

Complications of stapled hemorrhoidectomy

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Background: Stapled hemorrhoidectomy (SH), a new approach to the treatment of hemorrhoids, removes a circumferential strip of mucosa about four centimeters above the dentate line. Immediate complications (first week) were: severe pain in all patients, bleeding, thrombosis, urinary retention, anastomotic Dehiscence, fissure Perineal intramural hematoma, and submucosal abscess The most common complication after 1 week was recurrence of hemorrhoids in of patients, severe pain, stenosis, fissure, bleeding, skin tag, thrombosis, papillary hypertrophy, fecal urgency, staples problems, gas flatus and fecal incontinence, intramural abscess, partial dehiscence, mucosal septum, and intussusceptions. The most common complication in the first 25 cases of the surgeon's experience was the pain. Even though SH and banding are necessary before recommending the procedure. It was a prospective and retrograde study conducted in R.D. Gardi Medical College, Ujjain. Study Duration was from November 2017 to November 2019. All the patients who were post-op (stapled hemorrhoidectomy) case of hemorrhoid disease. The total number of patients operated with stapled hemorrhoidectomy in the 2 years period (2017-2019) was 400.

Keywords: Hemorrhoidectomy, Pain, Stapled hemorrhoidectomy, Complications

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Introduction

Interest in hemorrhoids is related to its high incidence and elevated social costs that derive from its treatment. Several comparative studies are reported in Literature to define a standard for the ideal treatment of hemorrhoidal disease.

Radical surgery is the only therapeutic option in the case of III and IV stage hemorrhoids.

Hemorrhoids surgical techniques are classified as Open, Closed and Stapled ones. Conventional open and closed hemorrhoidectomies deal with internal and external hemorrhoids and associated anal pathology.

Stapled hemorrhoidectomy, a new approach to the treatment of hemorrhoids, removes a circumferential strip of mucosa about four centimeters above the dentate line with a

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Circular stapler, probably interrupting the hemorrhoidal vessels and stretching the prolapsed mucosa [1]. The hemorrhoids are not dealt with because they are expected to become asymptomatic. Major complications of conventional hemorrhoidectomy are early or late hemorrhage, anal stenosis, and fissures.

In addition, other complications or complaints after hemorrhoidectomy have been reported such as pain, urinary retention, urinary tract infection, mucosal prolapsed, pseudopolypi, epidermal cyst, anal canal fistula, pruritis ani, fecal incontinence and recurrent hemorrhoids [2].

Complications reported for stapled hemorrhoidectomy are similar to those of open hemorrhoidectomy. In addition, other complications such as hemorrhoidal thrombosis, rectal anastomotic leakages with pelvic sepsis, rectal obstruction, retrorectal hematomas, and Fournier gangrene have been reported. The patients complained of the fissure, pain, hypertrophied anal papilla, proctalgia Fuga, and thrombosis [3-4].

The patients had a mean age of 51 years (range, 30-65 years). Most complications occurred after the surgeon had more than 25 case experiences. Of the immediate complications, severe pain was the most common complication, requiring extra analgesics, followed by bleeding, thrombosis, urinary retention anastomotic dehiscence, fissure, hemorrhage, and submucosal abscess (Table 1). The immediate complications were treated as followed: all patients complaining of pain had extra analgesics.

Materials and Methods

Setting - Study conducted at R. D. Gardi Medical College, Ujjain., MP, India

Study Duration - from November 2017 to November 2019.

Type of Study - It was prospective and retrograde

Sampling Methods- All the patients who were post-op (stapled hemorrhoidectomy) case of hemorrhoid disease, History, clinical examination along all baseline investigation done. Proctoscopy and Digital Per Rectal examination were the main diagnostic modalities used.

Sample Size- 400 post-op case of stapled hemorrhoidectomy

Inclusion Criteria- All the patients who were post-

Op (stapled hemorrhoidectomy) case in RDGMC Ujjain.

Data Analysis- of 400 was calculated at a 95% confidence interval at a 10% acceptable margin of error by epi info software version 7.2. The complication was classified as immediate if they occurred in the first week of surgery, and late if they occurred after 1 week of surgery.

