

Original Research

Histopathological assessment of tissue of stapled haemorrhoidectomy

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ABSTRACT:

Background: Hemorrhoids, also known as piles, are swollen veins in the lower rectum or anus. The present study was conducted to examine the tissue removed during stapled haemorrhoidectomy. **Materials & Methods:** 56 consecutive patients undergoing stapled haemorrhoidectomy of both genders were selected. Resected tissue was examined histologically according to a standardized histological protocol. The existence or lack of stratified squamous, transitional, and columnar epithelium was seen under a microscope. **Results:** Out of 56 patients, males were 24 and females were 32. The macroscopic appearance was triangular in 30 and rectangular in 26 cases. Mucosawas columnar mucosa in 24, transitional mucosa in 20, and stratified squamous in 12 cases. The depth of the specimen contained smooth muscle in 34, myenteric plexus, and longitudinal muscle in 22. Features of mucosa prolapse had no prolapse in 15 cases. muscularization of the lamina propria in 21, disruption of the muscularis mucosae in 6, diamond-shaped crypts in 8, surface metaplasia in 4, and thrombosis of superficial vessels in 2 cases. The outcome was excellent in 42 patients, good in 10 patients, and fair in 4 patients. The difference was significant ($P < 0.05$). **Conclusion:** In a considerable number of individuals, stapled hemorrhoidectomy leads to the excision of the internal anal sphincter or the stratified squamous mucosa.

Keywords: Hemorrhoids, Piles, muscularis mucosae

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INTRODUCTION

Hemorrhoids, also known as piles, are swollen veins in the lower rectum or anus. They can be internal, located inside the rectum, or external, located under the skin around the anus. Straining puts pressure on the veins in the rectal area, leading to swelling.¹ Chronic constipation or diarrheacan contribute to the development of hemorrhoids. Prolonged sitting on the toilet or in a stationary position can increase pressure on the veins in the anus. Hormonal changes and the increased pressure on the pelvic veins during pregnancy can lead to the development or worsening of hemorrhoids. Excess weight can put additional pressure on the rectal veins, increasing the risk of hemorrhoids.²

Symptoms are bright red blood on toilet paper or in the toilet bowl after a bowel movement. Irritation and itching in the anal region. Pain or discomfort especially during bowel movements or when sitting.³ Swelling around the anus, often accompanied by a lump or protrusion. Some people may experience

mucus leaking from the anus. Recently, a circular stapling device for treating hemorrhoids has been reported, showing promising initial results.⁴ During this process, a cylinder of the submucosa and lower rectal mucosa is removed, and a stapling tool is used to anastomose the margins. It is also claimed that by reducing and "anchoring" the hemorrhoids to the staple line, their blood supply is cut off rather than being removed.^{5,6} The present study was conducted to examine the tissue removed during stapled haemorrhoidectomy.

MATERIALS & METHODS

The present study consisted of 56 consecutive patients undergoing stapled haemorrhoidectomy of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Resected tissue was examined histologically according to a standardized histological protocol. The existence or lack of stratified squamous,

transitional, and columnar epithelium was seen under a microscope. It was determined how deep the tissue excised was by noting the existence of deep muscle,

mucosae, muscularis mucosa, and submucosa. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 56		
Gender	Male	Female
Number	24	32

Table I shows that out of 56 patients, males were 24 and females were 32.

