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KEY WORDS: Chivate`s Procedure, Transanal Suture Rectopexy,milligan Morgan Open Hemorrhoidectomy, Haemorrhoids.

TO EVALUATE AND STUDY OUTCOME OF TRANSANAL SUTURED RECTOPEXY (CHIVATE'S PROCEDURE)

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ABSTRACT

Background: Transanal sutured rectopexy, sometimes referred to as Chivate's operation, is a cutting-edge surgical method for the management of grade III and IV hemorrhoids. The purpose of this study is to assess the procedure's results in relation to complications, discomfort, bleeding, hospital stay, and recurrence. **Methods:** Thirty cases were included in this comparative study, which was carried out at MGM Hospital in Aurangabad. The time frame for the study was October 2022–October 2024. Its goal was to assess the results of Chivate's Procedure, also known as transanal sutured rectopexy, in patients who had hemorrhoids by looking at a number of clinical, postoperative, and demographic factors. The results show patterns in the age and gender distribution of the patients treated, offering insights into the procedure's effectiveness and patient demographics. **Results:** Thirty individuals who had this surgical procedure were included in the study. Ages 41 to 50 accounted for 36.67% of the patient population, suggesting that middle-aged people had a higher frequency of hemorrhoids that required surgery. Given that men made up 73.33% of the patients, it is possible that men are more likely than women to report having hemorrhoids. These revelations offer a thorough grasp of the patient demographics and the efficacy of the Chivate Procedure in the management of hemorrhoids. **Conclusion:** The Transanal Sutured Rectopexy trial shows notable gains in pain management, patient satisfaction, and a decrease in postoperative problems such bleeding and hemorrhage recurrence. The study indicates the procedure's potential usefulness in controlling hemorrhoids, despite certain drawbacks, including a limited sample size and a single-center design. More extensive research including a wider range of participants and extended follow-up periods is required to corroborate these results and improve surgical techniques and clinical judgment

INTRODUCTION

Due to conditions including extended sitting, constipation, pregnancy, and persistent straining that raise pressure in the anal canal, hemorrhoids are a common health problem[1] that are uncomfortable and interfere with everyday living. Pain, itching, and bleeding are the symptoms that arise from this pressure, which also causes venous congestion and hemorrhoids.[2]

Treatment options include both surgical treatments and more conservative approaches including topical medicines and dietary adjustments. [3]While effective, traditional operations like rubber band ligations and excisional hemorrhoids can result in severe postoperative pain and recuperation times.[4]

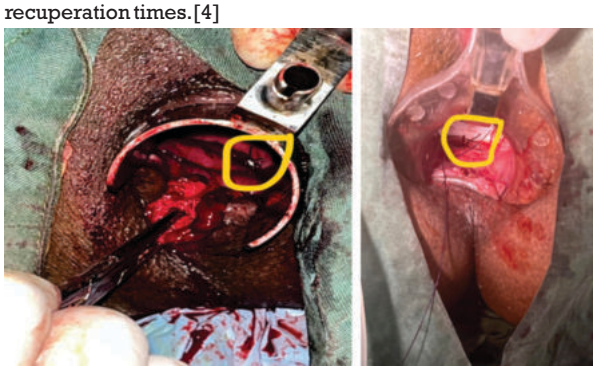


Fig1. Hemorrhoids with 2 layers of sutures

While cutting edge methods such as Doppler-guided hemorrhoidal artery ligation and stapled hemorrhoidopexy attempt to enhance results, they can be expensive and resource-intensive.[5] Particularly for situations involving hemorrhoids, a less intrusive technique called transanal suture rectopexy, sometimes referred to as the Chivates surgery, provides a satisfactory outcome. [6]

Compared to conventional operations, this method reduces complications and retains anal function. In order to demonstrate the potential of transanal suture rectopexy to enhance patient outcomes and quality of life, the thesis evaluates the effectiveness and safety of this procedure in treating hemorrhoids with an emphasis on symptom resolution, surgical ease, and postoperative complications.[7]

