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Research title : **Management of complication post hemorrhoidal surgery**

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Dedication

To my beloved parents, who were there for me

With their support and encouragement,

I dedicate this work to all their loving tears and beautiful smiles.

To all my respectable teachers,

Who enlightened me with their knowledge and understanding

To all my fellow students, friends, and colleagues

For their unconditional Support and love.

To all patients out there, hoping this little work will do something to help them more in their sufferings.

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Abstract

Background:

Hemorrhoids are swollen, irritated veins around the anus or rectum that can last for varying lengths of time **,** The management of symptomatic hemorrhoidal disease should be directed at the symptom complex of the individual patient. Most patients can be successfully treated by improving bowel function, correcting constipation, and the use of any of a variety of anal ointments

Material : Prospective study done at Department of surgery in Al-Emamein Al-Kadhemein medical city , From October 2018 to march 2019 , included randomly selected 30 participants who were diagnosed to have complications of hemorrhoids after surgery Data of each patient were collected from the case sheet include age and gender 'past medical history 'risk factors(smoking 'obesity 'constipation 'anal infection 'pregnancy 'trauma) 'previous surgical hemorrhoidectomy' type of anesthesia '
complication after surgery (pain ,retention of urine ,bleeding, discharge, anal stricture ,anal fissure ,incontinence) and their response to treatment were followed for few days .

Results:

all patient develop pain 30 (100%) for which they received analgesic (narcotics , NSAIDs or both) , all the patients had pain relived , regarding the bleeding 4 patients (13.3%) , 3 of them (10%) were bleed only small amount , only one patient (3.3%) had major bleeding which indicate further management , 4 patients (13.3%) had discharge only 2 (6.6%) need antibiotic treatment , 4 patients(13.3%) had urine retention all responded to conservative measurement and didn't need catheterization , 2 patients (6.6%) had anal stricture one of them (3.3%) need dilation , 2 patients (6.6%) had anal fissure , 1 of them (3.3%) require surgery for repair , no one had incontinence .

Conclusion :

Pain is the most common complication after hemorrhoidectomy , with excellent response to analgesia , the second most common complicate is anal fissure , which need surgical treatment for most of them , other common complications are bleeding , discharge, urine retention , anal stenosis , and there is no incontinence.

Key words :hemorrhoid , hemorrhoidectomy, management .

INTRODUCTION

Definition of hemorrhoids:

Hemorrhoids are swollen, irritated veins around the anus or rectum that can last for varying lengths of time , they are cushions of submucosal tissue containing venules, arterioles, and smooth muscle fibers that are located in the anal canal [(1)] . Three hemorrhoidal cushions are found in the left lateral, right anterior, and right posterior positions. Hemorrhoids are thought to function as part of the continence mechanism and aid in complete closure of the anal canal at rest.[(2)]

Pathogenesis and etiology:

Haemorrhoids or piles are symptomatic anal cushions , The anal canal consists of three fibrovascular cushions that are fed directly by arteriovenous communications. These cushions are supported within the anal canal by a connective tissue framework, and they are important in providing a watertight seal to the anus. The degenerative effects of ageing may weaken or fragment the supporting tissues, and this along with the repeated passage of hard stool and straining produces a shearing force on the cushions, leading to their descent and prolapse. The prolapsed cushions have impaired venous return, which results in engorgement that may be further exacerbated by straining, inadequate fibre intake, prolonged time on the lavatory, and conditions such as pregnancy that raise intra-abdominal pressure. Bleeding from the engorged prolapsed haemorrhoid occurs as a result of localised mucosal trauma or inflammation, which damages the underlying blood vessels. [(6)] and it can present as bright-red, painless bleeding mucous discharge , prolapse , pain only on prolapse. [(1)]

Clinical feature:

The main symptoms of hemorrhoidal disease include rectal bleeding, prolapse, pain, thrombosis, mucus discharge, and pruritus. [3] They are more common when intra-abdominal pressure is raised, e.g. in obesity, constipation and pregnancy , Classically, they occur in the 3, 7 and 11 o'clock positions with the patient in the lithotomy position

Classification :

Hemorrhoids are classified based on their location and the degree of prolapse.

