter function is not damaged by the operation.

The good results of the procedure derive from the care-

ful application of the technique. The anal dilatation, the purse-string suture, and the accurate haemostasis are the critical points. Results after a mean follow-up of 52 months show that the recurrences (5,1%) appeared within 24 month from surgery, and are especially related with fourth degree haemorrhoids. It is necessary, therefore, to inform patients with fourth degree haemorrhoid about the higher incidence of recurrences.
Further study should suggest whether Longo procedure is indicate for 4 degree haemorrhoids.

Riassunto

INTRODUZIONE: La mucoprolassectomia sec. Longo potenzialmente è in grado di ridurre il dolore post-operatorio e di facilitare un precoce ritorno all'attività lavorativa. Scopo dello studio è stato quello di valutare l'efficacia della tecnica, le complicanze precoci e tardive e le recidive su un campione di 150 pazienti operati consecutivamente.
METODI: Tra il gennaio 2005 e il dicembre 2006 abbiamo eseguito 150 emorroidectomie sec Longo: 82 per emorroidi di 3° grado e 68 per emorroidi di 4° grado. Tutti i pazienti sono stati sottoposti preoperatoriamente ad esame proctoscopico e a pancoloscopia. E' stato usato il KIT PPH01 (Ethicon Endo Surgery). Sono stati valutati il tempo operatorio, il dolore post-operatorio le complicanze precoci e tardive e le recidive. Il follow-up medio è stato di 52 mesi (range 36-72)
RISULTATI: Non abbiamo avuto mortalità. Il tempo operatorio medio è stato di 25 minuti (range 15-45). Il dolore post-operatorio, valutato secondo il V.A.S: è stato molto lieve in 114 pazienti (V.A.S. 2,1), lieve in 36 (V.A.S. 3,2). Solo 11 pazienti (7,5%) hanno avuto bisogno di assumere antidolorifici al bisogno per una settimana dopo le dimissioni e 2 pazienti (1,3%) per più di un mese. Le complicanze precoci (6.6%) sono state: 5 sanguinamenti (2 a distanza di una settimana dall'intervento), 4 ritenzioni urinarie, 1 trombosi emorroidaria e un ematoma della parete del retto.
La degenza media è stata di giorni 2,1. Le complicanze tardive (10%) sono state: 5 " fecal urgency" risoltesi spontaneamente entro 6 mesi, 6 moderate e asintomatiche stenosi e 4 persistenza di marische. Ci sono state 8 recidive (5.1%), 2 per emorroidi di 3° grado e 6 per emorroidi di 4° grado. Tutte le recidive sono comparse entro 24 mesi dall'intervento
CONCLUSIONI: L'emorrroidectomia sec. Longo rappresenta un efficace trattamento per la malattia emorroidaria. I risultati per quanto riguardo il dolore post-operatorio e il ritorno alle normali attività lavorative sono molto buoni. È necessaria una particolare attenzione all'emostasi per evitare i sanguinamenti post-operatori. Una corretta tecnica evita le complicanze tardive, ma i controlli a distanza dimostrano una non insignificante percentuale di recidive soprattutto nei casi di emorroidi di 4° grado

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