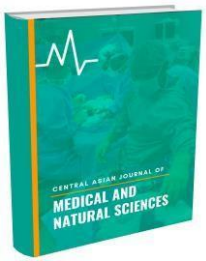

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Article

Reduction of Incidence of Early Postoperative Complications of Anal Surgery for Benign Anorectal Diseases

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Abstract: The anal canal, the final 4 cm of the alimentary tract, is commonly affected by anorectal conditions such as fissures, fistulas, and hemorrhoids, which may require surgical intervention. This study aimed to assess the incidence and timing of early postoperative complications following surgery for benign anorectal diseases, including hemorrhoids, anal fissures, and low-type fistula-in-ano. Conducted on 840 patients aged 20–65 years between August 2017 and May 2023, the study found that hemorrhoid surgery was the most frequent procedure associated with early complications (4.8%), followed by anal fissure surgery (0.7%), and fistulotomy (0.3%). The most common complication was urinary retention within the first 48 hours (2%), followed by thrombosed external hemorrhoids (1.5%), constipation (1%), fissures (0.47%), infection and abscess formation (0.46%), and clinically significant hemorrhage (0.36%). These findings highlight the importance of skilled surgical intervention to manage complications and improve patient outcomes following anorectal surgery.

Keywords: Anorectal, Complications, Fistula, Fissure, Hemorrhoid, Pile and postoperative

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1. Introduction

Anorectal conditions affect the anus and rectum. Fissures, fistulas, condyloma and hemorrhoids are among the most common anorectal conditions. In some cases, symptoms like pain, itching, burning, bleeding and/or swelling can significantly affect a patient's lifestyle. While most conditions are benign, a careful evaluation by a specialist is important to exclude anal cancer or another serious disorder . Knowledge of these disease processes is essential for proper treatment and follow up. Hemorrhoids and fissures frequently benefit from non-operative treatment; they may, however, require surgical procedures. The treatment of anorectal abscess and fistulas is mainly surgical [1].

The anal canal is the last 4 cm of the alimentary tract. It begins above as a continuation of the rectum. Its actual level is marked by a strong fibromuscular ring that can be felt rectally in normal subjects then the canal terminates at the anal margin [2,3]. Hemorrhoidal illness is the oldest and most prevalent anal disease in the world, making it one of the most prevalent disorders in surgical clinics [4]. HEMORRHOIDS can be internal or external. External hemorrhoids are distal to dentate line and are covered with endoderm [5]. The etiology of hemorrhoids includes many factors such as constipation and prolonged

straining [6]. The most difficult issues in the treatment of hemorrhoids continue to be post-procedural discomfort and disease recurrence [7].

Anal fissure is a longitudinal tear in anoderm below the dentate line, which is mostly located posteriorly in the midline [8] It is one of the most common benign diseases of anorectal area, and due to the severe pain during the defecation and emotional stress that it causes, it may also lower people's quality of life [9]. The etiology is still unclear. However, it is considered to be associated with the significant increase in sphincter pressure (even at rest) with the passage of hard stool [10].

Perianal fistula is a track, lined by granulation tissue that connects deeply in the anal canal or rectum and superficially on the skin around the anus [11]. The categorization of anal fistula depends on its location relative to the anal sphincter muscles. According to Parks classification, the anal fistulae are classified into inter-sphincteric, trans-sphincteric, supra-sphincteric, or extra-sphincteric [12]. fistulae commonly occur in people with a history of anal abscesses. They can form when anal abscesses do not heal properly [13]. The management of perianal fistula remains surgical although the evolving of newer methods of minimally invasive treatment. Conventional fistulotomy (lay open of the fistula tract) is a commonly used procedure and is still relied on by the majority of surgeons as the gold standard for the treatment of perianal fistula [14].

Aims of study

1. Incidence detection of early postoperative complications of benign anorectal diseases surgery.
2. Occurrence time detection of early postoperative complications of benign anorectal diseases surgery.
3. Detection of benign anorectal disease surgery associated with more early postoperative complications

2. Materials and Methods

This prospective study was conducted on patients with benign anorectal diseases (pile , anal fissure and low type fistula in ano) attending private clinic between August 2017 and May 2023 on 840 patients of age group (20 – 65) years old . patients were divided into three groups : Group 1: 480 patients with pile disease treated by bipolar energy device for coagulation of hemorrhoid and pedicle . Group2 : 230 patients with low type fistula in ano treated by fistulotomy procedure . Group 3: 130 patients with anal fissure treated by lateral sphincterotomy (52 patients) and anal dilatation by dilator (78 patients). Detailed clinical history was taken in all the patients with particular reference to bleeding per rectum, constipation, prolapse, painful defecation discharge per rectum, dietary habits, and family history [15].