- Internal hemorrhoids originate from the internal hemorrhoidal plexus above the dentate line and are classified by the degree of prolapse of the anal canal.
- External hemorrhoids originate from the external hemorrhoidal plexus below the dentate line and are classified as acute (hemorrhoidal thrombosis) or chronic (anal skin tags) . [4] Although the etiology is not completely understood, constipation and prolonged straining resulting in hard stool and increased intra-abdominal pressure are thought to obstruct venous return, and cause engorgement of the hemorrhoidal plexus . [5]

Four degree of haemorrhoids:

- First degree – bleed only, no prolapse
- Second degree – prolapse, but reduce spontaneously
- Third degree – prolapse and have to be manually reduced
- Fourth degree – permanently prolapsed. [1]

Diagnosis:

Initial examination involves inspection of the perineum followed by rectal examination and anoscopy. This will help differentiate haemorrhoids from other causes of anal canal bleeding such as

fissures, fistulas, tumour, polyps, anal warts, and rectal prolapse. Large external haemorrhoids can be easily seen on inspection, but anoscopy allows the haemorrhoidal cushions to be more easily visualised in the usual left lateral, right anterior, and right posterior positions (3 o'clock, 7 o'clock, and 11 o'clock positions) [(2)] . Patients older than 40 who have suspected haemorrhoidal bleeding generally require additional flexible sigmoidoscopy, colonoscopy, virtual colonoscopy, or a barium enema to exclude colorectal carcinomas.

Treatment:

The management of symptomatic hemorrhoidal disease should be directed at the symptom complex of the individual patient. Most patients can be successfully treated by improving bowel function, correcting constipation, and the use of any of a variety of anal ointments.

The indications for haemorrhoidectomy include:

- third- and fourth-degree haemorrhoids;
- second-degree haemorrhoids that have not been cured by non-operative treatments
- fibrosed haemorrhoids
- interoexternal haemorrhoids when the external haemorrhoid is well defined. [(1)]

Technique

It is usual for the patient to have been taking stool softeners in the days before surgery and a preoperative enema to empty the rectum is administered. The procedure is usually performed under general or regional anaesthesia with the patient in the lithotomy or prone jack-knife position. The
perianal skin is shaved and a formal examination performed. Haemorrhoidectomy can be performed using an open or a closed technique. The open technique is most commonly used in the UK and is known as the Milligan–Morgan operation – named after the surgeons who described it. The closed technique is the popular technique in the United States. Both involve ligation and excision of the haemorrhoid, but in the

open technique the anal mucosa and skin are left open to heal by secondary intention, and in the closed technique the wound is sutured. [1]

Open technique

The anoderm and subcutaneous tissues between the pile masses may be injected with dilute adrenaline (epinephrine, 1:300 000 dilution) to reduce bleeding and aid preservation of the skin bridges left following excision. Artery forceps are applied to the skincovered external components of the piles and traction exerted to reveal the internal components, which are also grasped by artery forceps. When held out by the assistant, these pairs of artery forceps form a triangle. The operator takes the left lateral pair of artery forceps in the palm of the hand and places the extended forefinger in the anal canal to support the internal haemorrhoid. In this way, traction is applied to the skin of the anal margin. With scissors or cutting diathermy, a V-shaped cut is made through the skin and those fibres inserting into it around the skin-holding artery forceps. Traction by both operator and assistant, combined with careful dissection, will expose the lower border of the internal sphincter. The dissection proceeds up the anal canal, with the sides of the mucosal dissection converging towards the pile apex and with the internal sphincter visible and separate from the dissected pile. A transfixion ligature of strong Vicryl is applied to the pedicle at this level, the pile is excised well distal to the ligature and, after ensuring haemostasis, the ligature is cut long. Each haemorrhoid is dealt with in this manner, taking care to leave mucocutaneous bridges. If there are significant secondary haemorrhoids under these bridges, they can be filleted out by scissor dissection. Haemostasis must be absolute at the end of the procedure, when a soft absorbable anal dressing is inserted. The margins of the skin wounds are trimmed so as not to leave overhanging edges. Bleeding subcutaneous arteries having been secured, the areas denuded of skin are dressed with three pieces of petroleum jelly gauze. A pad of gauze and wool and a firmly applied T-bandage complete the operation. [1]

Closed technique

The haemorrhoid is excised, together with the overlying mucosa, The haemorrhoid is dissected carefully from the underlying sphincter and haemostasis is achieved. The pedicle is transfixed and ligated with 3/0 Vicryl or Dexon. Any residual small haemorrhoids should be removed by filleting them out after undermining the edges of the cut mucosa. The mucosal defect is then closed completely with a continuous suture using the same stitch that was employed to ligate the haemorrhoid pedicle. The remaining haemorrhoids are excised and ligated in a similar fashion, ensuring that there are adequate mucosal and skin bridges between each area of excision to avoid a subsequent stenosis. [(1)]