Exclusion Criteria - Exclusion criteria were as follows: Patients with severe heart or lung disease, patients with coagulation disorders, pregnant women.

Ethical consideration and permission taken from ethical committee RDGMC

Result

The total number of patients operated with stapled hemorrhoidectomy in the 2 years period (2017-2019) was 400, of which 15% had complications. The indication for the procedure was third-degree hemorrhoids for all patients with complications. These patients had a mean age of 51 years (range, 30-65 years); 61% were male. All patients underwent anoscopy before surgery and only in 2 of 400 patients was an associated fissure observed. Of the 156 women, 78 had a vaginal delivery.

The most common complication in the 400 cases of stapled hemorrhoidectomy experience was a pain (26 cases, 6.5%), bleeding (20 cases, 5%) thrombosis (16 cases, 4 %) and anastomotic dehiscence (2 cases, 0.5%). Of the 400 patients with complications, the excised tissue was examined histologically in 228 patients (57%). Of the immediate complications- severe pain was the most common complication, requiring extra analgesics, followed by bleeding, thrombosis, urinary retention anastomotic dehiscence, fissure, hemorrhage, and

Table-1: Immediate (within 1 week) complication of stapled hemorrhoidectomy reported for 400 patient

Complication	Patients (%)
Severe pain	5.0
Bleeding	4.0
Thrombosis	2.0
Urinary retention	1.5
Anastomotic dehiscence	0.5
Fissure	0.5
Perineal intramural hematoma	0.5
Submucosal abscess	0.5

Submucosal abscess. All patients complaining of pain had analgesics.

Table-2: Late complications of stapled hemorrhoidectomy reported for 400

Complication	Patients (%)
None	91.5
Recurrent hemorrhoids	2.0
Severe pain	1.5
Stenosis	0.5
Fissure	0.5
Bleeding	1.0
Skin tag	0.5
Thrombosis	0.5
Papillary hypertrophy	0.5
Fecal urgency	0.5
Staples problems	0.5
Flatus incontinence	0.5
Fecal incontinence	<0.5
Mucosal septum	<0.5
Partial dehiscence	<0.5
Intramural abscess	<0.5
Intussusception	<0.5

The bleeding was treated surgically in 4 cases, by insertion of a Foley catheter in 2 cases, and by epinephrine infiltration in 2 cases, the remaining 8% needed no treatment while 2 needed a blood transfusion. Anastomatic dehiscence was due to a malfunctioning of the stapler in 4 cases and incomplete stapling in 1 case; The rectal hemorrhage resolved spontaneously and the submucosal abscess was drained. Recurrent hemorrhoids were the most common late complication of stapled hemorrhoidectomy, found in 2% of patients of all treated patients (Table 2). The late complications were treated as follows: recurrent hemorrhoids were treated by rubber band ligation in 4 of 400 cases. The remaining cases of hemorrhoids were not treated. Anal stenosis was treated by dilatation in 2 patients. The fissure is treated with diltan dilatation. The intramural abscess is drained and the patient with intussusception underwent rectopexy. All patients had favorable results after the second therapy.

Discussion

When the rectal mucosa enters the anal canal, at the pelvic floor, it is thrown into longitudinal folds, known as columns of Morgagni. These folds contain, in the underlining mucosa, the internal hemorrhoidal plexus which is made of sinusoids [5-6]. The hemorrhoidal sinusoids and the connective

Tissue cushion formation permit the anal mucosa to stretch out when the sphincter contracts, forming a spongy cushion that closes the anal canal and contributes to anal continence. It is not known how much blood flow and vassal engorgement of these sinusoids contribute to anal continence. Common sense suggests that the enlargement of these sinusoids, especially during straining, may contribute to continence by overcoming the increased pelvic pressure during periods of maximal need such as straining, lifting weights, pregnancy, and constipation. This may explain why hemorrhoidal engorgement is not constant most of the time and may become physiological when needed.

