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Novel technique for the haemorrhoids treatment: Stapled Transanal Resection of the Rectum (STARR)

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ABSTRACT

Haemorrhoids means swellings of the anal crossings which means small, bleeds and thrombose and many prolapse these gives bleed clinical symptoms. The purpose of this trial is to evaluate the use and benefits of STARR procedure along with its drawbacks, if any. The efficacy, safety and its postoperative management were also recorded.

A prospective clinical trial was performed. The patients (n = 40) visiting to the hospital were enrolled in the study. From each patient, informed consent was taken before enrollment in the study. A day before surgery, routine rectal clearance was done using water enema with castor oil. Antibiotics ceftrixon 1gm IV and flagyl (metronidazol) (500mg) were given during induction prophylactically.

Around 29 (75%) males and 11 (25%) females were enrolled in the study. Their mean age was 41 years. Around 32 (82%) and 8 (18%) patients showed grade III and grade IV, respectively. Prolapsed piles (IV) being the most frequent presentation (25 patients, i.e. 69%). Mean operating time was 25 minutes, while mean hospital stay was 1.5 days. All the patients were as elective cases, no day case was operated upon noticeable complications. Urine retention notified in 3% patients (7%) and around 2 patients showed perianal itching (5%). However, it was temporal. Around 38 (96%) patients reported normal defecation. Only one patient (4%) reported occasional mild staining. Around 38 (95%) patients did not report itching. About 4 patients reported occasionally itching (once in a day).

The recent introduced methods of haemorrhoidectomy, SH to our country proved to be effective and safe in managing grade III and IV haemorrhoides. It is a safe surgical alternative and the procedure has few postoperative complications, short hospital stays with minimal perianal pain.

Keywords:

Haemorrhoides, Haemorrhoidectomy, Clinical trial, Postoperative management

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1. INTRODUCTION

Haemorrhoids means swellings of the anal crossings which means small, bleeds and thrombose and many prolapse these gives bleed clinical symptoms (Martel, 2007; Lohsiriwat, 2012). Haemorrhoids are one of the most common anal disorders, many times traditional non-surgical methods like dietary modifications on rubber band ligation or end with high recurrence rate (Nikam et al., 2018; Sandler and Peery, 2019). Around 5% population showed symptomatic haemorrhoids (Sandler and Peery, 2019). Around one third of those population seeks medical treatment (Lohsiriwat, 2015). Surgery is needed for treatment of combined internal and external hemorrhoids or those with grade III and IV Horemonhoids. About 15% may eventually need surgical treatment (Huang et al., 2021).

Historically speaking, the most in commonly practiced procedure for hemorrhoids was, according to Milligan Morgan & Fergusson techniques (Lu et al., 2013). Recently, the harmonic scalpel was introduced (Sayfan, 2001). Another technique also recently introduced called Stapled Transanal Resection of the Rectum (STARR) (Boccasanta et al., 2007). But, these new techniques did not show consistent improvement in postoperative pain in comparison with the old standard technique (Ambroze et al., 2001; Tan, 2001). STARR procedure, if failed serious complications occur (Zhang et al., 2010). A new technique approached haemorrhoid by revolutionized surgical methods called SH., introduced by long, (1998). This technique is associated with faster recovery and reduced postoperative pain, but it is more expensive than other classic procedures (Guy et al., 2003). The purpose of this trial is to evaluate the use and benefits of STARR procedure along with its drawbacks, if any. The efficacy, safety and its postoperative management were also recorded.

2. MATERIAL AND METHODS

2.1 Patient enrollment

A prospective clinical trial was performed during January 2018 to January 2019 at AL-Taj and AL-Sadoon private hospitals, Baghdad, Iraq. The patients (n = 40) visiting to the hospital were enrolled in the study. The haemorrhoid recruited and patients with fissure or fistula were excluded from the study. From each patient, informed consent was taken before enrollment in the study. A day before surgery, routine rectal clearance was done using water enema with castor oil. Antibiotics Ceethixore 1gm IV and flagyl metronidazol (500mg) were given during induction prophylactically. All procedures were done by two senior surgeons. Also the follow up was done by them.

2.2 The technique of stapled haemorrhoidectomy

The operation was done under general anesthesia as a procedure described by longo (). The patient was in eithotomy position. A hollow inserted was made into the anal canal and pushing up the hemorrhoids. Then a purse-string suture through the hollow tube done using a 2/0 silk on a 30 mm curved needle round-bodied starting at 3 o'clock in an average distance of 3 cm from the dentate line. An additional simple stich with the same silk was placed at 9 o' clock similar trend of the purse-string suture. This aids in forming a segmentrical ring of mucosa and submucosa to be excised when the staplers was fired. The stapler was opened to its maximum position and placed to proximal the purse-string suture. The purse-string was then tightened. The stapler then fired and kept in its site for half a minute to keep harmostasis, then the stapler rotated to be expected out and the suture line inspected for security, feeding in few occasion. We add few sutures for bleeding points using 3/0 vicryl. The doughnut of fissure carefully inspected and the external part of hemorrhoids were not dealt with directly. Most of the cases were dealt as day cases and discharged on the same day. Patients were discharged on oral analgesics and laxatives. The follow up was done at one week, two weeks and 8 weeks. A gentle digital examination way performed at each visit.