With the aim of symptom relief but preservation of the anal cushions, the technique of stapled haemorrhoidopexy (Longo), which utilises a purpose-designed stapling gun (PPH, Ethicon Inc.), has recently been described. This procedure excises a strip of mucosa and submucosa (together with the vessels travelling within them) circumferentially, well above the dentate line. Activation of the gun also simultaneously repairs the cut mucosa and submucosa by stapling the edges together . This procedure is quick to perform, and controlled trials suggest that it is less painful and less traumatic than conventional haemorrhoidectomy and, at least in the short term, it seems to be equally efficacious. However, evidence is emerging that the technique is associated with higher recurrence rates than following conventional haemorrhoidectomy, and associated with more additional surgery. The patient, after counselling, may choose to accept a higher recurrence rate to take advantage of the shortterm benefits, or not. [(1)]

Transanal haemorrhoidal dearterialisation

Transanal haemorrhoidal dearterialisation (THD) is used for the treatment of second- and third-degree haemorrhoids. Some have recently advocated transanal Doppler-guided ligation of those vessels feeding the haemorrhoidal masses, to which others have added suture ‘mucopexy’ to deal with any prolapse. Long term outcomes are unknown, but recurrence rates for fourth degree hemorrhoids (certainly when additional procedures are not incorporated) are high. [(1)]

Complications of hemorrhoids:

- Profuse hemorrhage is uncommon. The bleeding mainly occurs externally but it may continue internally after the bleeding haemorrhoid has retracted or has been returned. In these circumstances, the rectum is found to contain blood
- Strangulation and thrombosis
- Ulceration
- Gangrene
- Portal pyaemia
- Fibrosis. [(1)]

Postoperative complications:

Postoperative complications may be early or late.

Early complications

Include:

1-pain, which may require opiate analgesia

2- retention of urine, especially in men, which rarely may need relief by catheterisation

3- reactionary haemorrhage, which is much more common than secondary haemorrhage. The haemorrhage may be mainly or entirely concealed, but will become evident on examining the rectum. If persistent following adequate analgesia, the patient must be taken to the operating theatre and the bleeding point secured by careful diathermy or under-running with a ligature on a needle, care being taken to avoid damage to the internal sphincter. Should a definite bleeding point not be found, the anal canal and rectum are packed.

Late postoperative complications

Include :

1- Secondary haemorrhage. This is uncommon, occurring about the 7th or 8th day after operation. It is usually controlled by morphine but, if the haemorrhage is severe, an anaesthetic should be given and the bleeding controlled.

2- Anal stricture, which must be prevented at all costs. A rectal examination at the postoperative review will indicate whether stricturing is to be expected. It may then be necessary to give a

general anaesthetic and dilate the anus. After that, daily use of the dilator should give a satisfactory result.

3- Anal fissures and submucous abscesses.
4- Incontinence, especially if there has been inadvertent damage to the underlying internal sphincter. Although uncommon,this is obviously a very serious problem that is difficult to treat. [1]

Aim of the Study

- The study focuses on post-operative complications presentation and The whole point is to highlight the approach to a patient with complications of hemorrhoids postoperatively.

Patient and methods

Design
Prospective study.

Setting
Department of surgery in Al-Emamein Al-Kadhemein medical city.

Period
From October 2018 to march 2019 .

Sample size
30 consecutive patients during study period

This study included randomly selected 30 participants who were diagnosed to have complications of hemorrhoids after surgery. At surgical wards and at outpatient clinic.

Data of each patient were collected from the case sheet include age and gender ‘past medical history ‘risk factors(smoking ‘obesity ‘constipation ‘anal infection ‘pregnancy ‘trauma) ‘previous surgical hemorrhoidectomy’ type of anesthesia ‘

complication after surgery (pain ,retention of urine ,bleeding, discharge, anal stricture ,anal fissure ,incontinence) and their response to treatment were followed for few days .

Results :

30 patient were included in this study , 22 (73.3%) male and 8(26.7%) female as shown in Figure 1.

