

Reduction of external anal mucosal prolapse with circular stapler

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Abstract: A circular resection and stapling technique was introduced by Pescatori in 1997 for the treatment of rectal mucosal prolapse. This technique has also been applied in the treatment of external anal mucosal prolapse (EAMP). The aim of this study was to retrospectively assess the outcome of this technique used in our department for the treatment of EAMP.

From May 2003 to April 2007, 27 patients were operated with this technique. We were able to contact 23 of these patients who were invited to a follow up study. Eighteen (78%) were consulted and physically examined in the outpatient clinic while 5 (22%) were interviewed by phone. At follow up median 14 (range 1.5 – 43) months after the operation, complications were seen in 13 patients (57%). Nine patients (39%) presented recurrences, five patients (22%) experienced fecal urgency and two patients (9%) described persistent post-operative pain. Three (13%) patients stated that they were not satisfied with the operation.

We report a high frequency of complications after circular resection and stapling of EAMP. Surprisingly, most patients were satisfied with the result of the operation, possibly because the symptoms from recurrences and complications were less bothersome than the ones from the primary EAMP. The technique may play a future role in carefully selected patients as a supplement to conventional techniques.

Key words: External anal mucosal prolapse; Haemorrhoidal prolapse; Circumferential mucosectomy; Stapled mucosal prolapsectomy; Longo procedure.

INTRODUCTION

External anal mucosal prolapse (EAMP) is characterized by protrusion of the anal mucosa distal to the anal verge. The external component of the prolapse may be present only during defecation or straining, spontaneously or as a permanent, non-reducible condition. Common symptoms are bleeding, pain, itching, a feeling of obstructive defecation and secretion of mucus. A common treatment is rubber band ligations, but the Milligan-Morgan haemorrhoidectomy technique for excision of the redundant mucosa is by most considered the gold standard. Band ligation is associated with recurrences, pain and bleeding¹ and Milligan-Morgans technique with significant postoperative pain, anal incontinence and other complications^{2,3}. Excision of rectal mucosal prolapse with a circular stapler device was first published by Pescatori in 1997⁴ and a similar technique for the treatment of prolapsing haemorrhoids was published by Longo in 1998⁵. So far only a few studies focusing on the use of a circular stapler in the treatment of the EAMP have been published^{6,7,8}. We report from our experiences with this method for the treatment of EAMP.

MATERIAL AND METHODS

All 27 patients operated for EAMP with a circular stapler from May 2003 to April 2007 were invited by mail to a follow up investigation in the outpatient clinic. Two patients were dead and we were unable to reach another two. Twenty three patients (ten males; mean age, 50; range 25-83) accepted by written consent to participate in the study. Eighteen (78%) of the patients were seen in the outpatient clinic while five (22%) declined physical examination and were interviewed by phone.

The diagnosis was based on anamnestic and clinical findings. Some prolapses were only external following defecation and could not be reproduced by straining in a lithotomy position, whereas others could be demonstrated by straining or were permanently externalised. However, before the operation, with the patient anaesthetised and muscle-relaxed in the lithotomy position, all prolapses became visible outside the anal verge. Eight (35%) patients had a defecography in order to exclude a rectal full-thickness prolapse as a differential diagnosis.

The operative technique was performed essentially as described⁵. In brief, the operation was carried out in a day care

unit in general anesthesia and with the patient in a lithotomy position. Intravenous muscle relaxation was used to allow introduction of a wide anoscope without overstretching the anal sphincter. A single purse-string suture was then placed circumferentially in the mucosa 4-5 cm above the dentate line. A circular stapler (PPH 03, Ethicon Endo- Surgery, Inc., Cincinnati, USA) was introduced and the purse-string was tied around the stapler shaft before resection and stapling of the anal mucosa. Local anesthesia (Marcaine 0.5%) with adrenaline was injected circumferentially in the submucosa of the anastomosis in order to reduce bleeding and pain. If a residual prolapse was still present, a second procedure was performed immediately in some of these cases by placing the new purse-string suture in the anastomosis. Prophylactic antibiotics were not given. The width of the mucosal rings resected, was approximately 2 cm. The specimens were visually inspected for muscular tissue, but not histologically examined.

