

AN AMBISPECTIVE COHORT STUDY OF TRADITIONAL HEMORRHOIDECTOMY VS CHIVATE PROCEDURE – POST OP COMPLICATIONS.

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ABSTRACT

Introduction: Hemorrhoids are considered one of the most common anorectal diseases with a prevalence of 4.4% up to 36.4% of the general ¹ population, and a peak incidence between 45 and 65 years^{2,3}. Hemorrhoids are clusters of vascular tissue, smooth muscle, and connective tissue arranged in three columns along the anal canal. They results from the increased pressure in haemorrhoidal plexus of vein, with elastic tissue in anal cushions acting as a degeneration of contributing factor. Treatment modality includes conservative treatment, OT procedures, and suture hemorrhoidopexy. Minimally invasive procedures are the new trend in surgery. Suture hemorrhoidopexy procedure was first described by Dr. Antonio⁴ Longo in 1993. It avoids wound in sensitive perianal and anal areas and, as a result, has the advantage of significantly reducing postoperative pain and hospital stay Dr Shantikumar Chivate⁴ modified this technique and termed it as Transanal Suture Mucorectopexy. Thus this study helps to learn the new technique for better treatment to the patient.

Materials and Methods: This study is designed as a ambispective cohort study in which 60 patients age group between 30 years to 60 years both male and female having symptomatic hemorrhoids. Each patient had a pre-operative digital rectal examination and proctoscopy, colonoscopy in few cases where in required to identify the grade. Of these 60 patients, 30 patients will undergo traditional haemorroidectomy(**TH**) and 30 patients will undergo chivate procedure(**CP**). An informed consent will be obtained from the patients for the participation in the study. Outcomes in terms of postoperative pain, hospital,stay return to daily activities, minor complications (mild surgical pain), major complications like recurrence in less than 6 months , one year, re do surgery, acute pain, anal stricture / stenosis.

Results: The mean age of this patients in our study was 40, where in females are predominant. % of CP complained less pain over TH and % of CP complained post op bleeding and discomfort

Conclusion:Chivate's transanal suture rectopexy (chivate procedure – CP) for haemorrhoid is a very simple stitching procedure, and the learning curve is minimal. Its post op results in regard to pain, bleeding, comfortness and early to work is much minimal than other procedures.

Keywords:traditional haemorrhoidectomy , haemorrhoidectomy, chivate procedure, Suture hemorrhoidopexy

Introduction :

Haemorrhoids are a common proctological disease that affects the quality of life in the patient population to a great extent. They results from the increased pressure in haemorrhoidal plexus of vein, withdegeneration of fibroelastic tissue in anal cushions acting as a contributing factor. They are classified as 'internal' or 'external' by where they are located in relationship to the pectinate line, the dividing point between the upper 2/3 and lower 1/3 of the anus. Internal hemorrhoids are located above the pectinate line and are covered with cells that are the same as those that line the rest of the intestines. External hemorrhoids arise below the line and are covered with cells that resemble skin.

Hemorrhoidal disease presents with a prolapsed lump, painless bleeding, discomfort, discharge, hygiene problems, soiling, and pruritus.⁹⁻¹¹ Sliding anal canal lining theory is the most accepted theory as a cause of hemorrhoidal disease; however, it is also associated with hyper-vascularity, and, recently, with several enzymes or mediators involved in the disintegration of the tissues supporting the anal cushions, such as matrix metalloproteinase¹². In grade I hemorrhoids the mucosa barely prolapses, however, with severe straining, they may be trapped by the closing of the anal sphincter. Subsequently, venous congestion occurs occasionally, resulting in discomfort and/or bleeding. Grade II hemorrhoids are further protruded in the mucosa, and thus the patient complains of an obvious lump, but this disappears spontaneously and rapidly after defecation unless thrombosis occurs. Grade III hemorrhoids are seen in chronic hemorrhoidal disease, where the persistent prolapsing produces dilatation of the anal sphincter, and the hemorrhoids protrude with minimal provocation and usually require manual replacement. In case of grade IV hemorrhoids, these are usually external and are protruding all the time unless the patient replaces them, lies down, or elevates the foot of the bed. In these fourth degree hemorrhoids, the dentate line also distends, and there is a variable external component consisting of redundant, permanent perianal skin.¹³ The actual cause of hemorrhoids remains unknown.¹⁴

