

Stapled hemorrhoidopexy.

A single-center study on over 600 patients with long term follow-up



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OBJECTIVE; *The aim of this study is to evaluate the results of patients treated by stapler hemorrhoidopexy for hemorrhoidal disease with a long term follow up.*

MATERIAL AND METHOD: *Patients who were operated with stapled hemorrhoidopexy (SH) technique between 01/01/2009 and 01/01/2019 in the general surgery department were included. Patients with stage 2 and stage 3 hemorrhoidal disease included. All patients were operated by the same surgeon using a 33-mm circular PPH stapler. All patients were evaluated on the 7th day with physical examination, at the second month with physical exam and flexible rectoscopy and at one year with physical examination or telephone call and then with follow up exams if they had symptoms.*

RESULTS: *646 patients were included. 581 of them were discharged on the same day of the operation. At 1 week after surgery, 78 patients (12 %) reported urgency and occasional gas leakage, and 18 patients (3%) reported liquid leakage. 68 patients (11%) developed grade 3 or 4 recurrence 38 (6 %) of these patients were treated with Milligan Morgan hemorrhoidectomy. 19 patients with bleeding were treated with band ligation. Forty-five patients (7%) required drug therapy for treating hemorrhoidal bleeding. 42 patients developed anal fissure and three patients had anal stenosis.*

CONCLUSIONS: *SH provides high patient comfort and short hospital stay and is a good surgical alternative providing a low recurrence rate in the long run. This single center study with a long follow up period provides a contribution to literature.*

KEY WORDS: De Longo, Hemorrhoidal disease, Stapled hemorrhoidopexy

Introduction

Stapled hemorrhoidopexy first described by Longo in 1998 has been a comfortable and relatively pain free surgical alternative for grade 2 and 3 hemorrhoids and mucosal prolapsus^{1,2}. There are various reports claiming that this technique is associated with less postoperative complications, less need for hospitalization and less pain compared to the classical hemorrhoidectomy described by Milligan Morgan^{3,4}. Nevertheless, there are other reports claiming more recurrence in the long term and patients feeling swellings reminiscent of hemorrhoidal disease^{5,6}.

The aim of this study is to evaluate the results of patients treated by stapler hemorrhoidopexy for hemorrhoidal disease.

Material and Method

This study was done retrospectively. Patients who were operated using stapled hemorrhoidopexy technique between 01/01/2009 and 01/01/2019 in the general surgery department of Ataşehir Florence Nightingale Hospital with long term follow up were included in the study.

All patients in this study were operated by a single surgeon. Patients who were stage 2 and stage 3 accompanied with mucosal prolapsus were included in the study. Following a thorough history all patients underwent rectal examination. Afterwards all patients underwent colonoscopy in the surgical endoscopy unit to evaluate accompanying pathologies. During clinical examination, the following variables were collected: age, sex, grade of

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hemorrhoidal disease, previous treatment (eg, drugs, rubber band ligation, or surgery), local symptoms, continence disorders, and defecatory disorders (eg, obstructive defecation syndrome or slow-transit constipation)

Following physical examination and colonoscopy patients with hemorrhoidal thrombosis, anal stenosis or incompetence and those with inflammatory colon disease were excluded from the study.

Patient who have been previously operated for hemorrhoids, who had previous pelvic surgery or pelvic radiotherapy were also excluded from the study. Stapled hemorrhoidopexy technique was explained in detail to all patients and an informed consent was taken.

Patients who did not want surgery, those who preferred other alternative techniques (ie, Milligan–Morgan hemorrhoidectomy, hemorrhoidal artery ligation) and those affected by grade 1 were not included.

All patients were operated under general anesthesia. Prophylactic antibiotics were administered preoperatively to all patients. Surgery was done in lithotomy position. A circular anal dilator was inserted into the anal canal and secured to the perianal skin with 4 stay sutures. One circumferential pursestring suture (2/0 Prolene) was placed in the rectal wall, through the mucosa and submucosa, ≈2 cm above the dentate line. A 33-mm circular stapler (PPH-03, Ethicon Endo-Surgery) was inserted, closed, and after controlling the sphincters digitally ;was fired. In female patients, we always verified that the posterior vaginal wall was not trapped by the stapler before firing. The suture line was controlled for hemostasis and cautery or hemostatic stiches (3/0 Vicryl) were used if bleeding was detected. A hemostatic absorbable plug (Spongostan) was postoperatively left in the anal canal. All of the surgical procedures were performed by a single surgeon with ≥5 years of practice (minimum of 100 SHs per year).

Postoperatively all patients were discharged the same day except those with oozing or significant pain or urinary retention.

All patients were evaluated on the 7 th day with physical examination , second month with flexible rectoscopy and at one year with either physical exam or telephone interview.