At follow up patients were questioned about symptoms before and after the operation and physically examined for residual prolapse and strictures. The distance from the anastomosis to the dentate line was measured by anoscope.

RESULTS

All 23 patients presented a circumferential prolapse except from two (9%) with a semi-circumferential (180 degree) prolapse. Seven patients (30%) had external haemorrhoids in combination with the prolapse. None of the patients were previously operated with excision or circular resection and stapling for their prolapse. Two patients (9%) were previously operated with excision of haemorrhoids (Milligan-Morgans technique) and five (22%) had been treated with rubber band ligations for either prolapse or haemorrhoids.

The duration of the symptoms before the operation was mean 7 years (range 1 – 28 years). The main pre-operative complaints from the EAMP are listed in Table 1.

Twenty patients (87%) were operated by one surgeon and three patients by another two surgeons. At 30 days after the operation, 16 patients (70%) had reported symptoms.

Thirteen patients (57%) reported pain that lasted median 1 day (range 0-30 days), seven patients (30%) complained of fecal urgency, three (13%) patients noticed bleedings, two (9%) patients were constipated and one patient (4%) developed a thrombosed haemorrhoid that was incised.

TABLE 1 – Complaints before operation for EAMP

Bleeding	70 %
Hygienic problem	57 %
Pain	52 %
Difficult reduction of prolapse	48 %
Feeling of obstructed defecation	43 %
Pruritus ani	39 %
Fecal incontinence/secretion	22 %
Cosmetic problem	9 %

At follow up at median 14 (range 1.5 – 43) months after the operation 13 patients (57 %) reported one or two of the following complications: Recurrences in 9 patients (39 %) (included two patients who were reoperated for recurrences before follow-up), fecal urgency in five patients (22 %) persistent pain in two patients (9 %) and pruritus ani in one patient (4 %). The nine recurrences occurred median 6 (range 0 – 12) months after the operation. Two of the five patients with fecal urgency reported a gradual improvement in the follow up period. Two patients reported long lasting pain. In one patient the pain was caused by an anal fissure which healed in 4.5 months. The other one reported continuous post-defecational pain with no sign of improvement at follow up. Five patients complained of fecal incontinence before the operation. For two of these the condition was unchanged after the operation while two reported an improvement and one patient was cured. No patients developed anal incontinence following the procedure.

Five patients were reoperated before follow up. One was operated for a missed internal rectal prolapse with laparoscopic anterior rectopexy. Two were reoperated for their recurrent EAMP with either an additional circular resection or a Milligan-Morgan excision combined with a rubber band ligation. One of these still had a small recurrent prolapse at follow up. Two patients were operated for haemorrhoids with either band ligations or Milligan's excision.

Eleven patients (48 %) stated that they were "very satisfied", nine patients (39 %) were just "satisfied" whereas three patients (13 %) were "not satisfied" with the results at follow up.

A physical examination with digital exploration and proctoscopy was performed in 18 patients (78 %). No strictures were revealed. The anastomosis was identified in all patients. All anastomosis were well healed except from one that appeared inflamed, bleeding after touched by the anoscope. Four patients (22 %) presented haemorrhoids. Six of the nine anamnestic recurrences were physically examined. One of these patients presented a 360 degree circumferential prolapse, four presented a 30-50 degrees sectorial prolapse whereas one patient was not able to present the prolapse by straining. The mean distance from the linea dentata to the anastomosis was 3.8 cm (range 1.5 -5.5 cm).

DISCUSSION

We here report a retrospective study on the treatment of EAMP with a circular resection and stapling device. The long pre-operative duration of the disease, in our study 7.1 years, reflects probably a lack of general knowledge about this disease and its treatment. Studies on the treatment of external haemorrhoids by circular resection and stapling of the proximal mucosa are comprehensive^{2,5,9,10,11,12,13}, whereas studies focusing on operations of EAMP with the same technique, are few with a small number of patients^{6,7,8}.

