



THD and mucopexy: Efficacy and controversy



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HIGHLIGHTS

- Treatment of Piles with Trans anal Hemorrhoidal De-arterialisation.
- Local experience in district hospital prospective cohort study.
- Short and long-term complication with recurrence rates.

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ABSTRACT

Aims: Transanal haemorrhoidal dearterialisation and mucopexy has evolved in recent years as a popular minimally invasive non-excisional surgery for symptomatic prolapsing haemorrhoids. The long-term outcome of this procedure however, remains to be established. We aim to analyse the long-term outcome of THD-mucopexy in the management of prolapsing haemorrhoids based on the evidence of a prospective data from a single institution.

Methods: A prospective data was collected on 100 consecutive cases of grade 3 and 4 symptomatic haemorrhoids between the period 03/2010 and 06/2015 who underwent the procedure as a day case under general anaesthetic. Overall median follow up was for two years with average age of 54.4 ranges from 34 to 79 and gender ratio of 61% Male and 39% Female. Pre-and postoperative symptoms were assessed with a view to evaluate the nature of complications and long-term recurrence rate.

Results:

	Preop	Post op (6 weeks)	Post op (6 months)	P value
Bleeding	74 (74%)	9	9	P<0.0001
Prolapse	31 (31%)	6	7	P<0.0001
Perianal pain	15 (15%)	3	2	P = 0.006
Discharge	5 (5%)	1	0	P = 0.21
Itching	2 (2%)	0	0	P = 0.47
Anal fissure (Healed)	4 (4%)	0	4	P = 0.71
Postoperative complications				
Bleeding 7 (7%)				
Pain 5 (5%)				
Urgency 1 (1%)				
Fistula 1 (1%)				
Discharge 2 (2%)				
Infection 3 (3%)				
Recurrence rate— 13 (13%)				

Conclusion: THD mucopexy is a safe and effective minimally invasive modality for prolapsing symptomatic haemorrhoids with acceptable complication rates and a recurrence rate of 13% majority of which could be dealt with a repeat procedure. Long terms follow up and randomised (THD VS

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Haemorrhoidectomy) multicentre trials are warranted to compare its efficacy with that of conventional excisional surgery.

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1. Introduction

Transanal haemorrhoidal dearterialisation (THD) and mucopexy has evolved in recent years as a popular minimally invasive non-excisional surgery for symptomatic prolapsing haemorrhoids. Morinaga et al. first described a procedure of haemorrhoidal artery ligation (HAL) for internal haemorrhoids with a newly devised instrument (the Moricorn) in conjunction with a Doppler device [1]. Dal Monte et al. subsequently described THD as we know it. It was described as a non-excisional surgical technique for the treatment of piles, consisting in the ligation of the distal branches of the superior rectal artery and patent venous drainage, resulting in a reduction of blood flow and decongestion of the haemorrhoidal plexus [2]. It works on the simple surgical principle that if the blood flow to an organ is reduced or cut -off that organ would reduce in size or die. The addition of a mucopexy deals with the attendant prolapse with these high degree haemorrhoids.

The importance of a simple, safe & effective procedure to treat the commonest disease affecting the ano-rectum cannot be over-emphasized. Lots of man hours and expenses have been lost because of this benign but debilitating condition. The management of this condition is one that would aid inflicted individuals the opportunity to contribute their own quota to nation building.

Several procedures & techniques have been proposed in the past of which some are still considered the cornerstone for management of haemorrhoidal disease. These are fraught with various complications which include post-operative pain, bleeding and more worryingly, faecal incontinence secondary to sphincter damage. Recurrence rates have also been proven to be quite high with these techniques.

THD, in principle, provided a suitable option for the treatment of haemorrhoidal disease with reduction in the risks associated with other procedures mainly bleeding and infection. THD is safe quick minimally invasive day case procedure with almost similar recurrence rates to other procedure.

The long-term outcome of this procedure however remains to be established especially that recent randomised controlled trial comparing haemorrhoidal artery ligation to rubber banding has shown that the latter is a safer, less painful and cheaper alternative [3]. We aim to analyse the long-term outcome of THD-mucopexy in the management of prolapsing haemorrhoids based on the evidence of a prospective data from a single institution.