But it is proposed to be caused by temperament, body habits, customs, passions, sedentary life, tight-laced clothes, climate.¹⁵ Patients with spinal cord injuries constipation, chronic diarrhea, poor bathroom habits, postponing bowel movements, and a poor-fiber diet are also considered to be contributing causes.¹⁶

Hemorrhoids become an issue only when they begin to swell, causing itching, pain and/or bleeding. Internal hemorrhoids or true hemorrhoids are further graded based on the extent to which the tissue descends in to the anal canal. Since centuries, a large number of treatment modalities for haemorrhoidal disease are known, but none is the ideal one. The ideal treatment was not possible without understanding the definite pathology and pathological anatomy⁵. Intense study of pathology of hemorrhoids was carried in the last 35 years, which led to renew interest in, by which the development of innovative procedures occurred⁶⁻⁸. Minimally invasive procedures are the new trend in surgery. There is a need to study the minimally invasive procedures employed in the management of hemorrhoids to decrease morbidity, disease burden and duration of hospital stay. This study has included two types of surgeries for the management of hemorrhoids.

Treatment modalities includes conservative treatment, office procedures (ligation, sclerotherapy, cryosurgery, and laser therapy), as well as surgical procedures including diathermy hemorrhoidectomy, LigaSure hemorrhoidectomy, Harmonic scalpel hemorrhoidectomy, hemorrhoidal artery ligation, stapled hemorrhoidopexy, and suture hemorrhoidopexy. Surgical procedures are effective at eliminating hemorrhoids but may be painful. Minimally invasive procedures are the new trend in surgery. There is a need to study the minimally invasive procedures employed in the management of haemorrhoids to decrease morbidity, disease burden and duration of hospital stay. Suture hemorrhoidopexy procedure was first described by Dr. Antonio⁴ Longo in 1993. It avoids wound in sensitive perianal and anal areas and, as a result, has the advantage of significantly reducing postoperative pain and hospital stay. Longo's procedure depends on shortening of long prolapsing tissue and fixing of cushions to their original position by auto suturing above the dentate line. Dr Shantikumar Chivate⁴ modified this technique and termed it as Transanal Suture Mucorectopexy. This study was planned to directly compare suture hemorrhoidopexy as a newer procedure with traditional hemorrhoidectomy as an older established procedure for the treatment of grade 2 to grade 4 hemorrhoids which has the advantage of significantly reducing postoperative pain and hospital stay.

AIMS AND OBJECTIVES

This study was conducted in department of surgery, ESIC Medical College and Hospital, Hyderabad with the following aims and objectives.

1. To compare and analyze the immediate, early, and delayed postoperative complications of suture hemorrhoidopexy (CP) and open hemorrhoidectomy (TH).

INCLUSION CRITERIA

All Patients coming to surgical OPD with history of per rectal bleeding, pain external mass and confirmed after routine examinations, having grade II / III / IV hemorrhoids, are included in the study.

EXCLUSION CRITERIA

Patients with thrombosed piles, perianal hematoma, and ulcerated piles excluded after confirmation.

Anal stricture, Recto-sigmoid growth, Perianal fistula and fissure.

METHODOLOGY

This study was conducted in department of surgery, ESIC Medical College and Hospital, Hyderabad, wherein patients presented to OPD with complaints per rectal bleeding, pain external mass, diagnosed with 2nd, 3rd or 4th degree hemorrhoids were noted. Patients were divided into 2 groups randomly.

Chivate procedure CP (suture hemorrhoidopexy) group and traditional hemorrhoidectomy TH..