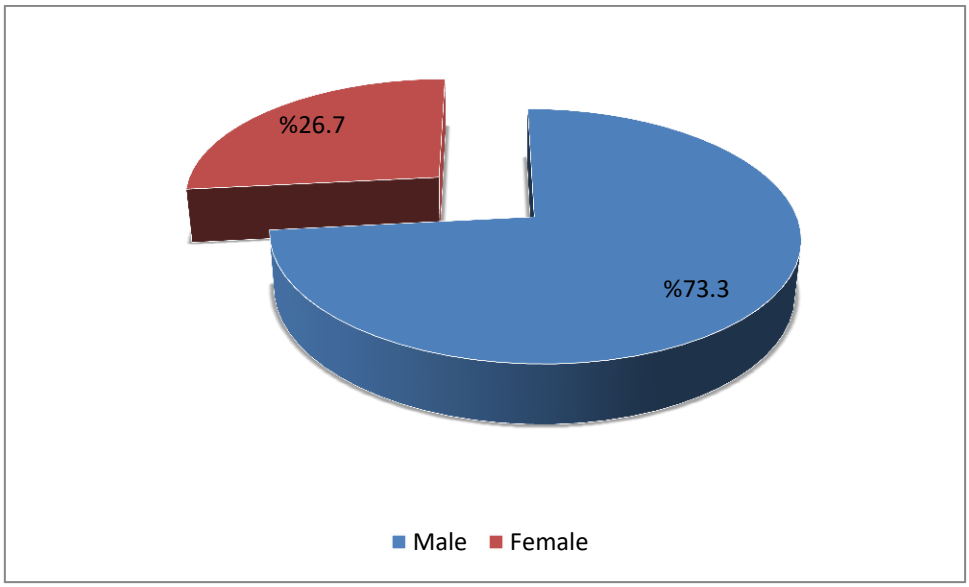

Figure 1 : distribution of patients according to gender

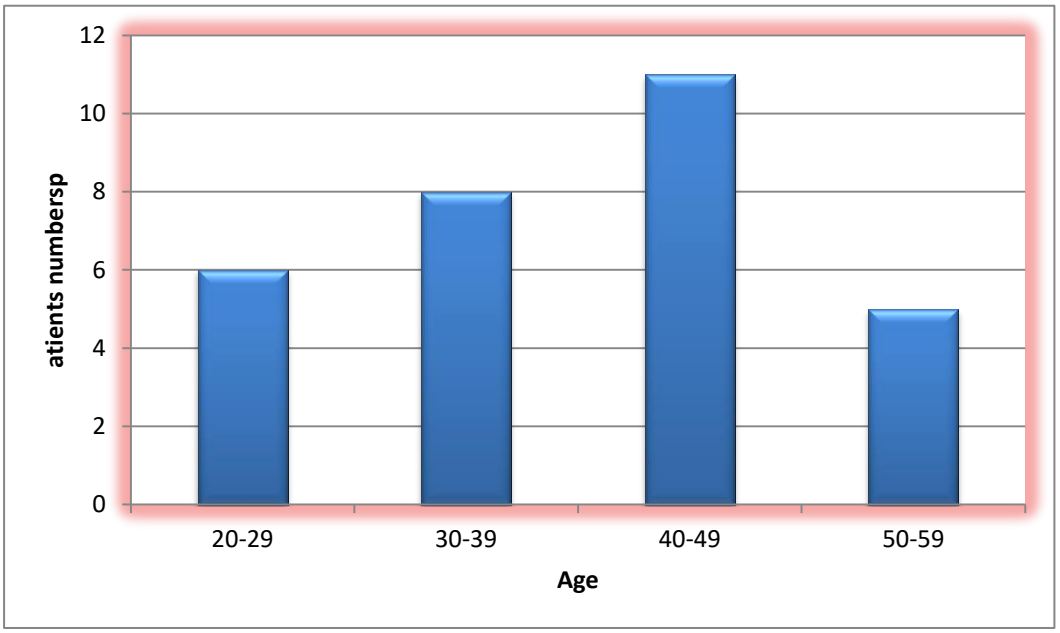

Figure 2: distribution of patients by age

In Figure 3 , we illustrate the most common risk factor for our study sample