2. Methods

Prospective data from colorectal database was collected on 100 consecutive cases of grade 3 and 4 symptomatic haemorrhoids between the period March 2010 and June 2015 who underwent the procedure as a day case under general anaesthetic. All cases were included with symptomatic piles including bleeding, prolapse, perianal pain, discharge itching and healed anal fissure. All patients had 3rd or 4th degree piles with or without previous treatments and intervention. Our team consist of senior surgeons and who are all trained in the procedure and have attended THD sponsored course. The instrument used for the procedure was the *trans*-anal Haemorrhoidal Dearterialisation (THD) kit which included anoscope with a Doppler sensor at the tip, Doppler machine, sutures

and a needle holder. Patients are routinely provided with THD information leaflet at the clinic and counselled and consented by a senior participating surgeon on the day of the procedure. The procedure commences with examination of ano-rectum in lithotomy position with a surgeon and 1 assistant. After confirmation of clinical findings, anoscope is inserted and connected to the Doppler machine to locate arterial pulsation signals. Once signal is detected, vessel ligation in submucosa is undertaken with needle holder, positioned appropriately in the anoscope, and confirmed by dampening of Doppler signals. Up to 6 vessels ligation is done with selective mucopexy to reduce the mucosal prolapse. Perianal local anaesthetic infiltration is used routinely at the end of the procedure. Patients are kept for routine post-operative care in recovery area and discharged home on the same day with 5 days of metronidazole and macrogol as laxative. Most patients get adequate relief of post-operative pain with NSAIDS. THD aftercare information leaflet is provided to patients on discharge with contact details for any enquiries. Initial follow up arranged at six weeks post operatively at our nurse lead clinic with a further follow up in six months at the consultant clinic.

3. Results

Overall median follow-up was for two years with 6 patients (6%) lost to follow-up. Average age of 54.4 ranges from 34 to 79 and gender ratio of 61% Male and 39% Female. Pre-and postoperative symptoms were assessed with a view to evaluate the nature of complications and long-term recurrence rate. Of 100 cases included in this study, the commonest pre-operative symptom was bleeding with 74 (74%) followed by prolapse 31 (31%) then perianal pain 15 (15%). Other less common pre-operative symptoms include discharge 5 (5%), itching 2 (2%), anal fissure 4 (4%).

The statistically significant pre-operative symptoms improved by THD were bleeding & prolapse both with P-values of <0.0001. This was followed by perianal pain & discharge both of which improved although not statistically significant. Importantly, the most common complication of THD was recurrence at about 13%.

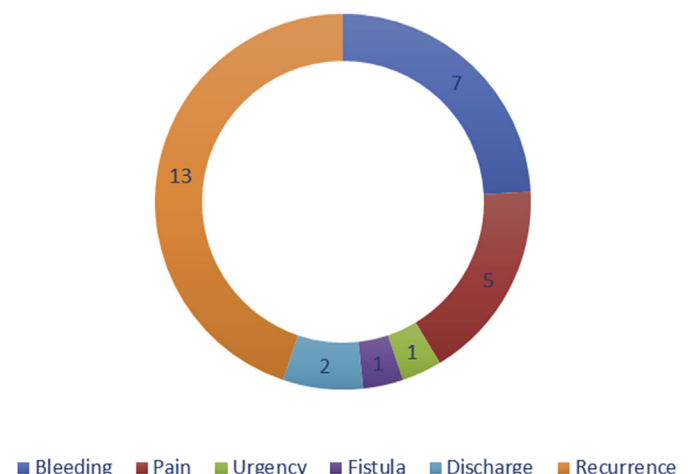


Fig. 1. Post operative complications.

Infective complications were evident in 3% of cases all of which responded to course of oral antibiotics (Fig. 1).

37 (88%) of the first 42 patients who were included in this study described >70% improvement in their symptoms with 10 of them citing a 100% improvement. Also 33 of 42 patients expressed satisfaction score of 4 and above on satisfaction scale questionnaire with 21 (63%) of them having maximum satisfaction of 5.

4. Discussion

Stefan Morarasu et al. proved the effectiveness of THD in reducing 4th degree prolapsed haemorrhoids as a safe one-day procedure with minimal-to-none pain and other early haemorrhoidectomy associated, postoperative symptoms [4]. Our paper aims to look at the long-term outcome of THD. The commonest complaint in patients with grade III & IV haemorrhoidal disease is bleeding of which our cohort was 74%. Post operatively, there was a marked improvement of bleeding as symptom which was down to 7 (7%). A systematic review of seventeen articles including a total of 1996 patients on all grades of THD reported an overall recurrence rate of 7.8% for bleeding [5] which tends to agree with our study.