Detailed general physical exam was done in all. Each patient was subjected to local examination proctoscopy and colonoscopy was carried out for all patients with bleeding per rectum without obvious bleeding points from pile at time of examination . All the patients were given enema in the evening and the morning before surgery. written informed consent was obtained from patients . Patients were informed about the study , procedures and complications of surgery. All the patients were advised to call doctor and visit clinic in case of any complication in the form of bleeding per rectum, pain, fever, swelling, discharge, etc. All patients were followed up for 2 months.

Table[1] demonstrates the distribution of study patients into 3 groups according to the type of benign anorectal disease presentation and type of surgical treatment.

Table 1. Distribution of study patients according to presentation of benign anorectal diseases type of surgical treatment and age.

Groups of patients according to benign anorectal diseases	Total No. 840 Pts	Type of surgical procedure	Age
Group No.1 : Pile disease	480	Bipolar energy device for coagulation of hemorrhoid and pedicle	20-65 ys
Group No.2: Low type fistula-in-ano	230	fistulotomy procedure	20-65 ys
Group No.3: Anal fissure	130	1.Lateral sphincterotomy in (52) pts. 2.Anal dilataion in by dilators (78) pts	20-65ys

3. Results

Hemorrhoid surgery is a commonest anorectal procedure associated with early postoperative complications (4.8%), Anal fissure surgery second anorectal procedure associated with early postoperative complications(0.7) and fistulotomy least procedure associated with early postoperative ecomplications(0.3%) [16]. Urine retention in present study is the most frequent early postoperative complication occur within first 48 hour, in 17 patients (2%) , most of the cases were resolved by warmth application and relevant advices except 2 cases need urethral catheterization and 2 cases need medical treatment for prostatic enlargement . Most cases of urine retention associated with pile surgery when compared with other anorectal procedures ; 16 cases related to pile surgery , 1 cases related to fissure surgery and no cases related to fistula surgery[17].

Most of cases had simple bleeding but we concentrate on clinically significant hemorrhage that need follow up with intervention it was occur in 3 cases(0.36%). All cases clinically significant bleeding were related to pile surgery not related to other anorectal diseases surgery , develop in 5-8 postoperative days, managed by returned to operating room with hemorrhoid pedicle and bleeding point suturing was done. Rate of infection and abscess formation after anorectal surgery had been reported in 3 patients (0.46%); 2 cases related to pile surgery,2 cases related to fissure surgery (lateral sphincterotomy) , occur in 4-6 days after surgery , treated by abscess evacuation and cover antibiotics [18].

Thrombosed external hemorrhoids occur in 2-4 postoperative days , develop in 13 patients (1.5%) ; 8 cases(1.6%) related to pile surgery , 2 cases(1.5%) related to fissure surgery, 3 cases(1.3%) related to fistula surgery. It approximately developed at same incidence in all anorectal diseases surgery . Most of them were treated conservatively and minority need clot evacuation with underlying hemorrhoid treatment [19].

During healing process of hemorrhoidectomy wound observed ,the anal fissures develop in 4 patients (o.47%) occur in 7-10 postoperative days, cases respond to dietary advice, avoid constipation and local treatments .

Also constipation was develop in 1-3 postoperative days in 9 patients (1%) , 8 cases related to pile surgery , 1 case related to fissure surgery. Severe constipation after hemorrhoidectomy has the highest rates reported than other anorectal diseases surgery . A fear of bowel movements and associated pain can lead to functional constipation. Opioid consumption also plays a major role. Cases treated by dietary advice ; increase water consumption , high fiber diet and medical treatment.

Table(2) demonstrateS the rate of early postoperative complications according to patient benign anorectals disease groups and type of surgical treatment [20].

Table 2. The rate of early postoperative complication in according to type of benign anorectal disease and type of surgical treatment.

