

A Study of Post Operative Haemorrhoidectomy Complications

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Abstract: A haemorrhoidectomy is standard treatment for patients with grade III or IV haemorrhoids. In order to compare outcomes of symptomatic grade III and grade IV haemorrhoids treated with Milligan Morgan's open as well as Ferguson's closed approach: • Postoperative pain • Postoperative bleeding • Postoperative infection • Postoperative urinary retention • Anal stenosis • Anal incontinence • Duration of hospital stay.

Keywords: Haemorrhoidectomy, Milligan - Morgan open haemorrhoidectomy and the Ferguson closed haemorrhoidectomy, Complications

1. Introduction

Proctologic disorders have existed since the dawn of time. They encompass a variety of disorders that cause severe patient discomfort. [1] Symptomatic expansion as well as protrusion of normal anal cushions is known as haemorrhoid disease. [1] Peak prevalence occurs between 45 & 65 yrs age. [2] Patients having grade III or IV haemorrhoids are typically treated with hemorrhoidectomy. Milligan - Morgan open haemorrhoidectomy, as well as the Ferguson closed haemorrhoidectomy, are the conventional methods of haemorrhoidectomy described. Using a scalpel and electrocautery, haemorrhoid tissue is removed, pedicle is ligated, as well as defect is either left open (Milligan - Morgan) or closed (Ferguson).

Postoperative pain is the most serious complication. [3] Postoperative bleeding, anal stenosis, and anal incontinence are all possible complications. Open hemorrhoidectomy is still the preferred surgery because of its low cost and convenience of use, despite the introduction of innovative modalities.

2. Materials and Methods

Present research was carried out in a tertiary care centre during a 2yr period, from October 2019 - October 2021. All patients with a history of haemorrhoids who visited the out - patient department of General Surgery at this tertiary care facility were screened. Per rectal bleeding, perianal pain, and prolapse were the common symptoms. The patients diagnosed having grade III or IV haemorrhoids who had been willing to undergo surgery were enrolled in the study. A comprehensive history has been gathered and examined thoroughly, encompassing external examination, digital rectal examination, and examination using a proctoscope.

Inclusion Criteria:

- Symptomatic grade III or IV haemorrhoids.

Exclusion Criteria:

- Grade I and Grade II haemorrhoids

- Per rectal bleeding associated with growth.
- All patients with per rectal bleeding with bleeding diathesis.
- Patient not willing for surgical treatment.

Following the screening process, eligible individuals were informed about the processes as well as the study concept. After obtaining proper consent, participants were enrolled in the study. Simple non - random sample procedure was used to allocate patients to one of the 2 groups: Group - A (open haemorrhoidectomy) or Group - B (closed haemorrhoidectomy).

Results: Forty - six patients underwent haemorrhoidectomy in a tertiary care centre. Based on the hemorrhoidectomy technique, these 46 patients were split into two groups. Patients operated by open haemorrhoidectomy were included in group A whereas closed haemorrhoidectomy patients were included in group B. Postoperative complications were then utilized to compare these 2 groups.

Most common age group was 31 - 40 (12 patients). Youngest patient was 16 yrs old, while oldest was 75 yrs having a mean age 46.14 years. Males were affected more than females. In the current study, out of a total of 46 patients, 28 had Grade III as well as 18 had Grade IV haemorrhoids. Among 28 patients having Grade III haemorrhoids 21 had been operated on by open method and seven by closed method. Among 18 patients having Grade IV haemorrhoids ten had been operated by open method and eight by closed method.

Procedure	Group A (%)	Group B (%)	Total NO. (%)
Post procedural bleeding p=0.11			
Yes	16 (53.3%)	4 (20%)	20 (43.4%)
No	14 (46.6%)	12 (80%)	26 (56.6%)
Total	30	16	46
Post operative infection x2=1.915 p=0.166			
Yes	2 (6.6%)	3 (18.75%)	5 (10.8%)
No	28 (93.3%)	13 (81.2%)	41 (89.1%)
Total	30	16	46
Post operative urinary retention x2=2.681 p=0.102			
Yes	5 (16.6%)	4 (25%)	9 (19.5%)
No	25 (83.3%)	12 (75%)	37 (80.4%)

