

Transanal haemorrhoidal dearterialization (THD) versus open haemorrhoidectomy

Bhatia M.¹, Al Chalabi H.²

1. Senior Clinical Fellow, Princess Royal University Hospital, Orpington, United Kingdom.
2. Consultant, Colorectal & General Surgeon. Princess Royal University Hospital

Abstract

Aim

Haemorrhoid is a common surgical problem that can affect the quality of life apart from causing discomfort. With advancement, new surgical techniques have been proposed for dealing with haemorrhoids. Doppler guided Trans-anal haemorrhoidal dearterialisation (THD) has been put forward as a treatment with superior results. We aim to analyse our results of THD when compared to conventional haemorrhoidectomy with a 1-year follow-up period.

Methods

The prospective comparative data was collected from 90 haemorrhoid cases in total operated by the same surgical team (divided into two groups: THD, n = 45; Open Haemorrhoidectomy [OH], n = 45). Patients with Grade III–IV haemorrhoids were included in this study. Patients operated on previously and patients with thrombosed piles were excluded. All these patients underwent surgery as day cases. The overall follow-up over a period of 1 year was looked into categorising various parameters, and the results with both surgical techniques were compared. Our study included 17 male and 28 female patients in the THD group and 32 female patients in the OH group. Twelve patients (26.6%) in the OH group had postoperative bleeding within a period of 1 year. Our study revealed a more complicated spectrum with patients undergoing OH.

Discussion

THD is a relatively new surgical technique, with better outcomes and, if selected appropriately, superior results, especially in the postoperative period, as it has fewer complications compared with conventional OH.

Introduction

Haemorrhoids are a common surgical condition involving the anal canal and can also impact the quality of life apart from causing bleeding and discomfort.¹ In many parts of the world, people are still reluctant to seek medical advice for anorectal diseases due to embarrassment and lack of proper information.

For quite a long time, tried and tested surgical methods, such as conventional haemorrhoidectomy, have been considered the treatment of choice for haemorrhoids.²

Specifically, open haemorrhoidectomy (OH) has been considered quite effective in treating haemorrhoids. However, it is associated with postoperative discomfort, long recovery time, and other complications.³

Different techniques have evolved due to advancement and ongoing efforts to improve patient safety and provide better outcomes. THD is now considered a safer and better surgical method, especially for treating Grade II–IV haemorrhoids,⁴ due to the non-excisional surgical approach with better-proven outcomes.⁵ Monte et al. described THD as involving the ligation of branches of the superior rectal artery, thereby decreasing the blood flow and eventually shrinking the haemorrhoid.⁶

In the recent past, many studies have stressed the advantages of THD over conventional OH. Patient satisfaction associated with postoperative recovery experience and follow-up complication rates is analysed to study the effectiveness of the surgical approach.

Our study aims to review, at 1-year follow-up, 90 patients who underwent two different surgical approaches for proven symptomatic haemorrhoids at our hospital.

Methods

The comparative prospective data of 90 patients who underwent surgery for symptomatic haemorrhoids within a year at Royal Derby Hospital Foundation Trust, United Kingdom, was collected for our study.

The diagnosis was established with clinical examination, proctoscopy, and flexible sigmoidoscopy/colonoscopy. The patients were divided into two groups: THD and OH. The study was non-randomised. Patients underwent procedures as per their choice after a detailed discussion about the procedures.

All patients were operated on by the same surgical team, who were well accustomed to both surgical techniques. All cases were managed as day surgery cases and were discharged home on the same day. The final decision regarding the choice of the surgical method between THD and OH was made before the day of the procedure.

Inclusion criteria:

1. > 30 years of age
2. Grade III–IV haemorrhoids

Exclusion:

1. < 30 years of age
2. Previously operated case for haemorrhoids
3. Thrombosed piles
4. Incontinence/inflammatory bowel disease.

After providing the required informed consent, patients in both groups underwent surgery.