MATERIALS AND METHODS:

This comparative study involved 30 patients with grade II, III, or IV hemorrhoids and was carried out at MGM Hospital in Aurangabad between October 2022 and October 2024. Participants gave their informed consent and ranged in age from 18 to 80. Recent perianal or rectal surgery, thrombosed piles, cancer, anorectal fistula, proctitis, and bleeding disorders were among the exclusion criteria. Chivate's proctoscope and Polyglactin (PGS 910) sutures were used in the investigation.

Methodology

The patients had transanal sutured rectopexy. They were provided a proctoclysis enema 12 hours and 6 hours before the operational procedure. The loose submucosal and mucosal tissues were moved back into their proper anatomical locations. Xylocaine jelly was used to lubricate the anal canal. A self-illuminated slit with a sliding valve proctoscope, created by Dr. Chivate, was employed. The dentate line was located once the sliding plate was removed. Two circumferential suture lines, separated by 2 cm from the first line and 4 cm proximal to the dentate line, were used to suture the lax mucosa and submucosa to the rectal muscles. The purse-string effect and ensuing anal stenosis were avoided by the twin interlocking sutures. The entire thickness of the rectal wall was carefully avoided being stitched. In the insensitive portion of the anal canal, both suture lines were above the dentate line, therefore there was no postoperative pain. The needle utilized was a round body 30 mm ½ 2-0

polyglactin. The hemorrhoidal plexus's blood supply was severed at two points, suturing the lax mucosa and submucosa to their original positions. These measures decreased the likelihood of collateral formation and recurrence.

Clinical signs, per-rectal exams, and proctoscopy were used in the diagnosis of hemorrhoids. The findings were graded according to the Goligher classification. Surgery was indicated for individuals with Grade II, III, and IV hemorrhoids after informed agreement was obtained and preoperative evaluations were completed. Dietary adjustments and enemas were required prior to the procedure. Under spinal or saddle block anesthesia, patients were put in lithotomy positions and the anal canal was lubricated. A self-illuminated proctoscope was used to evaluate the anal canal, and double-locking sutures were used to realign the mucosa and submucosal tissue around the rectum. There were two centimeters separating the first and second suture lines.

RESULT:

1. Demographic characteristics and type of Hemorrhoids of patients with Transanal sutured rectopexy

Age (years)	Count (Percentage) (N=30)
21-30	3 (10.00%)
31-40	8 (26.67%)
41-50	11 (36.67%)
51-60	5 (16.67%)
61-70	3 (10.00%)
Gender	
Male	22 (73.33%)
Female	8 (26.67%)
Hemorrhoids type	
Internal	9 (30.00%)
Interno External	21 (70.00%)

Total 30 patients undergo Transanal Sutured Rectopexy. All the patients are between 21 to 70years age group. Age group 41-50 years had highest percentage 36.67%of patients. Male patients 73.33% are more in number than female patients 26.67%. All the patients stayed only 3 days in the hospital. Interno external Hemorrhoids type patients 70% are more in number than internal Hemorrhoids type patients 30%.

2. Chief complaints of patients with Transanal sutured rectopexy

Duration of complaints	Count (Percentage) (N=30)
Bleeding	
<=10 days	7 (23.33%)
1 Month	8 (26.67%)
2 Month	1 (3.33%)
3 Month	4 (13.33%)
1 Year	4 (13.33%)
Constipation	
<=1 Month	4 (13.33%)
2 Month	4 (13.33%)
1 Year	1 (3.33%)
2 Year	1 (3.33%)
Protruding Mass	
<=1 Month	3 (10.00%)
2 - 3 Month	6 (20.00%)
4 - 6 Month	2 (6.67%)
1 Year	4 (13.33%)
> 1 Year	1 (3.33%)