A questionnaire was practiced during the last visit at 8 weeks postoperative through a verbal consent from the participants (Table 1). Verbal grading from the patients represents the

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most troubling and grade 7 being the least troubling.

Table 1: Questionnaire included in this study

No.	Parameters	Variables
1	Postoperative symptoms	Pain
		Constipation
		Bleeding
		Discharges
		Prolapse/swelling
		Diarrhea
		Others (Specify)
2	Preoperative symptoms	Resolved completely
		Resolved partially
		Remain unchanged
		Worsened
3	Unresolved symptoms	
4	Anal pain post-operative	no persistent anal pain
		Mild anal pain after defecation
		Moderate anal pain after defecation
		Severe anal pain which affect the life
5	Postoperative bleeding during defecation	Absent
		occasional stainging mild
		Moderante
		Severe requiring medical affection
6	Prosapte	Never
		prsted back into the anns is needed
		piles lie out all the time
7	Incontinence leaking of feces	Never
		Unable to control gas or flatters
		Unable to control liquid feces
		Unable to control solid feces
8	itching	Never
		Occasionally less than once a day
		frequent
		Always

3. RESULTS

About 40 patients were studied through this trial. Around 29 (75%) males and 11 (25%) females were enrolled in the study. Their mean age was 41 years. Around 32 (82%) and 8 (18%) patients showed grade III and grade IV, respectively. Prolapsed piles (IV) being the most frequent presentation (25 patients i.e. 69%). Mean operating time was 25 minutes, while mean hospital stay was 1.5 days. All the patients were as elective cases, no day case was operated upon noticeable complications. Urine retention notified in 3% patients (7%) and around 2 patients showed perianal itching (5%). However, it was temporary.

Table 2: Postoperative and preoperative symptoms

No	Parameters	Variables	Value (Percentage)
1	Postoperative symptoms	Pain	02 (10%)
		Constipation	06 (15%)
		Bleeding	31 (75%)
		Discharges	10 (25%)
		Prolapse/swelling	31 (77%)
		Diarrhrea	04 (01%)
		Others (Specify)	00 (00%)
2	Preoperative symptoms	Resolved completely	38 (95%)
		Resolved partially	04 (10%)
		Remain unchanged	00 (00%)
		Worsened	00 (00%)
3	Unresolved symptoms		00 (00%)
4	Anal pain post-operative	no persistent anal pain	38 (95%)
		Mild anal pain after defecation	09 (08%)
		Moderate anal pain after defecation	00 (00%)
		Severe anal pain which affects the life	00 (00%)
5	Prosapte	Never	38 (96%)
		prsted back into the anns is needed	00 (00%)
		piles lie out all the time	00 (00%)
6	Incontinence leaking of feces	Never	40 (100%)
		Unable to control gas or flaters	00 (00%)
		Unable to control liquid feces	00 (00%)
		Unable to control solid feces	00 (00%)

Around 38 (96%) patients reported normal defecation. Only one patient (4%) reported occasional mild staining.

Table 3: Postoperative bleeding during defecation

No	Parameters	Patients (percentage)
1	Absent	38 (96%)
2	Occasional mild staining	01 (04%)
3	Moderate	00 (00%)
4	Severe requiring medical affection	00 (00%)

Around 38 (95%) patients did not report itching. About 4 patients reported occasionally itching (once in a day).

Table 4: Itching after operation

No	Parameters	Patients (percentage)
1	Never	38% (95%)
2	Occasionally onces a day	04 (10%)
3	Frequent	00 (00%)
4	Always	00 (00%)

4. Discussion

Hemorrhoids, a common anorectal problem and may be the commonest worldwide. The pathogenesis of haemorrhoid includes venous varicosities of the anus, with vascular hyperplasia hemorrhoids tissue. This leads to mucosal prolapse of the anal canal mucosa resulting in elongation and kinking of the upper and middle unused haemorrhoidal vessels (Gass and Adams, 1950; Moore et al., 2013).

3rd and 4th degree hemorrhoids are usually treated surgically (Sayfan et al., 2001).

