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Article

Stapled haemorrhoidectomy: A day case procedure for symptomatic haemorrhoids

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Introduction:
Since Longo first described it in 1998, Stapled Haemorrhoidectomy (SH) has been emerging as the procedure of choice for symptomatic haemorrhoids (1). Several studies have shown it to be a safe, effective and relative complication free procedure (2). The aim of this study was to determine the suitability of SH as a day case procedure at a District General Hospital.

Methods
From June 2001 to May 2005, 66 patients who underwent stapled haemorrhoidectomy were included in this study. Parameters recorded included post-operative complications, analgesic requirements, cost effectiveness, duration of hospital stay and patient satisfaction. Follow-up was performed at 4 weeks with a further telephone follow-up up to 4 years after.

Results
Of the 66 patients that underwent a stapled haemorrhoidectomy 43 (65%) were male and 23 (35%) were female. The mean age was 49.8 years (range 16-78 years). 11% (n=7) of patients were discharged the same day and 88% (n=58) had overnight stay. Nearly 50% had complete resolution of symptoms and returned to work within a week. The satisfaction data showed that 90% of patients were completely satisfied with the procedure at initial follow-up, which increased to 98% after 6 months-4 years follow-up.

Conclusion
Our present study shows that stapled haemorrhoidectomy is a safe and very well tolerated procedure with low post-operative analgesic requirements, high patient satisfaction and early return to work. The majority of patients could avoid an overnight stay which would make this procedure suitable for day surgery.

Introduction

Since Longo first described it in 1998 (1), Stapled Haemorrhoidectomy (SH) has been emerging as the procedure of choice for symptomatic haemorrhoids. Several studies have shown it to be a safe, effective and relative complication free procedure with fewer days off work, reduced requirement for analgesia and rapid discharge (2-4). Historically symptomatic haemorrhoids have been dealt with by simple dietary modification, injection sclerotherapy, cryotherapy, band ligation and surgery (5-7).

Unfortunately there is no single optimum therapeutic option. Surgery for symptomatic haemorrhoids was popularised by the open Milligan–Morgan technique in the late 1930's or one of its variations. Unfortunately, this has been associated with postoperative pain, the risk of severe haemorrhage, and more concerning the risk of anal stenosis (especially if skin bridges are not maintained) and sphincter injury.

Controversy exists as regards to the overall safety and acceptability of SH. On the one hand recent reports of SH have been positive especially in regards reduced postoperative pain and recovery and adverse functional sequelae. A study by Pavlitidsi et al (8) included 80 patients with second to fourth degree hemorrhoidal disease in which patients were randomly allocated to undergo either the stapled Longo procedure (group 1) or Milligan-Morgan hemorrhoidectomy (group 2) under epidural anesthesia. SH had better postoperative pain scores with lower mean epidural morphine requirement and mean hospital stay. Conversely, a recent review from New Zealand (9) suggested that SH was more expensive, and the results should be looked upon with caution.

Several studies have suggested that SH may be safely performed as a Day case procedure. Patients following SH had reduced, post operative pain, hospital stay, analgesic requirements and earlier return to work (21-23). Day Surgery procedures have been at the forefront of recent changes within the NHS in the fight to reduce waiting times and better patient care. It is not only popular with patients who are able to recover and convalesce at home in a familiar environment but also reduce the chances of a hospital acquired infection and large cost saving implications for the NHS. However, not every surgical procedure is amenable for Day surgery, and thus procedures which require only moderate amounts of analgesia, reduced post operative stay and few complications and further in 2001 the Audit Commission included Haemorrhoidectomy as one of its 25 procedures suitable for Day Surgery (24).

Therefore the present study was to look critically at the learning curve, operative complications, duration of hospital stay, analgesic requirements, cost effectiveness and patient satisfaction in at the personal series of the first 66 patients who underwent SH at Watford General Hospital, a District General Hospital in Hertfordshire, United Kingdom. The aim of the present work was to determine the suitability of SH as a routine day surgery procedure which is not routine in the UK.

Patients and Methods

From June 2001 to May 2005, 66 patients who underwent stapled haemorrhoidectomy were included in this study. It was routine practice that stapled haemorrhoidectomy was performed by one dedicated surgical team (JIL).

Informed consent was obtained in writing prior to surgery. During induction at least a single dose of prophylactic antibiotics (of either a third generation cephalosporin or co-amoxiclav) was administered.

In brief, under general anaesthesia, the patient is put in lithotomy position and a rigid sigmoidoscopy done to exclude any rectal lesions. Stay-sutures with 2-0 silk are applied at the 3, 6, 9 & 12 o'clock. The anus is dilated using with a proctoscope.

An anal ring is applied and fixed to the anal verge by the previously taken stay-sutures. The inner end of the ring must be reaching beyond the dentate line.

