

Original Research

Analysis of tissue of stapled haemorrhoidectomy histopathologically

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ABSTRACT:

Background: Hemorrhoids, which are enlarged veins in the lower rectum or anus, are also referred to as piles. The present study was conducted to assess the tissue removed during stapled haemorrhoidectomy. **Materials & Methods:** 64 patients undergoing stapled haemorrhoidectomy of both genders were selected. Using a standardised histology methodology, resected tissue was histologically analyzed. Under a microscope, the presence or absence of stratified squamous, transitional, and columnar epithelium was observed. **Results:** Out of 64 patients, males were 36 and females were 28. Macroscopic appearance was rectangular in 34 and triangular in 30 cases. Mucosa was stratified squamous in 21, transitional mucosa in 26, columnar mucosa in 17 cases. The depth of the specimen contained smooth muscle in 39, and myenteric plexus, and longitudinal muscle in 25 cases. Features of mucosa prolapse had no prolapse in 28 cases, diamond-shaped crypts in 22, surface metaplasia in 3, muscularization of the lamina propria in 5 cases, disruption of the muscularis mucosae in 4, and thrombosis of superficial vessels in 2 cases. The difference was significant ($P < 0.05$). **Conclusion:** Stapled haemorrhoidectomy results in the removal of the stratified squamous mucosa or the internal anal sphincter in a significant proportion of patients.

Keywords: Hemorrhoids, veins, crypts

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INTRODUCTION

Hemorrhoids, which are enlarged veins in the lower rectum or anus, are also referred to as piles. They might be external, situated beneath the skin surrounding the anus, or internal, found inside the rectum.¹ Straining causes oedema by applying pressure to the veins in the lower abdomen. Chronic diarrhea or constipation may be a factor in the development of hemorrhoids. Extended periods of time spent immobile or sitting on the toilet might exacerbate vascular pressure in the anus.² Hemorrhoids can develop or worsen during pregnancy due to hormonal changes and increased pressure on the pelvic veins. Being overweight raises the risk of hemorrhoids by adding to the pressure on the rectal veins.³

Bright crimson blood on toilet paper or in the toilet bowl following a bowel movement are symptoms. Anal area irritation and itchiness. Pain or discomfort, particularly when sitting or having bowel movements.

swelling surrounding the anus, frequently with a lump or protrusion in tow.⁴ Mucus may flow from the anus in certain persons. Recently, encouraging preliminary results on the treatment of hemorrhoids with a circular stapling device have been published.⁴ A cylinder containing the submucosa and lower rectal mucosa is excised during this procedure, and the margins are anastomosed using a stapling tool.⁵ There is also the argument that the hemorrhoids' blood supply is severed instead of being eliminated by shrinking and "anchoring" them to the staple line.⁶ The present study was conducted to assess the tissue removed during stapled haemorrhoidectomy.

MATERIALS & METHODS

The present study consisted of 64 patients undergoing stapled haemorrhoidectomy of both genders. All patients gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Using a standardised histology methodology, resected tissue was histologically analyzed. Under a microscope, the presence or absence of stratified squamous, transitional, and columnar epithelium was

observed. By observing the presence of deep muscle, mucosae, muscularis mucosa, and submucosa, the depth of the removed tissue was ascertained. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 64		
Gender	Male	Female
Number	36	28

Table I shows that out of 64 patients, males were 36 and females were 28.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Macroscopic appearance	Rectangular	34	0.97
	Triangular	30	
Mucosa	Stratified squamous	21	0.74
	Transitional mucosa	26	
	Columnar mucosa	17	
Depth of specimen	smooth muscle	39	0.05
	myenteric plexus and longitudinal muscle	25	
Features of mucosa prolapse	No prolapse	28	0.04
	diamond shaped crypts	22	
	surface metaplasia	3	
	Muscularization of the lamina propria	5	
	disruption of the muscularis mucosae	4	
	thrombosis of superficial vessels	2	

Table II, graph I show that macroscopic appearance was rectangular in 34 and triangular in 30 cases. Mucosa was stratified squamous in 21, transitional mucosa in 26, columnar mucosa in 17 cases. The depth of the specimen contained smooth muscle in 39, and myenteric plexus, and longitudinal muscle in 25 cases. Features of mucosa prolapse had no prolapse in 28 cases, diamond-shaped crypts in 22, surface metaplasia in 3, muscularization of the lamina propria in 5 cases, disruption of the muscularis mucosae in 4, and thrombosis of superficial vessels in 2 cases. The difference was significant (P< 0.05).