Total	30	16	46
Post operative Anal incontinence $\chi^2=0.002$ $p=0.968$			
Yes	4 (13.3%)	2 (12.5%)	6 (13.04%)
No	26 (86.6%)	14 (87.5%)	40 (86.9%)
Total	30	16	46
Post operative Anal stenosis $\chi^2=2.261$ $p=0.132$			
Yes	3 (10%)	4 (25%)	7 (15.21%)
No	27 (90%)	12 (75%)	39 (84.78%)
Total	30	20	46
Post operative need of analgesia			
Yes	23 (76.66%)	10 (62.5%)	33 (71.7%)
No	7 (23.33%)	6 (37.5%)	13 (28.2%)
Total	30	16	46
Post defaecation pain			
At 24 hours	7.10+/- 1.076	7.00+/- 0.655	<0.001
At 48 hours	5.03+/- 0.983	4.87+/- 0.834	<0.001
At 24 hours	7.10+/- 1.076	7.00+/- 0.655	<0.001
Duration of wound healing $\chi^2=15.112$ $p<0.001$			
2 - 4 weeks	10 (33.3%)	14 (87.5%)	24 (52.17%)
>4 weeks	20 (66.6%)	02 (12.5%)	22 (47.82%)
Total	30	16	46

3. Discussion

Postoperative Complications: Anorectal pathology is common all around the world, with the majority of anorectal problems being temporary and resolves with medical treatment. However, no procedure is without danger, and problems after anorectal surgery are common, with rates as high as 50% in certain studies. A total of 87 surgical complications (3percent) were identified in 2840 haemorrhoidectomy processes in study conducted in Brazil in 2012 by Guilherme de Almeida Santos et al. [6]

1) Postoperative haemorrhage: Bleeding is the most common early postoperative consequence after haemorrhoidectomy. About 1% of instances involve early postoperative bleeding (less than 24 hours), which is a technical error that necessitates returning to the operating room to suture the problematic wound. [19] Between 0.5% and 4% of excisional hemorrhoidectomy subjects had delayed hemorrhage 5–10 days after surgery. [22–20]. Ligated pedicle's early separation before sufficient thrombosis in feeding artery has been identified as aetiology. [23] Bleeding in this situation is typically severe and necessitates a strategy to manage ongoing hemorrhage. Anal packing or returning to operating room for bedside tamponade or suture ligation employing Foley's catheter are options. [23 - 25] Following the control of secondary hemorrhage, prognosis is usually favorable and there is almost no chance of further bleeding. In a 2009, Armstrong et al., didn't observe early (primary) postoperative haemorrhage in any patient, however 3 patients (0.6 %) had a secondary haemorrhage 7 - 14 days after surgery. [8] In 1997, Neto et al., observed 5% postoperative bleeding in the open procedures while it was 9% in the closed treatments. [9]

2) Postoperative pain: Postoperative pain haemorrhoidectomy is most prevalent consequence after the most common reason for patient discharge postponement is pain. It was observed that patients with pain take 4 - 16days to return to usual activities. Increased opioid doses, urinary retention, postoperative nausea and vomiting, and readmissions are all linked to insufficient pain control.

Mechanism: 1) Haemorrhoids contribute 15–20% of maximal resting pressure (MRP) by serving as vascular cushions and conformable stopper, guarantee full closure of anal canal. Function of anal sphincter mostly determines MRP, whereas mean squeeze pressure (MSP) is solely determined by external anal sphincter. Ultraslow wave activity (USWA) is a term used to describe intrinsic contraction of smooth muscles. Patients having hemorrhoids have higher MRP and USWA than controls. This is owing to internal anal sphincter's aberrant hypertonicity.2) Contributing element in producing pain in people having haemorrhoids is postoperative spasm of internal anal sphincter. Following hemorrhoidectomy, internal anal sphincter's pressure is at its maximum. This produces pain, which increases the pressure to rise even higher, creating a vicious cycle.3) Painful sensations are produced by manipulating sensitive mucosa distal to dentate line, which activates stretch as well as somatic pain receptors. Symptoms will worsen as a result of epithelial denudation brought on by poor wound healing.4) Another theory is that pain is brought on by transfixed pedicle covering mucosa and smooth muscle fibres. Numerous aspects, encompassing anaesthesia used, postoperative analgesia, surgical technique, soft stools' early defecation, and subjective pain threshold, influence the level of discomfort experienced. Visual Analogue Scale (VAS) is a frequently used tool for assessing postoperative pain after haemorrhoidectomy. Severe pain is felt primarily during the initial motion of defaecation, especially the first one, although discomfort during the first 24 - 48 hours following surgery is typically manageable or negligible. [5] Additionally, it seems that Oval or pear - shaped open haemorrhoidectomy wounds heal more readily than slits with loose edges. Following surgery, these unnecessary edges frequently swell and become oedematous, resulting in uncomfortable skin tags. [5]