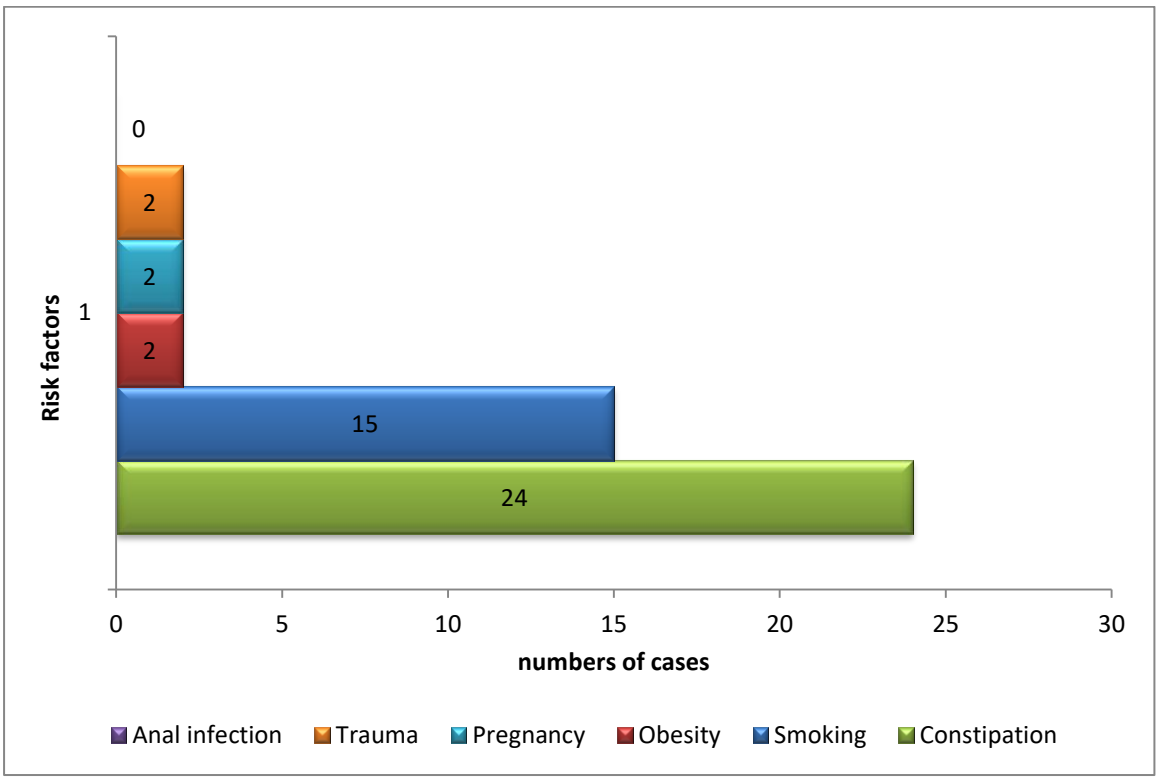

Figure 3: risk factors for patients with hemorrhoids

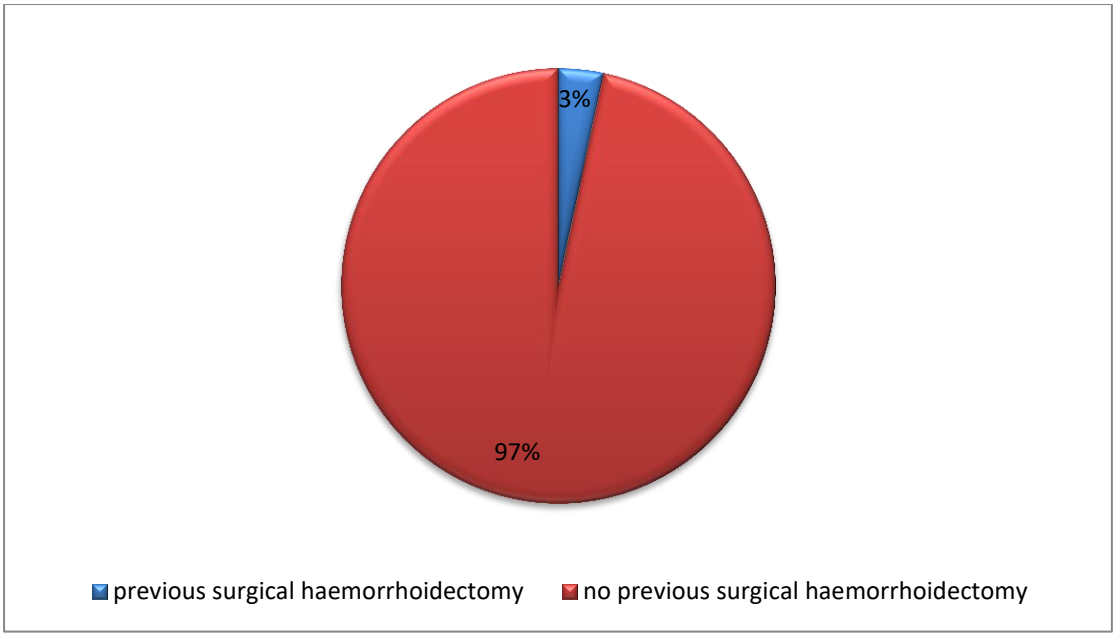

Figure 4: Distribution of patients according to the previous surgical hemorrhoidectomy