After one year; patients were interviewed by phone or physical examination if symptomatic.

Patients who have had any kind of leakage during the follow-up and those who reported an urge to defecate at the 10-year visit were referred for manometry to evaluate the anal sphincter status. Endoanal ultrasound was performed whenever a sphincter lesion was suspected. Milligan–Morgan hemorrhoidectomy or band ligation was proposed to all of the patients affected by recurrence. Preoperative ,postoperative and follow up findings were noted. Patients with recurrence ,anal stenosis and anal incontinence were noted. Recurrence was defined as a new mucosal–hemorrhoidal prolapse that was at least the same grade as the preoperative one.

Data were analyzed using SPSS (version 16 for Windows; SPSS Inc, Chicago, IL). The results were reported in terms of mean ± SD, median (range), and number of patients (percentage).

All of the procedures performed in this study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Results

During 2009-2019, 698 patients underwent a surgical procedure for hemorrhoidal disease,. 52 patients did not match the inclusion criteria included 24 patients undergoing Milligan–Morgan hemorrhoidectomy, 4 patients undergoing hemorrhoidal artery ligation according to Morinaga, and 3 patients undergoing stapled transanal rectal resection. 21 patients were lost to follow up. 646 satisfied the inclusion criteria and were included in this study. Patient median age was 49 years (range, 31–74 y). Twenty-two patients (3%) had previous episodes of hemorrhoidal thrombosis, whereas 30 patients (5%) underwent previous hemorrhoidal rubber band ligations without success. To alleviate symptoms caused by hemorrhoids, oral treatments (eg, high-fiber diet, adequate fluid intake, probiotics, phlebotonics, and/or nonsteroidal antiinflammatory drugs) were administered to all symptomatic patients.

581 patients (90%) were discharged on the same day of the operation. 49 patients (7%) were discharged on the first postoperative day and 6 on the second day.

6 patients were discharged on the fourth postoperative day. Of the patients who had late discharge Twenty-nine (4%) developed urinary retention requiring urinary catheterization. Six patients (1%) required a reoperation for suture line bleeding, which was controlled in both cases with resorbable (3/0 Vicryl)stitches. The median hospital stay was 27 hours (range, 12–96h).

No active rectal bleeding or suture line dehiscence was found during the outpatient visits at 1 and 4 weeks after the surgical procedure.

At one week after surgery, 78 patients (12%) reported urgency and occasional gas leakage, and 18 patients (3%) reported liquid leakage. No anal sphincter lesion was found at anal manometry in these patients. Anal ultrasound was performed in 8 patients with liquid leakage, and no sphincter lesion was found in either case.

During follow-up, 13 patients (5%) reported rectal bleeding and anoscopic evaluation was performed and inflammatory polyps were seen at the staple line, which were removed at the outpatient endoscopy clinic.

Nineteen patients (3%) underwent band ligation for hemorrhoidal prolapse. Fourty-five patients (7%) required drug therapy for treating hemorrhoidal bleeding.

Fourtytwo patients (7%) had anal fissure and were giv-

en medical treatment and three patients who had anal stenosis were operated. There was no rectovaginal fistula, wound infection or pelvic sepsis recorded during the follow-up. 68 patients (11%) developed grade 3 or grade 4 mucosal-hemorrhoidal prolapse recurrence. Among them, 25 patients (4%) had symptoms of prolapse but this group did not want to be operated. 43 patients (7%) affected by recurrence accepted a redo surgery. 38 patients (6%) underwent Milligan-Morgan hemorrhoidectomy. Fifty-six patients (9%) had moderate symptoms who did not require any surgical intervention. Sixty-four patients (10%) reported an urge to defecate in the long term. All of these patients were subjected to manometry and endoanal ultrasound, both of which did not show any anal sphincter lesion. Manometry in these patients revealed decreased rectal compliance.

Discussion

Hemorrhoidal disease is very prevalent in the general public but the standard of care has not been established. After SH was first used for rectal prolapsus it was also used to treat stage 2 and 3 hemorrhoids and due to its advantages such as short hospital stay and increased patient comfort became rapidly popular^{7,8}. One of the most important advantages of SH is that it can be done on a day surgery basis⁹. In accordance with the literature our patient group was operated as day surgery cases. The technique has a high success rate in hemorrhoidal disease accompanied by mucosal prolapsus. The Milligan Morgan hemorrhoidectomy continues to be the standard of care in stage 4 hemorrhoidal disease¹⁰. We did not use SH technique for stage 4 hemorrhoidal disease in our series, we did however use it in stage 3 which continues to be controversial. Views about high recurrence rates in the long run created concern about SH. Omner *et al.*¹¹ reported recurrence rates reaching 40 % after a 6 year follow up. Likewise Ceci *et al.* used this procedure to operate grade 3 and 4 patients in their study and after 73 months of follow up reported recurrence rates that necessitated surgical intervention in 9% of patients and those with symptoms treated nonsurgically to be 25 %¹². In our study recurrence rate in patients requiring surgery is 10%. Recurrence in patients not requiring surgery is 9%. Our longest follow up period is 120 months and is longer than other studies. Meanwhile having the longest follow up period in literature, our study is superior to other studies. We think the variability regarding recurrence results from indication choices (stage III or III/ IV), definition of recurrence (existence of symptoms, recurrence of prolapsus) and differences in the length of follow up periods. For instance Voigtsberger *et al.*¹¹ reported a recurrence rate as low as 4 % after a follow up period of 14 months.