Purse-strung sutures are taken all around the anal mucosa on top of the haemorrhoids (beyond the dentate line) followed by a per-rectal examination to make sure that the muscle layer is not taken within the sutures so as to avoid postoperative anal stenosis. Similarly, in female patients, per-vaginal examination is done to insure that vaginal wall is not taken within the sutures. A specialized circular stapler is introduced into the anal canal and the two ends of the purse-strung sutures are passed through special holes in the stapler and tied. Stapler is tightened (the indicator reads between 3 & 4 cm depth) and fired. The stapler is kept closed in place compressing them for 30 seconds in order to encourage haemostasis. The staples line then is checked for bleeding points, for which 2/0 vicryl under-running sutures may be use for further haemostasis. Finally, the anus is packed with 'spongistan' as well as flagyl and voltarol suppositories.

Post-operatively both groups were discharged when comfortable. Complications where noted as they occurred during the follow-up period at 4 weeks. Furthermore, a further telephone follow-up during July 2005 was done results from the survey are shown in table II.

The data was reviewed and analysed in conjunction with our department of medical statistics. Analysis was performed using the Mann-U test. Multivariate analysis of the means was performed using the Krushal-Wallis Test.

Results

Of the 66 patients that underwent a stapled haemorrhoidectomy 43 (65%) were male and 23 (35%) were female. The mean age was 49.8 years (range 16-78 years). Only 7 patients suffered with hypertension and one with diabetes mellitus.

There presenting complaints included rectal bleeding (bright red) in 86% (n=57) and pain and discomfort 53% (n=35). Other complaints included a sensation of something coming down (n=3), change in bowel habit (n=2), constipation (n=1), and incontinence (n=1).

All patients underwent evaluation with proctoscopy and rigid sigmoidoscopy. Further evaluation with colonoscopy (14%, n=9), flexible sigmoidoscopy (9%, n=6), barium enema (9%, n=6) and anorectal MRI (1%, n=1) to rule out other associated pathologies accounting for their symptoms.

Previous to SH, 57 patients (87%) had undergone previous therapeutic manoeuvres in the form of injection sclerotherapy (76%) and banding of haemorrhoidal tissue (11%).

The operating time ranged between 15-40 minutes with an average of 24 minutes. There were no major complications although the majority of patients warranted oversewing of bleeding points around the staple line after the stapling procedure.

Post-operative hospital stay revealed that 88%, (n=58) went home after overnight stay (within 24 hours) and only 1 patient had a 48 hours stay with only moderate strength analgesics (Voltarol) (Table 1).

At routine follow-up at 1 month, we found that nine patients (14%) had had minor degrees of faecal urgency, frequency and soiling rectal bleeding, all of which subsequently resolved. Only one patient had developed a peri-anal heamatoma, which was evacuated under local anaesthesia in the Outpatient Department. Further, only two patients had significant problems. One patient complained of pain and discomfort at four-week follow-up, which we think resulted from too low application of the stapler which resolved completely over a six month period with simple analgesics and a single case of rectal stenosis resulting from too high a stapling, which was referred to a specialised centre for further management (Table 2).

Indeed, only 3 patients had recurrence of symptoms, which were treated with further sclerotherapy injection in the Out-patients department and one requiring re-stapled haemorrhoidectomy.

Follow-up was in the form of Out-patient review 4-6 weeks after the procedure and a telephone questionnaire up to 4 years after the operation the results of which are shown in Table 3-5. We can see that a third of the patients did not require or use analgesia after discharge and further 44% (n=29) needed just Voltarol. As regards to symptoms we can see that approximately two thirds of patients where off analgesics, and half had complete resolution and returned to work within a week. The satisfaction data shows that the immediately 90% of patients were completely satisfied with the procedure which increased to 98% on our follow up (6 months-4 years).

Discussion

The present study shows that stapled haemorrhoidectomy is a safe and very well tolerated procedure which is amenable for Day Case Surgery. We have shown that this approach is significantly quicker than the classical conventional haemorrhoidectomy and better tolerated with reduced post-operative pain and analgesic requirements, good patient satisfaction and early return to work. Further the vast majority of patients (65/66) were discharged after overnight stay with mild and moderate oral analgesics. We have now adopted this as our technique of choice for haemorrhoidal disease.

The optimal mode for haemorrhoidal disease has been an ongoing debate for over 20 years and can be achieved by either open conventional Milligan Morgan and associated procedures and more recently stapled haemorrhoidectomy. Open haemorrhoidectomy has been associated with pain, discomfort, anal stenosis and a poor satisfaction scores (13-14). Several randomised clinical trials have compared Open haemorrhoidectomy with SH and have suggested an advantage with SH (2,3,15,16) however due to the fact that this is a new procedure there is a paucity of long term data.