Our rate of recurrence of 13% is almost similar to the work done by P. Giordano et al. whose rates were at 14% though while looking at grade II & III haemorrhoids [6]. P. Giordano et al. who performed THD with targeted mucopexy describe only one recurrence from a cohort of 31 patients with grade IV haemorrhoids [7]. P. Denoya et al. comparing haemorrhoidal recurrence and chronic complications at 3-year follow-up in grade III & IV cases describe a 16.7% recurrence rate for THD vs 6.7% rate for haemorrhoidectomy [8]. Again, the same mentioned systematic review of seventeen articles including a total of 1996 patients on all grades of THD reported an overall recurrence rate of 9% for prolapse [5]. Similar figures were seen in a French study looking at 61 patients with grade II & III haemorrhoids who were followed up at 1 month & 1 year. It describes a recurrence rate of haemorrhoidal disease at 10.5% during the first year after having Doppler-guided haemorrhoidal artery ligation (Doppler HAL™) [9].

Conversely, the first Danish study by S. Kjaer et al., a single-centre, non-controlled retrospective study comprising consecutive patients from January 2011 to January 2013, and the study had a maximum follow-up period of two years reports a recurrence rate of 36% (success rate 64%) [10]. This may have been due to a steep learning curve prior to patients being included in the study. There also appeared to be no difference in outcome in those who had mucopexy as in the group who did not.

In this series, 2 senior surgeons preformed the 100 procedures either as main surgeon or as a supervising scrubbed assistant to an experienced senior registrars. A learning curve is an important issue with all new procedures, but this was not observed in our data which demonstrated no significant increase in recurrence rate in the earlier part of the series. This may be explained by the fact that the main operating surgeon was adequately trained before being allowed to be in that role and constantly supervised by the two senior consultants.

Some patients did experience post-operative pain that delayed their discharge but none of the patients required an admission with an overnight stay and all were discharged on the same day. We routinely use local anaesthetic infiltration on completion of the procedure with one case of haematoma and sub mucosal abscess in the early stage of the series. NSAID are used for post-operative analgesia along with metronidazole for 5 days for control of post-operative pain and infection. Routine use of laxatives probably has contributed to smoother post-operative recovery and good compliance for all our patients.

Recent trial, compares rubber banding to haemorrhoidal artery

ligation [3], has concluded that banding is a suitable alternative to THD but that was for 2nd and 3rd degree piles, unlike our study which was principally for symptomatic 3rd and 4th degree prolapsing piles which had failed to respond or unsuitable (4th degree) to rubber band ligation. We do use rubber banding in our hospital for 2nd and early 3rd degree haemorrhoids and strongly affirm that banding is successful and appropriate for this group. However, it would be difficult to agree that banding is suitable alternative to THD for significant prolapsing haemorrhoids. Our result indicate THD-mucopexy is effective for symptomatic significantly prolapsing haemorrhoids.

There are certain limitations to our study most importantly it lacks a control group for comparison and obviously no randomisation. Data were collected prospectively but analysed retrospectively. Follow up protocol was set up in the beginning of the study and was adhered to in the initial stage of the study which included the first 42 patients. At that stage patient filled a satisfaction questionnaire for reproducible assessment. This was not possible at the second stage of the study due to service restrains, and it was found more difficult to keep follow up at the appropriate time. No questionnaire was filled for the second stage and some information was missing and had to be collected retrospectively by case notes search. There might be a degree of selection bias and confounding as certain patient information are lacking mainly ASA and comorbidities as well as previous haemorrhoid treatment and compliance. Although post-operative care plan was set initially, there were additions and changes in terms of antibiotics use, laxatives and analgesia most importantly use of local anaesthetic routinely at the later stages of the series.

5. Conclusion

THD mucopexy remains a safe and effective minimally invasive modality for prolapsing symptomatic haemorrhoids with acceptable complication and recurrence rate. Recurrence could be dealt with repeat procedure without any significant risk to patients.

Despite the recent controversy generated, it remains to be reiterated that appropriate case selection (symptomatic prolapsing haemorrhoids) forms the basis for a successful outcome as demonstrated in this series. It is hard to justify its use in non-prolapsing piles. Longer follow up and randomised multicentre trials with larger sample sizes are warranted to compare its efficacy with that of conventional excisional surgery.

Ethical approval

Ethical approval not required.

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Author contribution

Haytham Abudeeb: Study design, research, data collection, data analysis and writing.

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Jamshid Darabnia: Study design, data collection and data analysis.

Ahmed Hammad: Study Design, Data collection and data analysis.

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Elizabeth McNulty: Data Collection, data analysis.

Abdul Latif Khan: Study design, data analysis.

Arijit Mikherjee: Study design, data analysis and writing.

Conflicts of interest

No conflict of interest.

Guarantor

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