Stapled haemorrhoidectomy (SH) does not excise haemorrhoid fissure at the anus. But, it involves removal of circumferential column of mucosa and submucosa in the close vicinity of the haemorrhoid, followed by a stapling of the defect. The prolapsed haemorrhoidal tissue is drawn balk into physiological position within the anal canal. SH doesn't involve dissection and excision of perianal skin, this leads to reduction or absence of postoperative pain score (Guraya and Khairy, 2013). Postoperative pain is markedly reduced due to the site of mucosminios anastomosis in an area got few sensory receptors and mucos somatic fibers. In our study, there is some difference in hospital stay being less in SH and longer in open hemorrhoidectomy. Various authors did not agree for a difference of hospital stay between stapled and open haemorrhoidectomy group (Ho et al., 2000; Mehigan et al., 2000; Hetzer et al., 2002). SH is costly due to the costly instrumentation. However, this is weighed by the significant difference of hospital stay between Conventional open hemorrhoidectomy and stapled hemorrhoidectomy groups. Also the patients return to work earlier and short incapacity ___. Also, there are more economic devices. Other advantages are less postoperative pain and abscence of local care. Another advantage of SH is the patient comfort and the markedly reduced postoperative pain in comparison with the conventional open hemorrhoidectomy (Sgourakis et al., 2008; Giordano et al., 2009). In our study, we did not notice postoperative pain in any of the included groups, although there were published studies which dyre this falt like a study in lancet which raised a hot argument and was widely challenged by several papers (Cheetham et al., 2000). SH procedure is ealy to practice and be takes no much time to be performed by surgeons which lasts no more than 25 minuter, with a mean duration of 22 minutes (Habr-Gama et al., 2003).

This work showed a mean operating time of 22 mintures (range 18-37 minutes). We did not face any difficulty in mastering the technique which proves a short training curve for SH. The most important step and it judge the success of the operation and really it showed the role of the surgeon in this operation for other steps are performed automatically by the device. 3 cm distance from the dentate live is optimal if it is more poor reduction of the hemorrhoide may occur. If it is 2 cm and less, it gives rise to postoperative pain because it involved part of squamocial epithelium (Gabrielli et al., 2001). In our practice the mean operating time in this technique is less than the hemorrhoidetomy (Milligan Morgan procedure) which takes in our hospital more than 35 minutes average time and more blood loss, followed by a painful postoperative course which may need analgesics. Mean hospital stay in our work 1.5 day in case of stapled techanique and 2 days is case of open procedure. More than 98% of stapled group are satisfied with the Ferall fall. Only 85% with the operated patients.

Total complications were estimated in rate of 11% - 32%. In our series compared to the overall complications in the literature 12% - 36.4% (Pescatori et al., 2008). But in open hemorrhoidetomy a higher complication rate was noticed ranges between 19% - 46% of open hermorridestory (Oughriss et al., 2005). Complication in our study group was estimated between 10% and 25%. And it is divided in early (or within one week from surgery) and late after one week of surgery. Those within the week were bleeding in 2 patients, constipation in 11 patients, urgent defecation. Pain in 3 urinary retention in 5 patients. No dehiscence or rectal perforation was noticed in this group.

The known late complications are anal stenosis still not nodied in our group. Praritis in 2 patients no late anal pain and no urgency reported. The overall complications in this study were 19% and the majority were were mild & fades during the follow up period. Persistent pain after SH after one week is considered chronic and but is low ration not exceeding 3%. And the reported range of literature was 5%. (Ielpo et al., 2010). Another complication was urine retention, which is common in anorectal surgery, occured in 1.5-33%, in the world literature (Mlakar and Kosorok, 2003). In our experience urinary

retention occurred in 11% of cases. The causes are unclear but fluid intake in the perioperative period (Ravo et al., 2002). Pelvic sepsis or other septic complication was not reported in our study. Although, it is mentioned in the literature (Guy and Seow-Choen, 2003). No septic complications reported in our results.

Conclusions

The recent introduced methods of haemorrhoidectomy, SH to our country proved to be effective & safe in managing grade III and IV haemorrhoides. It is a safe surgical alternative and the procedure has few postoperative communications, short hospital stay with minimal perianal pain, further studies afont the procedure need to be done or domlred to get further results.

Stapled hemorrhoidectomy is a surgical technique for treating hemorrhoids and is the treatment of choice for third-degree hemorrhoids. Chemorhoids that protrude with straining and can be seen on physical examination extride the anal Verge. Stapled hemorrhoidectomy is a misnomer since the surgery does not remove. The hemorrhoid but rather than abnormally lax and expanded hemorridal supporting tissue that has allowed the hemorrhoid to peoslaps downward. For stapled hemorrhoidectomy a circular hollow tube is inserted into the anal canal through this tube a suture (along thread) is placed. Actually women circumferentially with in the anal canal above the internal hemorrhoide. The ends of the sutures are trought out of the annus through the hollow tube. The staplerwhich is a disposible instrument with a circular stapling device at the end) is placed though the first hollow tube and the ends of the sutures are pulling the suture pulls the expanded hoermonhordal supporting fissure into the jewe the of the stapler the heneathadal cusirrs are pulled back up into their normal position within the anal canal the stapler then is fixed and it cuts off the circumtential ring of expanded hemoshoidal tissue trapped within the stapler and at the same time staples together the upper and lower edges of the cut tissue.

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