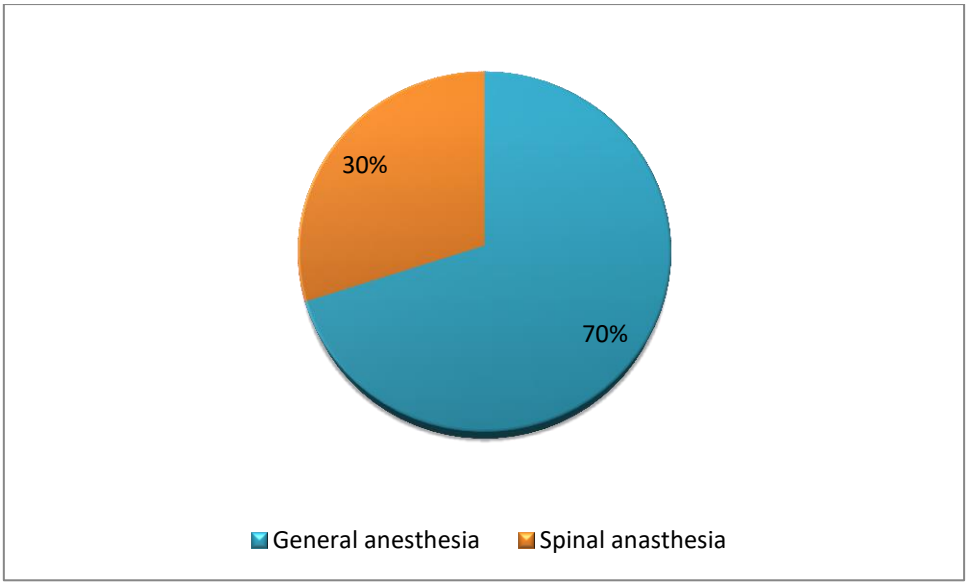

Figure 5 : Distribution of patients according to the types of anesthesia

Figure 6 illustrates the complications after surgery which was pain 30(100 %), bleeding 4 (13.3%) , discharge 4 (13.3%) , Urine retention 4 (13.3%) , anal stricture 2 (6.6%), anal fissure 2 (6.6%) .