FOLLOWING PARAMETERS WERE ANALYZED AND COMPARED:

1. Operative duration
2. Immediate complications
 - a. Postoperative pain
3. Early complications
 - a. Postoperative bleeding
 - b. Anal stricture
4. Duration of Hospital stay
5. Delayed complications
 - a. Recurrence
 - b. Anal stricture

PROCEDURE and TECHNIQUE:**TRADITIONAL HAEMORRHOIDECTOMY**

Open hemorrhoidectomy is most commonly used in UK known as Milligan-Morgan Operation named after surgeons who described it. The skin is cut to the lateral hemorrhoid; Transfixation and ligation of the pedicle

TECHNIQUE

Under general or spinal anaesthesia, the patient is put in lithotomy position, anal sphincter is gently stretched and the internal hemorrhoids are then prolapsed by traction on skin tags or skin of anal margin. Each hemorrhoid is picked up with dissecting forceps and traction exerted. Traction displays a longitudinal fold (pedicle) above hemorrhoid, which is grasped with hemostat. The external hemorrhoid or skin tag connected to internal hemorrhoid is also held with hemostat. These pair of hemostats when held out by assistants forms a triangle. The operator takes the left lateral pair of hemostats in his palm and places the extended fore finger in anal canal to support internal hemorrhoid.⁹ In this way traction is applied to anal margin, and with scissors a V shaped cut is made on either side of the skin holding hemostat, the cut traversing the skin and corrugators cutis ani. Exerting further traction and little blunt dissection exposes lower border of internal sphincter. A transfixing ligature of Vicryl is applied to pedicle at this level. Each haemorrhoid is dealt in this manner and is excised 1.25 cm above knot. The stumps of ligated haemorrhoids are returned into rectum by tucking with a piece of gauze. The margins of skin wounds are trimmed so as not to leave overhanging edges. Bleeding subcutaneous arteries are secured, at the corners the three pieces of petroleum jelly gauze are tucked into the anus so as to cover the area denuded of skin. Complications include Pain, Acute Reactionary or secondary hemorrhage, Anal stenosis, Anal fissure, Abscess, Fistula in ano and Long-term Incontinence.

CHIVATE SUTURE HAEMORRHOIDOPEXY**TECHNIQUE**

The proctoscope is made up of a uniform metal tube of 3.6 cm inner and 3.8 cm outer diameters; along with fibro-optic connection. The tube is cut off its 1/8th circumference and sliding flap is prepared opposite to the fibro-optic connection. The leading end of the tube is conical and smooth

that closes the tube, which facilitates the introduction of the proctoscope and prevents faecal matter to enter in the operation field. The sliding valve can be adjusted at any length. The proctoscope is calibrated at 1-cm marking over the inner aspect of the tube. The scope retracts the anus and rectum without excessive stretching. Patients were given Enema 12 hours and 6 hours before the operative procedure. After giving spinal anaesthesia, patients were positioned in lithotomy with a little head low, which reduced the prolapsing pile masses. The lax mucosal and submucosal tissues were placed in their anatomical position. Anal canal was lubricated with xylocaine jelly. A self illuminated slit with sliding valve proctoscope, designed by Dr. Chivate was used. After removing the sliding plate, dentate line was identified. The lax mucosa and submucosa was sutured to rectal muscles in two circumferential suture lines, 2cm and 4 cm proximal to dentate line. First stitch was tied and the subsequent stitches which were 0.5-1 cm in length were double interlocked. The double interlocking avoided the purse string effect and thus the anal stenosis. Care was taken to not to take complete thickness of rectal wall in stitches. Since both the suture lines were above the dentate line in the insensitive part of anal canal, there was no problem of post operative pain. 2-0 polyglactin with round body 30 mm ½ needle was used. Lax mucosa and submucosa was sutured in its original position and the blood supply to haemorrhoidal plexus was cut off at two places, thus decreasing the chances of collateral formation which causes recurrence