Graph I Assessment of parameters

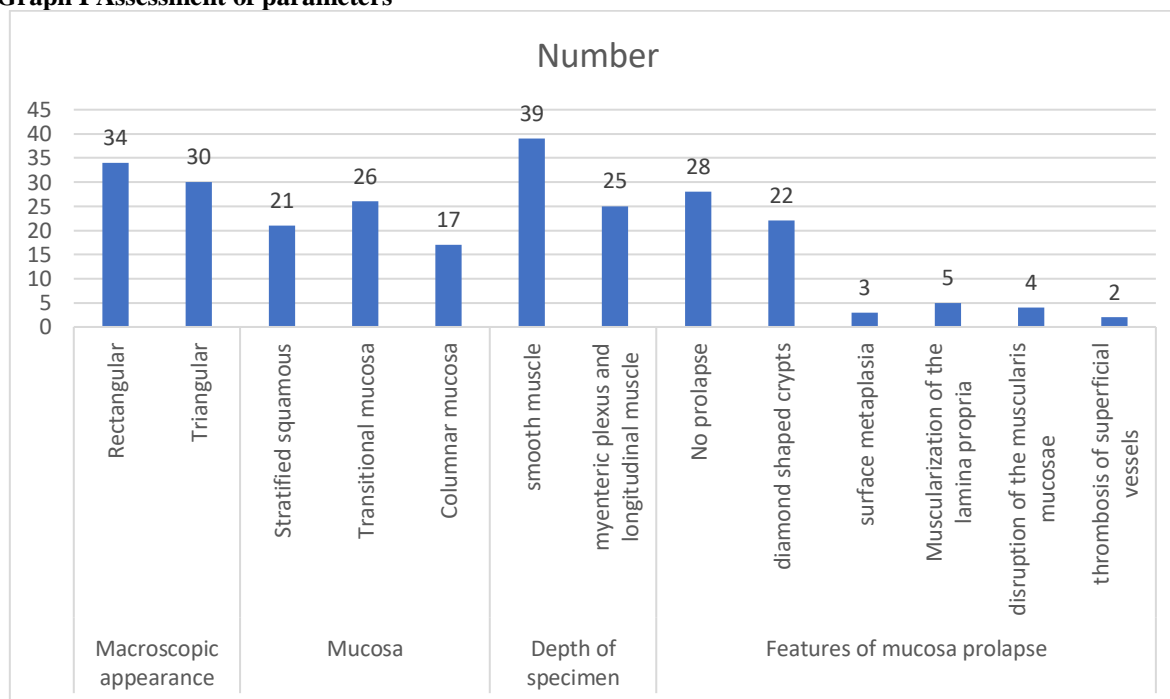


Table III Assessment of outcome

Outcome	Number	P value
Excellent	39	0.02
Good	20	
Fair	5	

Table III shows that the outcome was excellent in 39 patients, good in 20 patients, and fair in 5 patients.

DISCUSSION

Both medical professionals and patients are becoming more and more familiar with the stapled hemorrhoidectomy approach. Like many new methods, the initial results are promising yet unreliable.^{7,8} The possible safety and lack of pain associated with stapled hemorrhoidectomy are its main draws.^{9,10} Resecting the rectal mucosa alone spares the delicate anal canal, resulting in minimal postoperative pain and preservation of anal canal sensibility. The tissue that has been removed shouldn't contain any deep smooth muscle.^{11,12,13,14} There is a claim that if a tiny quantity is present, the internal sphincter would be replaced with rectal smooth muscle. The present study was conducted to examine the tissue removed during stapled haemorrhoidectomy.^{15,16} The present study was conducted to assess the tissue removed during stapled haemorrhoidectomy.

We found that out of 64 patients, males were 36 and females were 28. George et al¹⁷ examined the tissue removed during stapled haemorrhoidectomy, in particular to check on the presence or absence of transitional or squamous anal canal mucosa and internal anal sphincter muscle. Twenty-six consecutive patients undergoing stapled haemorrhoidectomy were studied. Resected tissue was examined histologically according to a standardized histological protocol. All 26 specimens contained columnar mucosa. Twelve specimens also contained anal transitional and stratified squamous epithelium. Two specimens contained columnar and transitional mucosa. Twenty-two of 26 specimens contained smooth muscle as well as mucosa (median maximum diameter 7.5 mm, range 2-20 mm). In 11 specimens this was circular muscle only; in 11 circular and longitudinal smooth muscle were present. In 10 specimens smooth muscle was seen to be lying beneath stratified squamous or transitional epithelium, suggesting that it was from the internal anal sphincter. Stapled haemorrhoidectomy results in resection of stratified squamous mucosa or part of the internal anal sphincter in a significant proportion of patients. Surgeons should be aware that this technique may result in damage to the internal anal sphincter.

We found that macroscopic appearance was rectangular in 34 and triangular in 30 cases. Mucosa was stratified squamous in 21, transitional mucosa in 26, columnar mucosa in 17 cases. The depth of the specimen contained smooth muscle in 39, and myenteric plexus, and longitudinal muscle in 25 cases. Features of mucosa prolapse had no prolapse in 28 cases, diamond-shaped crypts in 22, surface

metaplasia in 3, muscularization of the lamina propria in 5 cases, disruption of the muscularis mucosae in 4, and thrombosis of superficial vessels in 2 cases. Giardano et al¹⁸ assessed the long-term results of stapled hemorrhoidopexy (SH) compared with conventional hemorrhoidectomy (CH) and to define the role of SH in the treatment of hemorrhoids. Studies were scored according to the presence of 3 key methodologic features of randomization, blinding, and accountability of all patients, including withdrawals, and the scores ranged from 0 to 5. Studies that received a score from 3 to 5 were considered high-quality studies, whereas those with a score of 2 or less were considered of low quality. A specifically designed data form was used to collect all relevant data, including details of the experimental design, patient demographics, technical aspects, outcome measures, and complications. Fifteen articles met the inclusion criteria for a total of 1201 patients. Outcomes at a minimum of 1 year showed a significantly higher rate of prolapse recurrences in the SH group (14 studies, 1063 patients; odds ratio, 5.5; $P < .001$) and patients were more likely to undergo further treatment to correct recurrent prolapses compared with the CH group (10 studies, 824 patients; odds ratio, 1.9; $P = .02$).

Silva et al¹⁹ evaluated the association between histological findings suggestive of injury by the virus in hemorrhoidectomy specimens. Of the 91 hemorrhoidectomy specimens analyzed, eight had findings suggestive of viral cytopathic effects, with the presence of irregular acanthosis in 63%, koilocytes in 50%, and other indirect viral cytopathic effects, such as hyperkeratosis (38%), parakeratosis (25%) and papillomatosis (13%).

The limitation of the study is the small sample size.

CONCLUSION

Authors found that stapled hemorrhoidectomy results in the removal of the stratified squamous mucosa or the internal anal sphincter in a significant proportion of patients.

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