TABLE 2 – A functional classification of EAMP.

Grade	Anamnestic presentation of EAMP
A	The prolapse is external only at defecation
B	The prolapse is external at defecation and spontaneously in between defecations
C	Permanent external prolapse, not reducible

The classification and terminology of ano-rectal prolapses may be confusing. It is important to differentiate between the full thickness and the mucosal prolapses since these two conditions are treated in different ways. Mucosal prolapses may be internal and are then named rectal internal mucosal prolapses (RIMP)¹⁴. The RIMP may be graded¹⁵ and the third degree RIMP describes a prolapse where the mucosa reaches as far as the anal verge by straining. This condition should be kept distinct from the term EAMP⁶ which is also named haemorrhoidal prolapse. The differentiation between internal and external prolapses may also be of importance for evaluating the cause of a possible, associated obstruction⁴. Pescatori has made a classification system for RIMP¹⁵. Accordingly we have proposed a clinical grading of the EAMP based on the degree of presentation of the prolapse external of the anus according to anamnestic information (table 2).

Nine (39%) of our patients reported recurrences. In the most comparable study, Altomare reported no recurrences but two patients required one rubber band ligation each for persistent minimal mucosal prolapse⁶. Smaller recurrent prolapses occupying only a part of the circumference may in fact represent a residual prolapse not detected after the primary resection. We propose that a follow up with an anamnestic and physical examination after 6 months should be an integrated part of the treatment in order to be able to perform a supplementary procedure if necessary.

A relatively high proportion (22%) of our patients complained of lasting fecal urgency after the operation although the condition was improving for two of the five patients. None of the 18 patients in Altomare's study was reported to suffer from fecal urgency after the operation while Pescatori reports fecal urgency in 23% of the patients operated with stapled mucosectomy for either haemorrhoids or rectal internal mucosal prolapse⁹. Since the technique for circular stapling of both haemorrhoids and EAMP is the same, some side effects and complications may be comparable in these two groups. However, in a large multicentric review of patients stapled for haemorrhoids, the rate of fecal urgency was only 0.2%¹¹. Surprisingly, four of five of the patients in our study with fecal urgency were satisfied with the result of the operation, indicating that this complication was less important than the symptoms from the prolapse. A similar finding of high patient satisfaction despite frequent postoperative symptoms is also reported after circular stapling for haemorrhoids¹³.

One of our patients reported chronic post-defecational pain that continued beyond the time frame of this study. She also suffered from a non-relaxing puborectalis syndrome before the operation. Pescatori found that non-relaxing puborectalis syndrome is a negative predictive factor for the outcome after excision of rectal internal mucosal prolapse, and we do agree with him when he recommends non-operative treatment if there is evidence of this condition¹⁴. Furthermore, chronic anal pain after stapled mucosectomy for hemorrhoids has been reported in 1.6-16% of the cases^{10,11,12}, and new-onset post-defaecation pain syndrome developed in 4% of the patients¹⁶.

Our measured distance from the dentate line to the

anastomosis was mean 3.8 cm whereas this distance in Altomare's study was mean 1.5 cm. Longo states that the resultant staple line should be at least 2 cm proximal to the dentate line¹⁷. The excision of a more distal part of the EAMP may explain the lower number of recurrences in Altomare's study compared to our more proximal stapler line. Although our level of the staple line is more correct than in Altomare's study according to Longo's statement, it may still be too high in order to remove the most protruding part of the mucosal prolapse that may be more distal than our level of resection.

We conclude that the circular resection and stapling of EAMP is an alternative treatment to rubber band ligation and Milligan-Morgans excision of mucosa. However, the number of operations complicated with fecal urgency and the recurrence rate is very high in this study and represents a contra-indication for patients with only moderate symptoms. Future studies should be carried out prospectively in order to compare circular stapling with conventional techniques. Until then, our attitude to this technique in the treatment of EAMP is restrictive despite little post-operative pain and mainly satisfied patients.

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