In our study we looked at the complications and patient related factors associated with SH these are shown on Tables 3-5. Minor complications included rectal bleeding, fecal urgency and perianal hematoma all of which resolved conservatively. One must note that although every effort is made to ensure that at the end of the procedure the operating site is haemostatically secure some passage of blood per rectum is considered inevitable, our data is from patient self assessments who may interpret this differently. We were unable to consistently quantify this and relied upon patient testimonies. Also Van De Stadt (12) noted a 55% rate of persistent or recurrent symptoms as well as a 20% requiring recurrent or redo surgery and Thaha et al (11) showed post-defecation syndrome rate of 4%.

Major complications associated with SH have been reported mainly in the form of case reports. In our series of 66 patients we had only two major complications. One patient had quite a lot of pain and discomfort post-operatively and upon assessment in the Out-patient department it was found that the staple line was too low (i.e. less than 3 cms) and this may be encroaching on the dentate line. Fortunately the patient was very tolerant and resolved over six months with moderate analgesics. Furthermore, our other major complication the patient developed rectal stenosis and was referred to a specialised unit where he underwent a resection. We feel that this patients staple line was too high (i.e. above 4 cms). Thus the message is that although SH is a simple procedure the critical step is the application of the purse-string so that the staple line is between 3-3.5 cms as complications can arise if you are too high or too low which was recently confirmed in a study of acute haemorrhoidal crisis (17).

Several papers have expressed concern with post-operative pain, faecal urgency after SH (18-19). This has been postulated to be due to incorporation of the muscle layers in the purse-string. However a recent paper by Kam et al (20) in a series of 33 patients found no association between amount of resected muscle and incontinence. Indeed, it is important to keep the purse-string suture superficial and not encroaching on the other bowel wall layers.

Our study shows good patient satisfaction scores and symptom control (Tables 3-5). We have shown that almost all 98% (65/66) of patients were discharged after a maximum overnight stay. This has huge cost saving consequences and although the equipment costs are high for SH this is compounded by a short duration of the operation, shorter hospital stay, reduced analgesic requirement and quicker return to work with the Health Service coming up on top overall. Of note, we can see that over 50% (n=34) of patients were back to work within a week of the operation and this is further supported by the fact that the majority of patients required simple analgesics for short durations.

This study highlights the excellent results after SH, with all the advantages such as reduced pain and hospital stay, and an earlier return to work. Importantly there does not seem to be a learning curve and once a surgeon has attended a training day or supervised there seems to be no increase in complications. The complication rates are low and as we have shown earlier only a single complication requiring intervention.

In conclusion, our study demonstrates that the SH is a safe, effective and well tolerated procedure which seems to have all the requirements for Day case surgery. We have also shown that it is quick procedure and post operatively less painful and requiring only simple analgesia for a short period. Thus we have adopted this technique as our procedure of choice and will consider it as a Day Case prodedure for symptomatic haemorrhoidal disease.

Table 1 : Duration Of Stay

Same Day	7
Overnight	58
2 Days	1
Total	66

Table 2 : Complications

Minor	
Rectal Bleeding	9
Faecal Urgency	10
Perinanal Hematoma	1
Periananl Lump	1

Total	21
Major	
Pain And Discomfort	1
Rectal Stenosis	1
Total	2

Table 3 : Analgesia

Nil	22
Pracetamol	8
Voltarol	29
Coproxamol	4
Paracetamol & Voltarol	3
Total	66

Table 4 : Analgesia

	Duration Of Analgesics	Complete Resolution	Return To Work
Nil	22	0	20
<1 Week	20	30	14
1-2 Weeks	16	22	24
>2 Weeks	6	14	8

Table 5 : Patient Satisfaction

	Immediate	4-6 Weeks	>6 Months
Satisfied	90%	95%	98%
Not Satisfied	10%	5%	2%

COMPETING INTERESTS
None Declared

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REFERENCES

1. Longo A. Treatment of haemorrhoidal disease by reduction of mucosa and haemorrhoidal prolapse with a circular stapling device: a new procedure. 6th World Congress of Endoscopic Surgery. Mundozzi Editore: Naples, 1998;777-84.

2. Boccasanta P, Capretti PG, Venturi M, Cioffi U, De Simone M, Salamina G, Contessini-Avesani E, Peracchia A. Randomised controlled trial between stapled circumferential mucosectomy and conventional circular hemorrhoidectomy in advanced hemorrhoids with external mucosal prolapse. Am J Surg. 2001;182(1):64-8.

3. Shalaby R, Desoky A. Randomized clinical trial of stapled versus Milligan-Morgan haemorrhoidectomy. Br J Surg. 2001 Aug;88(8):1049-53.

4. Ascanelli S, Gregorio C, Tonini G, Baccarini M, Azzena G. Long stapled haemorrhoidectomy versus Milligan-Morgan procedure: short- and long-term results of a randomised, controlled, prospective trial. Chir Ital. 2005 Jul-Aug;57(4):439-47.