The circular stapled hemorrhoidectomy technique is a new approach to the treatment of hemorrhoids. A circumferential strip of rectal mucosa about four centimeters above the dentate line is removed with a circular stapler stretching the prolapsed mucosa if it is not fixed. This probably interrupts the hemorrhoidal vessels. Eliminating a circumferential strip of mucosa in the rectum at or above the pelvic floor, as with stapled hemorrhoidectomy, does not necessarily mean that the anal mucosa gets stretched up from the anal canal, because the more redundant circumferential rectal mucosa may be pulled down into the anal canal, leaving the longitudinal anal fold intact, it is also difficult to stretch the anal mucosa if there is anal fibrosis, as with fissure.

Rated complications after stapled hemorrhoidectomy range from 6.4% to 31% [7]. Some authors have attributed complications to the surgeon's learning curve. In our study, this was not found. Most complications occurred after the surgeon had more than 25 case experiences. If one considers that the rectal wall is innervated by the sympathetic and parasympathetic nerves, excising the rectal mucosa should be painless. It is unusual, then, that pain is a common immediate complication of a stapled hemorrhoidectomy. Pain may occur when the purse string for the stapler is placed close to the pelvic floor and includes muscle in it, 29 patients with muscle incorporated in the doughnut had pain in this study. Some patients may have pain even if no muscle was included in the doughnut because the muscle may have been included in the stapled line instead.

Bleeding was the second most frequent immediate complication in this study probably because the staples did not achieve proper hemostasis or

Because there was too much-folded mucosa in the stapled line. Taking larger bites of the mucosa into the purse-string increases space on which the staples are fired against, making the staples inefficient for hemostasis. Avoiding placing the purse-string at the inlet of the anal canal may help not taking pelvic floor muscle into the deep bites of the purse string.

Thrombosis was another complication of stapled hemorrhoidectomy, probably because the hemorrhoid sinusoids were not removed and therefore were easily traumatized during the procedure. Fissures may have occurred when too much-folded mucosa was included in the staple line. The larger mucosal fold can break and can give origin to a fissure that will not heal until the staples are removed completely and the fissure is spread out. When a patient complains again of hemorrhoidal symptoms after stapled hemorrhoidectomy, the symptoms should not be called recurrent. This is because the hemorrhoids are never actually removed. What is recurrent is that the patient still complains of the problem that brought him to the doctor in the first place. In this study, the patients who had recurrent symptoms were treated by rubber band ligation or by Milligan-Morgan hemorrhoidectomy [8].

Hemorrhoidectomies or other open and closed techniques have shown that the stapled procedure gives Less postoperative pain and faster return to normal activities is more expensive than conventional techniques and has a similar complication rate [9]. These randomized trials between stapled hemorrhoidectomy and conventional surgical hemorrhoidectomy are not appropriate, because they compare two different approaches to the hemorrhoidal problems. Stapled hemorrhoidectomy leaves the pathology and does not deal with external hemorrhoids or associated anal canal problems. Surgical hemorrhoidectomy excises the hemorrhoidal tissue and deals with internal-external hemorrhoids and associated pathology. In our opinion, a therapeutically approach similar to stapled hemorrhoidectomy is banding, in which the redundant hemorrhoid folds are strangulated by a ring the external hemorrhoids and associated pathologies are not treated. A randomized controlled trial comparing these two similar techniques has not been published [10-11].

Major complications reported after stapled hemorrhoidectomy (e.g. pelvic sepsis, bleeding, obstruction, and Fournier gangrene) were probably

Due to technical error. Most technical problems can be avoided if the deeper layers of the rectal wall are respected and not included in the purse string, making a mucosal anastomosis that is needed for the stapled procedure, instead of an all wall rectal layer anastomosis. this study conducts only in RDGMC.

Conclusion

These near-fatal complications should be further evidence that this new technique should be approached and evaluated with caution.

What does the study add to the existing knowledge?

We propose that a multicenter, prospective randomized trial between stapled hemorrhoidectomy and banding (with a long-term follow- up) be performed before such a procedure is recommended, even though some early reports are promising.

Author's contribution

Dr. Pushendra Jain: Concept, study design

Dr. Shyam Dhakaita: Manuscript preparation

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