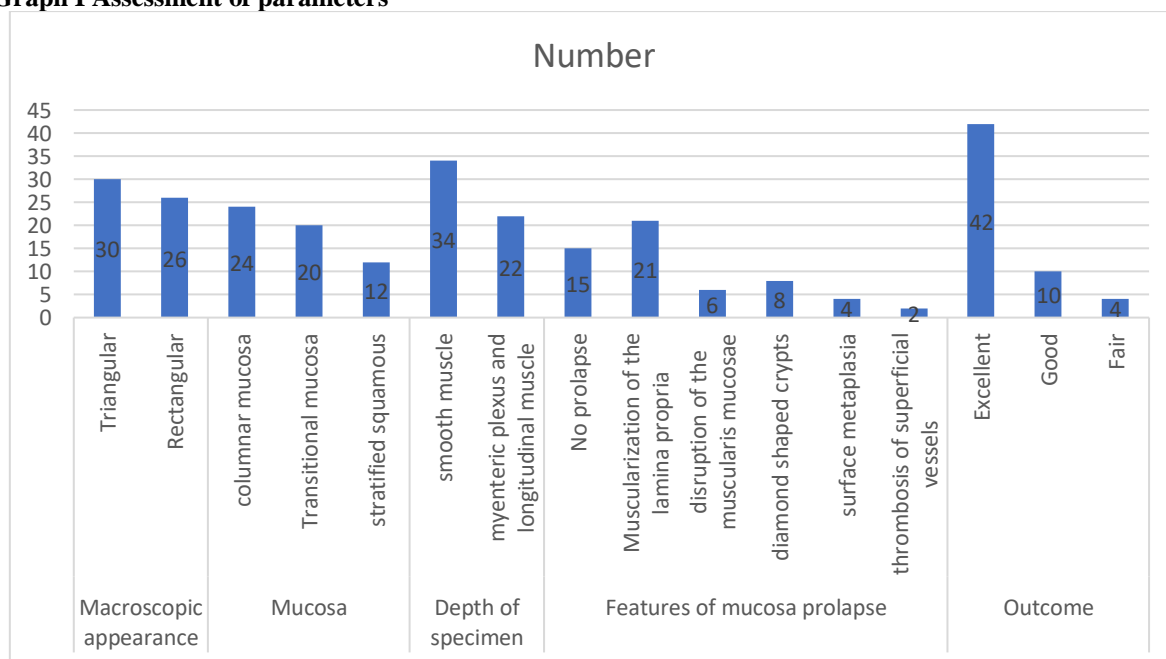
Table II Assessment of parameters

Parameters	Variables	Number	P value
Macroscopic appearance	Triangular	30	0.82
	Rectangular	26	
Mucosa	columnar mucosa	24	0.05
	Transitional mucosa	20	
	stratified squamous	12	
Depth of specimen	smooth muscle	34	0.05
	myenteric plexus and longitudinal muscle	22	
Features of mucosa prolapse	No prolapse	15	0.02
	Muscularization of the lamina propria	21	
	disruption of the muscularis mucosae	6	
	diamond shaped crypts	8	
	surface metaplasia	4	
	thrombosis of superficial vessels	2	
Outcome	Excellent	42	0.05
	Good	10	
	Fair	4	

Table II, graph I show that macroscopic appearance was triangular in 30 and rectangular in 26 cases. Mucosa was columnar mucosa in 24, transitional mucosa in 20, and stratified squamous in 12 cases. The depth of the specimen contained smooth muscle in 34, myenteric plexus, and longitudinal muscle in 22. Features of mucosa prolapse had no prolapse in 15

cases. muscularization of the lamina propria in 21, disruption of the muscularis mucosae in 6, diamond-shaped crypts in 8, surface metaplasia in 4, and thrombosis of superficial vessels in 2 cases. The outcome was excellent in 42 patients, good in 10 patients, and fair in 4 patients. The difference was significant (P< 0.05).

Graph I Assessment of parameters



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} 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.^{13,14,15} The present study was conducted to examine the tissue removed during stapled haemorrhoidectomy.

We found that out of 56 patients, males were 24 and females were 32. Silva et al¹⁶ evaluated the association between histological findings suggestive of injury by the virus in hemorrhoidectomy specimens. Of the 91 hemorrhoidectomy's 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%).

We found that macroscopic appearance was triangular in 30 and rectangular in 26 cases. Mucosa was columnar in 24, transitional mucosa in 20, and stratified squamous in 12 cases. The depth of the specimen contained smooth muscle in 34, myenteric plexus, and longitudinal muscle in 22. Features of mucosa prolapse had no prolapse in 15 cases. Muscularization of the lamina propria in 21, disruption of the muscularis mucosae in 6, diamond-shaped crypts in 8, surface metaplasia in 4, and thrombosis of superficial vessels in 2 cases. The outcome was excellent in 42 patients, good in 10 patients, and fair in 4 patients. 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. 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. Santos et al¹⁸ analysed 2,840 cases of hemorrhoidectomy by open techniques of Milligan-

Morgan (2,189 cases), Ferguson (341 cases) and mixed (310 cases) in 11,043 patients with hemorrhoidal disease (HD) allowed the following conclusions. The patients' acceptance of surgical indications for hemorrhoidectomy was 25.7%. Hemorrhoidectomy was more common among women (53.8%) than men (46.2%), and more accepted by women (26.5%) than men (24.8%). Hemorrhoidectomy was more common in patients of the fourth (27.7%), fifth (21.9%) and third (21.0%) decades of age. Most patients who agreed to undergo hemorrhoidectomy were those of the second (38.2%), eighth (35.9%) and ninth (34.5%) decades of age. The overall incidence of surgical complications was 3.0% (87 cases): anal stenosis (1.8%), bleeding (0.8%), worsening of anal hypotonia (0.2%), sepsis (0.1%) and systemic complications (0.1%), with no difference among the techniques used. The incidence of surgical complications by Milligan-Morgan technique was 3.0% - stenosis (1.9%), bleeding (1.9%), worsening of anal hypotonia (0.2%) and systemic complications (0.04%). The incidence of surgical complications by Ferguson's technique was 3.5% - stenosis (1.7%), bleeding (0.6%), worsening of anal hypotonia (0.6%) and sepsis (0.6%). And the incidence of surgical complications by mixed techniques was 2.5% - stenosis (1.0%), bleeding (0.3%), worsening of anal hypotonia (0.3%), sepsis (0.3%) and systemic complications (0.3%). The incidence of surgical complications according to gender was 3.0% among women and 3.2% among men, with higher incidence of stenosis in women (2.0%) and hemorrhage in men (1.1%). Surgical complications were more observed in the eighth (5.1%) and seventh (3.8%) decades of age. The incidence of anal stenosis was 1.8%, being 64.0% without hypotonia and 66.0% without anal fissure (66.0%), with annular stenosis as the most common anatomical shape (70.0%). Anal stenosis was more common among women (2.0%) presenting mean age of 38.2 years, with no relation to age decades. The most common technique for anal stenosis was single anotomy without sphincterotomy (46.0%). All cases of anal bleeding had surgical ligation of all hemorrhoidal pedicles, no matter if the bleeding site was found or not.

The limitation of the study is the small sample size.

CONCLUSION

Authors found that in a considerable number of individuals, stapled hemorrhoidectomy leads to the excision of the internal anal sphincter or the stratified squamous mucosa.

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