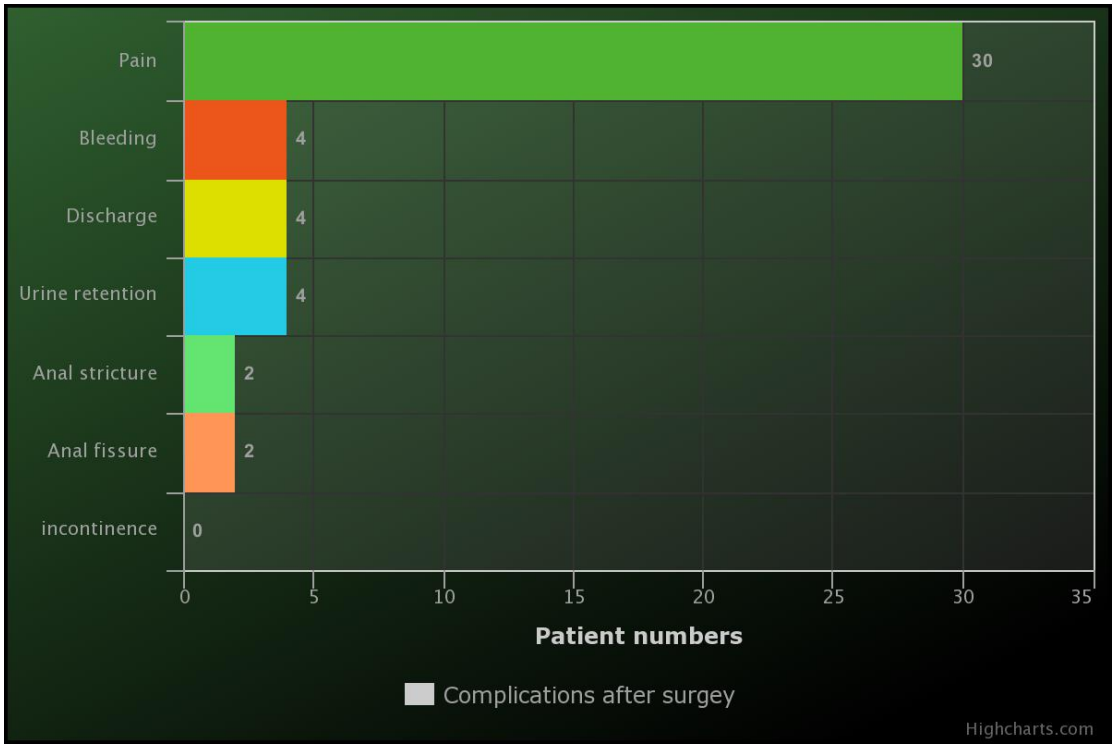

Figure 6 : complications after surgery

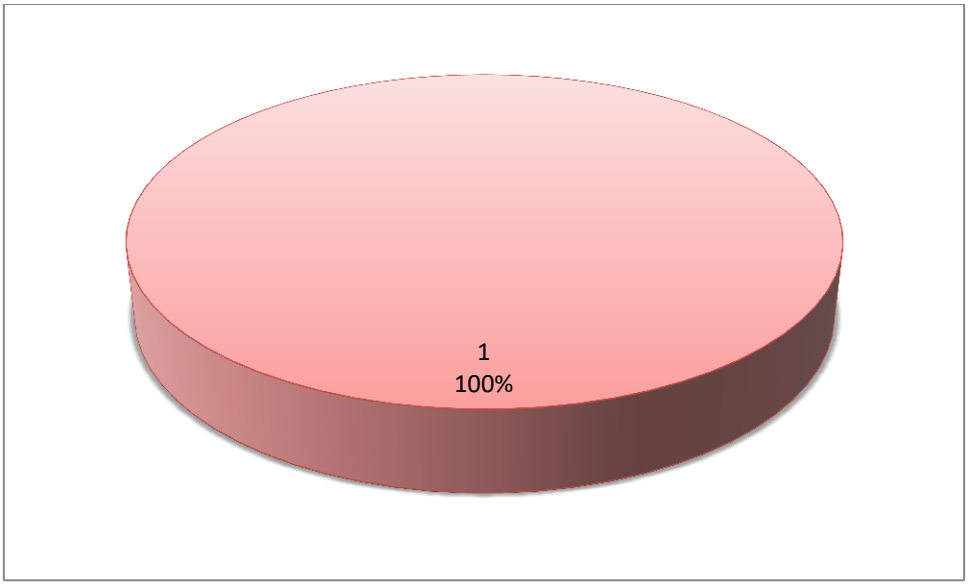

Figure 7 : number of patients who had pain after surgery

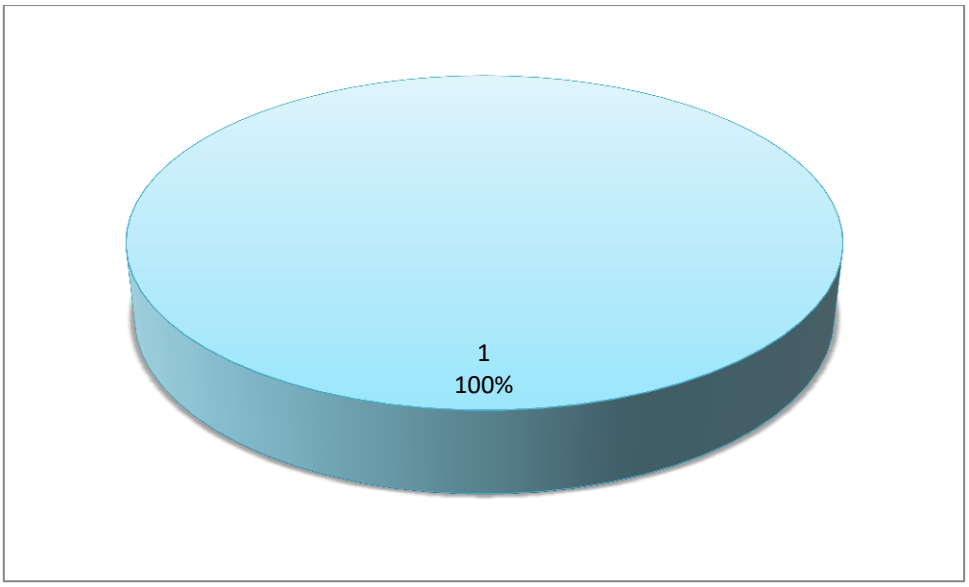

Figure 8: pain responses to analgesia

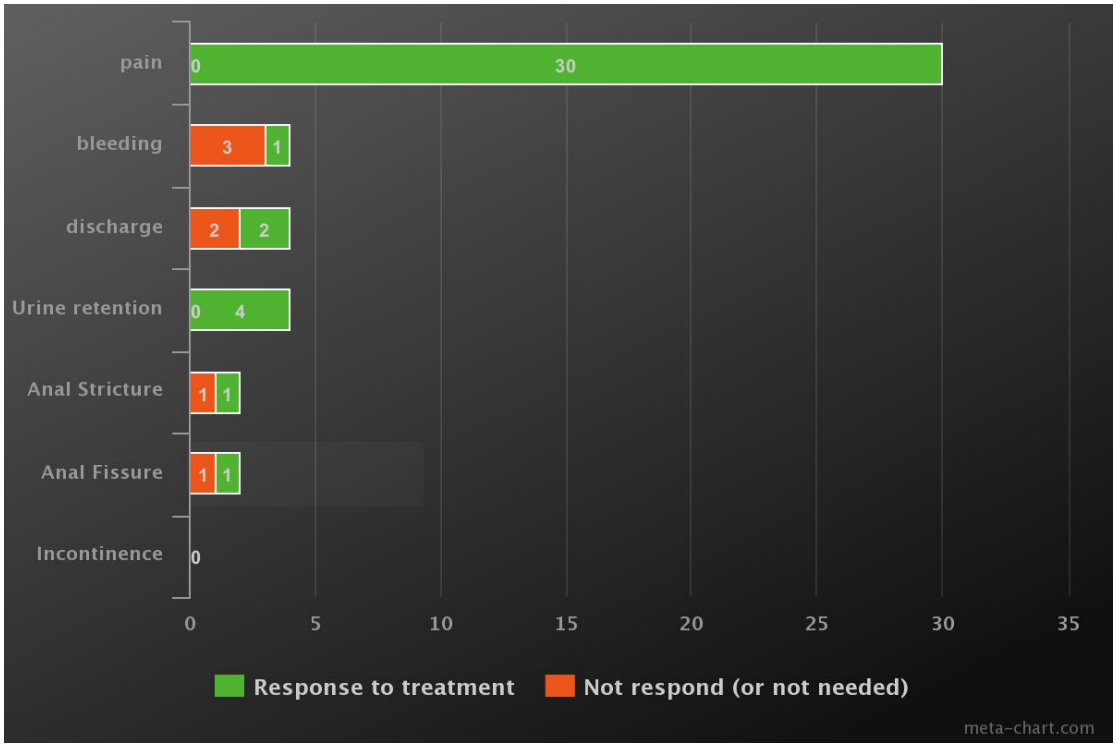

Figure 9: patient response to cause specific management

Figure 9 illustrate patients response to our management ,all patient develop pain 30 (100%) for which they received analgesic (narcotics , NSAIDs or both) , all the patients had pain relived , regarding the bleeding 4 patients (13.3%) , all occur with first week after surgery 3 of them (10%) were bleed only small amount , only one patient (3.3%) had heavy bleeding lasting for 1 day , which indicate surgical intervention and the patient received 2 pint of blood while he was at the emergency department ,other 3 patients had small amount of blood treat conservatively as the bleeding occur only with defecation , lasting 2 days ,stops without surgical intervention 4 patients (13.3%) had discharge only 2 (6.6%) need antibiotic treatment , 4 patients(13.3%) had urine retention all responded to conservative measurement and didn't need catheterization , 2 patients (6.6%) had anal stricture one of them (3.3%) treated by dilation , while the second one only by conservative management , 2 patients (6.6%) had anal fissure , 1 of them (3.3 %) require surgery for repair , the second one treat conservatively , no one had incontinence .

Discussion :

In our study sample the majority 22 (73.3%) were male , which differ from other study done by Lorenzo-Rivero S [7] where both male and female affected equally .

Regarding complication after surgery , all the patient in our study develop pain (100%) , urine retention 4 (13.3 %) , 4 patients (13.3%) had discharge , the bleeding 4 patients (13.3%) , 2 patients (6.6%) had anal stricture, 9 patients (6.6%) had anal fissure , no one had incontinence (0%) , this complication were expected as All surgical treatments are associated with some degree of complications including bleeding, infection, anal strictures and urinary retention, due to the close proximity of the rectum to the nerves that supply the bladder . [7] Also, a small risk of fecal incontinence occurs, particularly of liquid , [9) , (10] with rates reported between 0% and 28%