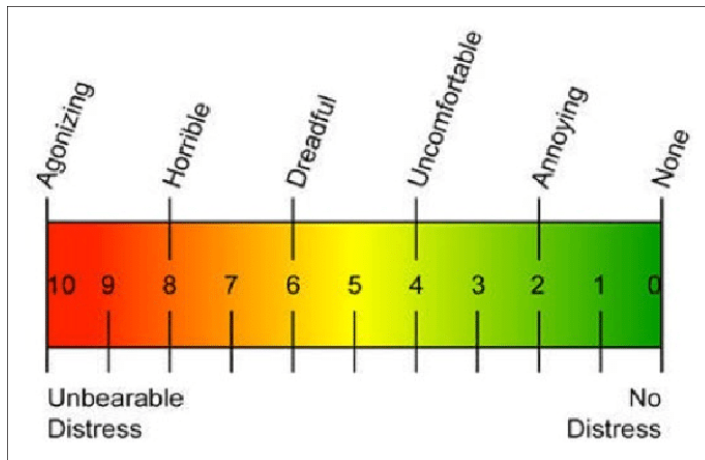
All patients in the OH group were operated using the conventional Milligan-Morgan technique, which included a V-shaped skin incision at the mucocutaneous junction, with excision of haemorrhoid and transfixion of the pedicle base with Vicryl 2/0 suture.

In the THD group, a proctoscope with an ultrasonic sensor was used, and the vessels were ligated based on the sensor signal. It included selective ligation of haemorrhoidal arteries with an absorbable suture as picked up by the doppler signal.

All patients in this group had local infiltration of Chirocaine 0.25%. Postoperative analgesia was managed per the WHO pain ladder guidelines, with regular paracetamol 1 grams 8 hourly, along with weak opioids in refractory pain. The pain intensity levels were reviewed using the visual analogue scale (VAS).

All patients were discharged with laxatives (Movicol sachets) and given oral metronidazole 400 mg TDS for 5 days along with appropriate analgesia.

All patients were reviewed in the follow-up periods of 1 week and 1 year to review the surgical outcomes and to identify any recurrence post-surgery.



Results

A total of 90 patients underwent surgery for haemorrhoids within this period of 1 year. Both groups comprised 45 patients each. Eighty-seven patients were followed up with, and three patients were lost in the follow-up.

Seventeen males (37.8%) and 28 females (62.2%) patients comprised the THD group. Thirteen male (28.9%) and 32 female (71.1%) patients constituted the OH group. The mean age was 42 in the THD group and 47.6 in the OH group. One patient in the THD group had postoperative bleeding within a week, whereas six patients (13%) presented with postoperative bleeding in the OH group within a week of surgery.

Eighteen patients (40%) in the THD group complained of moderate-intensity pain, whereas 23 patients (57.6%) in the OH group complained of moderate-to-severe pain. Seven patients (15%) in the OH group developed a postoperative infection. No infections were recorded in the THD group. Recurrence was seen in one patient (2.2%) in the THD group and four patients (8.9%) in the OH group.

Discussion

Moringa et al.⁵ concluded effective results of bleeding resolution in 95% of patients after the THD procedure. In our study, a total of four patients (8.9%) had postoperative bleeding over a period of 1 year after having a THD procedure. In the OH group, 12 patients (26.7%) noted postoperative bleeding in this period.

Faucheron et al.⁶ concluded that only 6% of patients presented with postoperative pain after THD.

In our study, one patient (2.2%) had a recurrence of symptoms after 1 year of follow-up after THD, compared to 8.9% in the OH group. A study by Giardino et al.⁷ showed recurrence in one patient out of 31 (2.2%) after THD with mucopexy.

P. Denoya et al.⁸ compared THD with OH over a period of 3 years and concluded recurrence rates of 16.7% in the THD versus 6.7% in the OH group. Higher rates were attributed to the long follow-up period and to the learning curve of the surgical team.

A French study included follow-up periods of 1 month and 1 year and showed recurrence rates of around 10.5% during the 1-year follow-up after THD.⁹

Our study showed better outcomes in terms of postoperative pain and bleeding after THD.

Fisten et al.¹⁰ concluded that THD patients have less postoperative pain and have a better recovery period after THD during the first week after surgery.

Pain management threshold can be debated, as it can be a subjective parameter. Lucarelli et al.¹¹ did not find much difference in postoperative pain when comparing THD and OH outcomes. Our study shows contrasting results, with better outcomes and experiences after THD. Similar thoughts were echoed by Verre et al.,¹² who showed that 7.9% of patients had bleeding after OH, whereas none after THD.

Many past studies have also highlighted better outcomes with THD in terms of postoperative pain and recurrence rates.¹³

Elmer et al.¹⁴ conducted a study comparing THD and OH and concluded that patients had lower postoperative pain after THD. However, a contrasting aspect was highlighted by Xu et al.¹⁵, who suggested statistically no difference in recurrence rates and complications when comparing THD and OH.

Our study indicates better outcomes after THD when compared with OH. It shows that THD is more promising and is a surgical option to go forward with, as it involves minimal excision, and the results are more reassuring for patients.