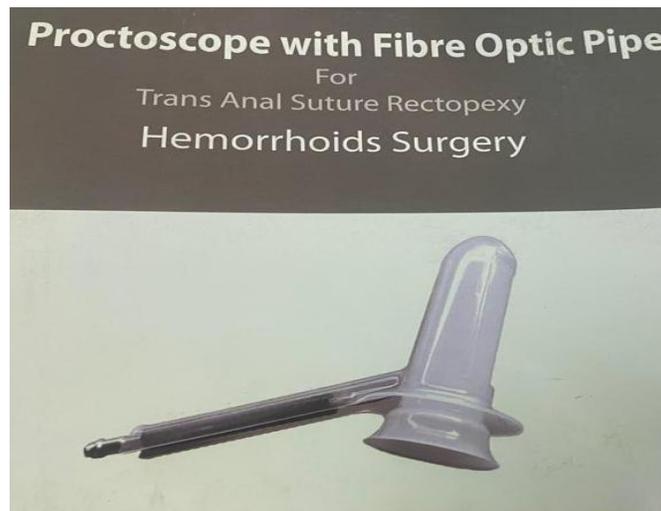


Fig 1-Chivate Scope



Fig 2-Chivate Scope with Vicryl Suture



Fig 3- Case -1 Pre-OP

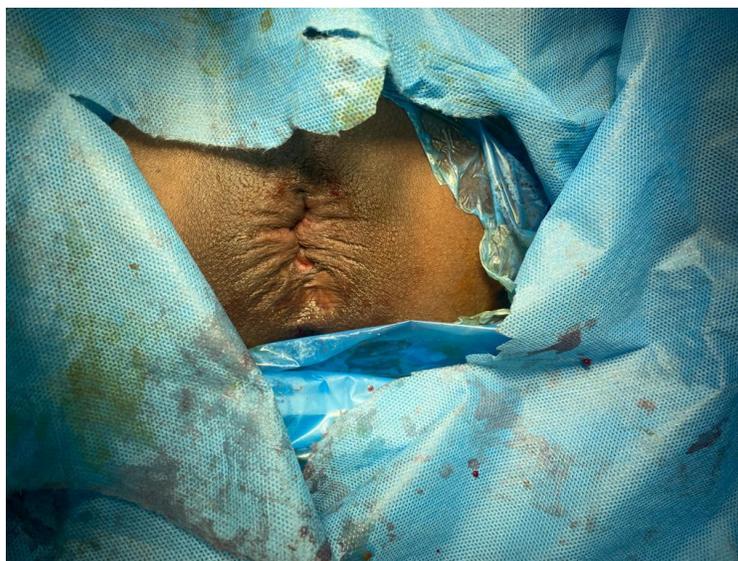


Fig 4- Case -1 Post-OP

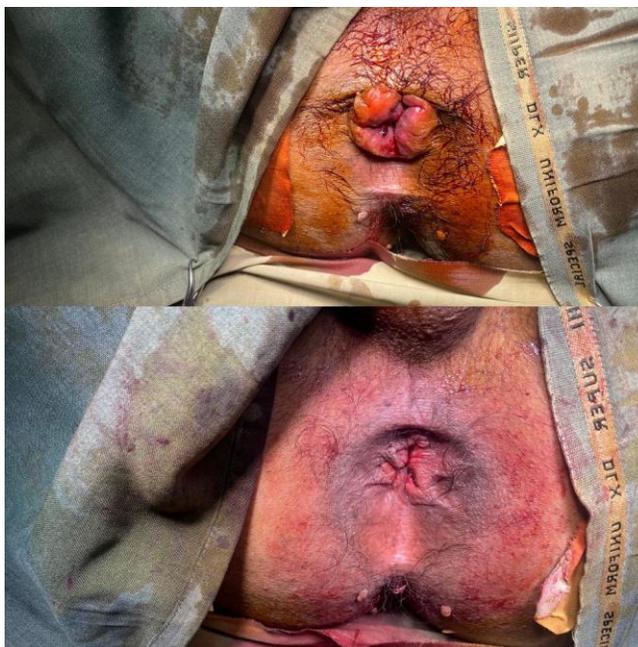


Fig 5- Case -2 Pre and Post Chivateprocedure



Fig 6- Intra OP Use of Schivate Scope

Results and Discussion:

Total of 60 patients were included in this study, 30 in each group. The mean age of the participants are majority of which belongs to 40-50 years. Most of the cases were females, 45. In open haemorrhoidectomy group 20 were female and 10 were male, whereas in chivtaehaemorrhoidopexy group 25 were female and 05 male.