5. Alonso-Coello P, Guyatt G, Heels-Ansdell D, Johanson J, Lopez-Yarto M, Mills E, Zhou Q, Alonso-Coello P. Laxatives for the treatment of hemorrhoids. Cochrane Database Syst Rev. 2005 Oct 19;(4):CD004649.

6. Ramzisham AR, Sagap I, Nadeson S, Ali IM, Hasni MJ. Prospective randomized clinical trial on suction elastic band ligator versus forceps ligator in the treatment of haemorrhoids. Asian J Surg. 2005 Oct;28(4):241-5.

7. Hardy A, Chan CL, Cohen CR. The surgical management of haemorrhoids--a review. Dig Surg. 2005;22(1-2):26-33.

8.Pavlidis T, Papaziogas B, Souparis A, Patsas A, Koutelidakis I, Papaziogas T. Modern stapled Longo procedure vs. conventional Milligan-Morgan hemorrhoidectomy: randomized controlled trial. Int J Colorectal Dis.2002;17(1):50-3.

9. Hill A. Stapled haemorrhoidectomy--no pain, no gain? N Z Med J. 2004 8;117(1203):U1104.

10. Peng BC, Jayne DG, Ho YH. Randomized trial of rubber band ligation vs. stapled hemorrhoidectomy for prolapsed piles. Dis Colon Rectum. 2003;46(3):291-7; discussion 296-7.

11. Shanmugam V, Thaha MA, Rabindranath KS, Campbell KL, Steele RJ, Loudon MA.Rubber band ligation versus excisional haemorrhoidectomy for haemorrhoids. Cochrane Database Syst Rev. 2005 Jul 20;(3):CD005034. Review.

12. Van de Stadt J, D'Hoore A, Duinslaeger M, Chasse E, Penninckx F; Belgian Section of Colorectal Surgery Royal Belgian Society for Surgery. Long-term results after excision haemorrhoidectomy versus stapled haemorrhoidopexy for prolapsing haemorrhoids; a Belgian prospective randomized trial. Acta Chir Belg. 2005 Feb;105(1):44-52.

13. Uba AF, Ihezue CH, Obekpa PO, Iya D, Legbo JN.Open haemorrhoidectomy revisited. Niger J Med. 2001;10(4):185-8

14. Arroyo A, Perez F, Miranda E, Serrano P, Candela F, Lacueva J, Hernandez H, Calpena R.Milligan-Morgan haemorrhoidectomy with ultrasonic scalpel. G Chir. 2003;24(11-12):422-7.

15. Khalil KH, O'Bichere A, Sellu D. Randomized clinical trial of sutured versus stapled closed haemorrhoidectomy. Br J Surg. 2000;87(10):1352-5

16. Hetzer FH, Demartines N, Handschin AE, Clavien PA. Stapled vs excision hemorrhoidectomy: long-term results of a prospective randomized trial. Arch Surg. 2002 ;137(3):337-40.

17. Kang JC, Chung MH, Chao PC, Lee CC, Hsiao CW, Jao SW.Emergency stapled haemorrhoidectomy for haemorrhoidal crisis. Br J Surg. 2005;92(8):1014-6.

18. Cheetham MJ, Mortensen NJ, Nystrom PO, Kamm MA, Phillips RK. Persistent pain and faecal urgency after stapled haemorrhoidectomy. Lancet. 2000 26;356:730-3.

19. Rowsell M, Bello M, Hemingway DM. Pain after stapled haemorrhoidectomy. Lancet. 2000 Dec 23-30;356(9248):2188; author reply 2190

20. Ravo B, Amato A, Bianco V, Boccasanta P, Bottini C, Carriero A, Milito G, Dodi G, Mascagni D, Orsini S, Pietroletti R, Ripetti V, Tagariello GB. Complications after stapled hemorrhoidectomy: can they be prevented? Tech Coloproctol. 2002;6(2):83-8.

21. Law WL, Tung HM, Chu KW, Lee FC. Ambulatory stapled haemorrhoidectomy: a safe and feasible surgical technique. Hong Kong Med J. 2003 Apr;9(2):103-7,

22. Ong CH, Chee Boon Foo E, Keng V. Ambulatory circular stapled haemorrhoidectomy under local anaesthesia versus circular stapled haemorrhoidectomy under regional anaesthesia. ANZ J Surg. 2005 Apr;75(4):184-6.

23. Ascanelli S, Gregorio C, Tonini G, Baccarini M, Azzena G. Long stapled haemorrhoidectomy versus Milligan-Morgan procedure: short- and long-term results of a randomised, controlled, prospective trial. Chir Ital. 2005 Jul-Aug;57(4):439-47

24. Royal College of Surgeons of England (1992) Guidelines of day case surgery (revised edition), London: RCS.