Conclusion

The Doppler-guided THD surgical procedure is a well-recognised innovative surgical technique. Our study proves that it offers a more favourable outcome in terms of postoperative pain, infection, and recurrence rates. It helps in the early return to normal physical and professional activities. The learning curve for the operator of THD is debatable.

Limitations of our study:

1. Our sample size was not very large. With a larger pool of patients, our results would have been more substantive and perceived as less biased.
2. Having a longer follow-up would have helped us more in terms of including patient experience.

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

Mohit Bhatia,
Senior Clinical Fellow,
Princess Royal University Hospital,
Orpington, Kent,
United Kingdom.

References:

1. LaBella GD, Main WPL, Hussain LR. Evaluation of transanal hemorrhoidal dearterialization: a single surgeon experience. *Tech Coloproctol*. 2015;19:153–7.
2. Acheson, Austin G, and John H Scholefield. "Management of haemorrhoids." *BMJ (Clinical research ed.)* vol. 336,7640 (2008): 380-3. doi:10.1136/bmj.39465.674745.80
3. Milligan E, Morgan C, Jones L, Officer R. Surgical anatomy of the anal canal and the operative treatment of haemorrhoids. *The Lancet*. 1937;2:1119–1123.
4. Figueiredo MN, Campos FG. Doppler-guided hemorrhoidal dearterialization/transanal hemorrhoidal dearterialization: technical evolution and outcomes after 20 years. *World J Gastrointest Surg*. 2016;8(3):232–7.
5. Morinaga K, Hasuda K, Ikeda T. A novel therapy for internal hemorrhoids: ligation of the hemorrhoidal artery with a newly devised instrument (Moricorn) in conjunction with a Doppler flowmeter. *Am J Gastroenterol*. 1995;90:610–613.
6. Faucheron JL, Poncet G, Voirin D, Badic B, Gangner Y. Doppler-guided hemorrhoidal artery ligation and rectoanal repair (HALRAR) for the treatment of grade IV hemorrhoids: long-term results in 100 consecutive patients. *Dis Colon Rectum*. 2011;54:226–31.
7. Giordano P., Nastro P., Davies A., Gravante G. Prospective evaluation of stapled haemorrhoidopexy versus transanal haemorrhoidal dearterialisation for stage II and III haemorrhoids: three-year outcomes. *Tech. Coloproctol*. 2011;15:67–73.
8. P. Denoya, J. Tam, R. Bergamaschi Haemorrhoidal dearterialisation with mucopexy versus haemorrhoidectomy: 3-year follow-up assessment of a randomized controlled trial *Tech Coloproctology* DOI 10.1007/s10151-014-1219-8.
9. Nguyen V, Jarry J, Imperato M, Farhouat P, Michel P, Faucheron L.
10. French experience in the management of haemorrhoids by HAL Doppler. <http://dx.doi.org/10.11016/j.jviscsurg.2012.10.004>

11. Festen S, van Hoogstraten MJ, van Geloven AA, Gerhards MF. Treatment of grade III and IV haemorrhoidal disease with PPH or THD. A randomized trial on postoperative complications and short-term results. *Int J Colorectal Dis.* 2009;24:1401–1405.
12. Lucarelli P, Picchio M, Caporossi M, De Angelis F, Di Filippo A, Stipa F, Spaziani E. Transanal haemorrhoidal dematerialisation with mucopexy versus stapler haemorrhoidopexy: a randomised trial with long-term follow-up. *Ann R Coll Surg Engl.* 2013;95:246–251.
13. Verre L, Rossi R, Gaggelli I, Di Bella C, Tirone A, Piccolomini A. PPH versus THD: a comparison of two techniques for III and IV degree haemorrhoids. Personal experience. *Minerva Chir.* 2013;68:543–550.
14. Pavlidis T, Papaziogas B, Souparis A, et al. Modern stapled Longo procedure vs. conventional Milligan-Morgan hemorrhoidectomy: a randomized controlled trial. *Int J Colorectal Dis.* 2002;17:50–53.
15. Elmér SE, Nygren JO, Lenander CE. A randomized trial of transanal hemorrhoidal dearterialization with anopexy compared with open hemorrhoidectomy in the treatment of hemorrhoids. *Dis Colon Rectum.* 2013;56(4):484–90.
16. Xu L, Chen H, Lin G, Ge Q, Qi H, He X. Transanal hemorrhoidal dearterialization with mucopexy versus open hemorrhoidectomy in the treatment of hemorrhoids: a meta-analysis of randomized control trials. *Tech Coloproctol.* 2016;20(12):825–33.