Age and Sex Distribution In Two Groups				
		OPEN	CHIVTAE	TOTAL
AGE	30-40	2	6	8
	40-50	18	14	32
	50-60	10	10	20

	TOTAL	30	30	60
SEX	FEMALE	20	25	45
	MALE	10	5	15
	TOTAL	30	30	60

The duration of operation time in open haemorrhoidectomy group was 45 minutes and for suture haemorrhoidopexy group was 20 minutes is more and statistically significant. Decreased surgical duration helps in less drug usage, OT recourses and less stress to the patient

COMPARISION OF PROCEDURE TIME		
	OPEN (N=30)	CHIVTAE (N=30)
DURATION (MINS)	45	20

Any surgical procedure comes with complications either early or late due to many factors either existing or new factors. Chivate procedure is not an exception but has lesser complications as compared to other procedures.

Post Procedure Complications				
		OPEN (N=30)	CHIVTAE (N=30)	TOTAL (n=60)
PAIN	YES	26	3	29
	no	4	27	31
BLEEDING	YES	24	2	26
	no	6	28	34

Among the early complications after surgery pain, fever and bleeding were most prominent. A total of 26 patients complained of post-operative pain from open haemorrhoidectomy group and 3 from the suture haemorrhoidopexy group. A total of 24 patients had minimal post-operative bleeding of open group and 2 from the suture group which is statistically significant. All these patients were managed conservatively by local packs. With fewer complications comes a added benefit in reduced hospital stay. In our study the mean duration of hospital stays after surgery 3.5 days in open group and 1day in chivate group. It shows that patient operated by suture haemorrhoidopexy were discharged earlier and it is statistically significant.

Post Procedure Complications				
	DAYS	OPEN (N=30)	CHIVTAE (N=30)	TOTAL (n=60)
HOSPITAL STAY	3 TO 4	27	2	29
	<2	3	28	31
RETURN TO WORK	>7 DAYS	28	1	29

	<7 DAYS	2	29	31
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When the time for return to work was compared it was found 28 cases took more than a week few took two weeks among open procedure group, where as 29 cases in private group returned to work in 4 days or less than a week which was statistically significant giving importance to newer technique.

Six months follow-up only 5 patients in open haemorrhoidectomy group developed delayed complications. Bleeding was seen in 3 patients and persistent mild pain discomfort in 2 patients. None of these complications were seen in suture haemorrhoidopexy group

Conclusion:

Hemorrhoids are not varicose veins, and not every one has hemorrhoids. But everybody has anal cushions. The anal cushions are composed of blood vessels, smooth muscle (Treitz's muscle), and elastic connective tissue in the submucosa. They are located in the upper anal canal, from the dentate line to the anorectal ring (puborectalis muscle). Three cushions lie in the following constant sites: left lateral, right anterolateral, and right posterolateral. Smaller discrete secondary cushions may be present between the main cushions. Treatment modalities are available in wide range from age old mulligan morgan to latest advanced procedures. With development and techniques and competitive life style, early to work and painless surgery is more opted by patient. Hemorrhoids being the more common problem and emphasis on newer techniques is much needed. In our study we have achieved a significant importance to suture haemorrhoidopexy in relation to technique, surgery time, post complication and patient comfort. As in sutured haemorrhoidopexy group there is no tissue dissection and the sutures were doubly locked, there is no purse string effect and no chance of developing anal stenosis which helps for early recovery and less pain

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