Type of Early postoperative complication	Group(1) Pile disease treated with hemmorhoid -ectomy	Group(2) Anal fissure treated with Lateral sphincterotony or anal dialtation	Group(3) Low type fistula in-ano treated with fistulotomy	Total No. of early postoperative complications
Urine retention	16 pts	1 pt	0	17 pts (2%)
Significant Bleeding needs surgical intervention	3 pts	0	0	3 pts (0.36%)
Infection and abscess	2 pts	2 pts	0	4pts (0.46%)
Thrombosed external pile	8 pts	2 pts	3 pts	13pts (1.5%)
Post-hemmorhoidecto my anal fissure	4 pts	0	0	4 pts (0.46%)
Constipation	8 pts	1 pt	0	9 pts (1%)

4. Discussion

Urinary retention is the most observed complication after anorectal surgey in our study , also same in other studies ; Urine retention is one of the most frequent early postoperative complications [21,22]. Incidence of urine retention in presented study occur in 17 patients (2%) this lower than in another study done for patient with pile surgery as 3.6% [23]. While in many studies it was reported a rate around 3-50% [23,24,25,26]. Also reported in averge 2-30% [27,28]. 17-19 low incidence of urine retention in presented study because we advice all postoperative patients to use sitz path , avoid opiate analgesic , encourage early post operative urination and any difficult urination use warmth application. In addition to that, cases of urine retention in our study occur mostly with

hemorrhoid surgery , it may related to postoperative severe pain associated with pile surgery.

Clinically significant hemorrhage develop in 3 cases (0.36%) . It comparative to another study done for patient with pile surgery as 0.4% [29]. While in many studies it was reported a rate around of 0.3 to 6%, with an average of around 2% [30,31] 1 2 3 6 7 . hemorrhoidectomy is associated with higher rates of bleeding when compared with other anorectal procedure. 1 2 3 and this same as in our study because Hemorrhoid surgery involves the vascular cushions. Bleeding after other anorectal procedures such as procedures for anal fistula or fissure is very low (0.4–1.2%). 4 5. Low incidence postoperative bleeding in our study may related to use bipolar energy device and excluding cases on antiplatelets , anticoagulant and bleeding tendency from immediate surgery.

Infection develop in (0.45%) in presented study and more incident with fissures treated by lateral sphincterotomy . While in other studies most infection occur with pile surgery and rate of abscess formation reported between 0.5 and 4% (Senagore A J.2004, Nisar P J.2004, Hyman N.2009, Bouchard D.2013, Sielezneff I.1997) 1 3 4 16 17 . In our study thrombosed external hemorrhoids are develop in 13 patients (1.5%), at same incidence in all anorectal diseases surgery are likely related to local tissue trauma and injection of local anesthetic . Thrombosed hemorrhoids after anorectal surgery have been described by several papers. (Kunitake H.2016, Senagore A J.2004, MacRae H M.1995, . Nisar P J.2004, Hyman N, O'Brien S.2009, Hall J F, Bordeianou L .2014, Grewal H.1994 Morandi E.1999)1 2 3 4 5 18 19

During the healing process of hemorrhoidectomy wound observed in our study the anal fissures develop in (o.47%) comparative to another study done for patients with pile surgery as 0.39% . (IGUSABDER. 2022). However, higher rate (6,3%) in case stapler hemorrhoidopexy is done. (.Aytac E .2015, . Bhatti MI .2016)19,20. Constipation was develop at 1-3 postoperative days in 9 patients (1%). After hemorrhoidectomy has the highest rate reported. While in other studies; fear of bowel movements and the associated pain can lead to functional constipation , severe constipation is common after anorectal surgery with rates between 15 and 30%. (Kunitake H.2016, Senagore A J.2004, MacRae H M.1995, . Nisar P J.2004)1 2 3 . lower incidence of constipation in our study may due to dietary advice ; increase water consumption , high fiber diet and avoid use opioid as postoperative analgesia

5. Conclusion

From this study we have found the anorectal diseases are a common condition affect quality of life and associated with morbidity .It may necessitate surgical interference . there is ratio of postoperative complications after anorectal surgery, it should be performed by suitably trained surgeons. While most conditions are benign, a careful evaluation by a specialist is important to exclude anal cancer or another serious disorder.

Recommendations

1. Careful evaluation of patients with anorectal disease by a specialist is important to exclude anal cancer or another serious disorder.
2. Patients with pile complaining bleeding per rectum without visible bleeding points from pile need carefull bowel assessment to exclude another source of bleeding.
3. Encourage early postoperative urination to reduce possibility of potential urine retention
4. Avoid postoperative opioid use for decreasing possible constipation and urine retention.

5. Encourage postoperative high fibre diet and plenty of plain water to reduce possibility of surgical raw area trauma by hard stool and reduce possibility of constipation
6. Preoperative antibiotic for anorecal surgery involving muscles dissection like lateral sphincterotomy .

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