3) Postoperative urinary retention: With a reported prevalence ranging from 1 to 52 percent, urinary retention is a frequently encountered side effect after anorectal surgery. Urinary retention is significantly more common after hemorrhoidectomy than after other anorectal procedures such lateral sphincterotomy or fistulotomy. Prior to treating rectal condition, it may be prudent to do initial surgery to treat the prostate if patient has an advanced prostate type, since this increases the risk of urinary problems. [5] Mechanism of urinary retention: Postoperative discomfort is a significant contributing component to multifactorial cause of urine retention. Whether performed using the closed Ferguson approach or the open Milligan - Morgan method, conventional hemorrhoidectomy (CH) is regarded as a very painful operation. Aside from making patients extremely anxious and afraid, severe postoperative pain is a primary source of morbidity and prolongs hospital stays. According to the Zaheer et al study, hemorrhoidectomy was the single most significant factor influencing urine retention. Following hemorrhoidectomy, lateral internal sphincterotomy, and fistulotomy, incidence of postoperative urine retention was 34%, 4%, and 2%, respectively. [11] Chik et al showed that 15.2 percent of patient experienced postoperative urinary retention following haemorrhoidectomy. [12] Mala TA et al (2017) [7] and Armstrong et al [8] also showed similar reports.

4) Postoperative anorectal incontinence: Anorectal incontinence is rarely mentioned because it is uncommon or because determining its severity is difficult. What one study may deem mild soiling; another may deem low - grade incontinence. Mechanism: 1) After haemorrhoidectomy, incontinence is frequently associated with partial or full - thickness internal anal sphincter injuries, as well as external sphincter abnormalities. 2) Incontinence was observed in patients with intact sphincters, as haemorrhoidal cushions are known to contribute 15% patient's resting anal tone, as well as their removal could reveal incontinence difficulties that these cushions had facilitated. 3) Haemorrhoidal excision with subsequent healing may result in diminished sensitivity as well as anorectal discrimination capacity. [13]

5) Intraoperative blood loss: Mala TA et al (2017) [7] observed blood loss during surgery from 7 to 15 ml in the case study of 25 patients, with a mean 8.96 ± 2.15 ml. Blood loss has been assessed by counting total number of gauze pieces that had been weighed before as well as after surgery, with 1g weight equal to 1ml. Waleed Omar et al (2011) observed loss of blood ranging from 0 to 20ml, with mean 13 ± 3 ml in case study of 36 patients. [14]

6) Postoperative anal stricture/stenosis: Anal stricture as well as stenosis are most prevalent following haemorrhoidectomy, though they can happen after any anal surgery. In 1 to 7.5 percent of patients, stenosis can complicate stapled or radical haemorrhoidectomy. Injury to underlying anal sphincter muscle may occur, resulting in severe and progressive stenosis. Faecal impaction as well as overflow incontinence can also be caused by anal stenosis. Degree of stricture as well as the extent of anal canal involvement can be utilized, classifying anal stenosis. If malignant cause of stenosis has been ruled out, an asymptomatic patient may not always need intervention. Symptom severity, not stenosis severity, determines how anal stenosis is managed.

Severity of Stricture	
Mild	A retractor or well - lubricated index finger can be utilized to examine tight anal canal.
Moderate	Inserting retractor or index finger requires forceful dilatation.
Severe	Without strong dilatation, neither the little finger nor the little retractor can be entered.

Level of Stricture	
Low	At least 1cm below dentate line
Middle	0.5cm proximal or distal to dentate line
High	More than 0.5cm proximal to dentate line

Dietary changes, stool softeners, and fibre supplements are frequently used to treat mild strictures. Surgery will be required for patients having moderate to severe strictures, haven't responded to conservative treatment. To determine appropriate surgical technique, it is necessary to decide on how the anoderm differs in involvement from underlying anal sphincter complex. A unilateral or bilateral sphincterotomy may be needed if a patient has a fibrotic internal sphincter and a healthy anoderm. [12, 13] For individuals with anoderm stenosis, healthy tissue must be inserted into anal canal to replace lost or diseased nonpliable anoderm having elastic as well as compliant neo - anoderm. [38, 39]

7) Formation of skin tags: Postoperative discomfort can also be caused by the development of painful skin tags and oedema in the perianal area next to hemorrhoidectomy sites. In order to minimize them, it is advised that all loose wound edges be clipped to leave an open, flat wound. There is a limit to the use of this approach; nevertheless, as occasionally the entire skin - mucosa bridge between two nearby hemorrhoidectomy incisions becomes slack and redundant, resulting in haematological swelling. This edematous swelling can also be lessened with the use of a T - shaped bandage and a firm dressing pad. When oedema eventually goes down, noticeable margins of skin remnant can settle down to a normal look or develop fibroses to create a permanent skin tag. [5]

4. Conclusion

The aforementioned findings lead us to the conclusion that closed group experienced much less early postoperative haemorrhage, early postoperative pain, and post - defecation pain than open group. The closed group's postoperative wounds healed more quickly than the open group's. Other surgical consequences, like anal incontinence, postoperative anal stenosis, and postoperative urine retention, didn't, however, differ statistically significantly between two groups.

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