Stapled hemorrhoidopexy does not involve hemorrhoidal removal but arterial disruption. This fact should be taken into consideration when evaluating recurrence and symptoms. The reason we did not use this procedure in stage IV patients is the high recurrence rate in literature. Sakr *et al* compared stapler hemorrhoidopexy with ligation excision and found no meaningful difference in terms of recurrence¹⁴.

There are also studies comparing classical hemorrhoidectomy with SH and claiming that classical hemorrhoidectomy is superior in terms of recurrence^{15,16}.

In Milligan Morgan hemorrhoidectomy, the hemorrhoidal excision is effective in bleeding and prolapse control, but it is disadvantageous in terms of patient comfort and associated complications. It is also associated with long hospital stay. While incidence of rectovaginal fistula formation and colonic injuries are very low in hemorrhoidectomy, in stapled hemorrhoidectomy such a risk exists. We did not encounter rectovaginal fistula or colonic injuries in our series but 3 of our patients presented with anal stenosis.

Another group in which SH is advantageous is patients with mucosal prolapsus¹⁷. We used SH for mucosal prolapsus patients in our series. The fact that we did not classify prolapsus patients preoperatively is a lack for our study.

One of the most dreaded complications of hemorrhoidectomy is anal incontinence or urge incontinence due to anal sphincter injury. In our patients we encountered urge incontinence in 10 % of our patients. Investigative tests did not reveal any sphincter injury. This rate of urge incontinence is in compliance with the literature^{18,19}.

The fact that our study is retrospective and a comparison with other procedures does not exist is a restriction for our study. Nevertheless being a single center study with a long follow up period will be a contribution to literature.

Conclusion

This study shows that SH provides high patient comfort and short hospital stay and is a good surgical alternative providing a low recurrence rate in the long run. This single center study with a long follow up period provides a contribution to literature.

Riassunto

Lo scopo di questo studio è finalizzato a valutare i risultati di pazienti trattati con emorroidopessi con suturatrice per malattia emorroidaria, con un follow-up a lungo termine.

Sono stati considerati i pazienti operati con la tecnica dell'emorroidopessi con stapler (SH) tra il 1° gennaio

2009 e il 1° gennaio 2019 nel reparto di chirurgia generale dell'Ospedale Atasehir Florence Nightingale di Istanbul

La casistica studiata comprende pazienti con malattia emorroidaria di stadio 2 e 3. Tutti i pazienti sono stati operati dallo stesso chirurgo utilizzando una suturatrice PPH circolare da 33 mm. Tutti i pazienti sono stati valutati al 7° giorno con esame obiettivo, al secondo mese con esame obiettivo e rettoscopia flessibile e ad un anno con esame obiettivo o telefonata e successivamente con l'esecuzione di esami strumentali di follow-up se presentavano sintomi.

La casistica studiata consta di 646 pazienti, 581 dei quali sono stati dimessi lo stesso giorno dell'operazione. Alla prima settimana dall'intervento, 78 pazienti (12%) hanno riferito urgenza e occasionali perdite di gas e 18 pazienti (3%) hanno riportato perdite di materiale liquido. 68 pazienti (11%) hanno sviluppato una recidiva di grado 3 o 4 e 38 (6%) di questi pazienti sono stati trattati con emorroidectomia Milligan Morgan.

19 pazienti con sanguinamento sono stati trattati con legatura elastica. Quarantacinque pazienti (7%) hanno richiesto una terapia farmacologica per il trattamento del sanguinamento emorroidario. 42 pazienti hanno sviluppato una ragade anale e tre pazienti hanno avuto una stenosi anale.

Conclusioni dello studio: la SH offre un elevato comfort del paziente e una breve degenza ospedaliera ed è una buona alternativa chirurgica fornendo un basso tasso di recidiva nel lungo periodo. Questo studio monocentrico con un lungo periodo di follow-up fornisce un contributo alla letteratura.

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