Lorenzo-Rivero S [7] Study showed Postoperative urinary complications (retention or infection) were seen in 20.1 percent of patients. Delayed hemorrhage was seen in 2.4 percent of patients. Which seem to be with the range of complications rate in our study .

In another study done by Pescatori M [10] , 12.7% of patients required readmission on the day of surgery, mostly due to bleeding, pain and urinary retention.

In study done by Ravo B [8] , shows that Immediate complications (first week) were: severe pain in 5.0% of all patients, bleeding (4.2%), urinary retention (1.5%),

Bleeding was treated surgically in 24%, with Foley insertion 15%; and by epinephrine infiltration in 2%; 53% of patients with bleeding received no treatment and 6% needed transfusion. The most common complication after 1 week was recurrence of hemorrhoids in 2.3% of patients, severe pain (1.7%), stenosis (0.8%), fissure (0.6%), bleeding (0.5%), skin tag (0.5%), thrombosis (0.4%), papillary hypertrophy (0.3%) fecal urency (0.2%),

staples problems (0.2%), gas flatus and fecal incontinence (0.2%), Anal stenoses were treated by dilatation in 55% and by anoplasty in 45%. Fissure was treated by dilatation in 57%. Which is nearly the same results as our study.

Conclusion :

Pain is the most common complication after hemorrhoidectomy , with excellent response to analgesia , less common complications were bleeding, discharge, and urine retention. Incontenince was not found.

Recommendation

However, small sample size in our study in compare to the wide diversity of hemorrhoidectomy surgical modalities is one of the potential limitations, therefore we recommended further studies with larger sample size and comparison with different surgical modalities.

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