80% patients have bleeding complaints in which 26.67% patients bleeding period duration is 1 month, 23.33% patients bleeding duration is less or equal to 10 days, 13.33% patients bleeding period duration is 1 year. 20% patients do not have bleeding complaints. 66.67% patients do not have Constipation complaints.13.33% patients constipation duration is less than or equal to 1month and same number patients' constipation duration is 2 months. 53.33% patients have protruding mass complaints in which 20% patients protruding mass duration is 2 to 3 months, 13.33% patients protruding mass duration is 1 year, 3.33% patient bleeding period duration is more than 1 year.46.67% patients do not have protruding mass complaints.

3. Intra and post operative findings of Patients with Transanal sutured rectopexy

Intra and post operative findings	Count (Percentage) (N=30)
INTRA OPERATIVE BLEED	2(6.67%)
POST OPERATIVE PAIN	17(56.67%)
Post Operative	
CONSTIPATION	8(26.67%)
Persistence of PR Bleed	
2 weeks	9(30.00%)
1 Month	1(3.33%)
Recurrence of PR Bleed	
2 weeks	2(6.67%)
Post Procedure Pain	
2 weeks	8(26.67%)

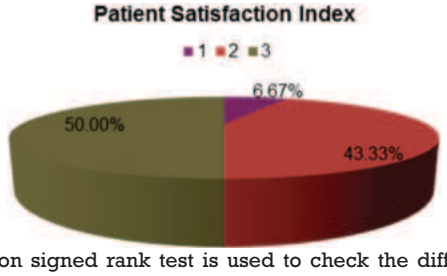
Only 6.67% patients are with intra operative bleed and 56.67% patients are suffering from post-operative pain. No Infection and no recurrence of hemorrhoid is found in any of the patients post operation. Only 26.67% patients suffer from constipation post operation.

After Transanal sutured rectopexy in 2 weeks 30% patients and in 1 month 3.33% patients suffer from PR Bleed but in 2 months and 3 months no patients suffer from PR bleed. Only in 2 weeks after Transanal sutured rectopexy 6.67% patients suffer from recurrence of PR Bleed. After that no patients is suffering from recurrence of PR Bleed. After Transanal sutured rectopexy no patient is showing presence of hemorrhoid mass. 26.67% patients suffered from post procedure pain in 2week after Transanal sutured rectopexy. No patients after 1 Month suffer from post procedure pain.

4. Pain scale and satisfaction index of Patients with Transanal sutured rectopexy

Pain scale	Pvalue
Visual Analogue Scale	$1.465x10^{-06}$
Pain Rating scale	$1.824\ x10^{-06}$
Patient Satisfaction Index	Count (%)
1	2(6.67%)
2	13(43.33%)
3	15(50.00%)

4.1. Patient Satisfaction Index of Patients with Transanal sutured rectopexy



Wilcoxon signed rank test is used to check the difference between two scores before and after the Transanal sutured rectopexy.

Visual analogue score before is significantly different than Visual analogue score after the Transanal sutured rectopexy. Overall, it is showing improvement in pain of patients after Transanal sutured rectopexy.

According to Pain rating scale most of the patients with no pain after Transanal sutured rectopexy. Pain rating scale

before is significantly different than Pain rating scale after the Transanal sutured rectopexy.

According to pain satisfaction index, 6.67% patients' opinion is Transanal sutured rectopexy meet their expectations. 43.33% patients' opinion is Transanal sutured rectopexy improved their condition enough so that they would go through it again for the same outcome.50% patients' opinion is Transanal sutured rectopexy helped them but they would not go through it again for the same condition. No patient is unsatisfied by the Transanal sutured rectopexy.

DISCUSSION

The present study aimed to evaluate and study the outcomes of Transanal Sutured Rectopexy (Chivate's Procedure) in patients presenting with hemorrhoids. This analysis was conducted based on various demographic, clinical, and postoperative parameters to provide a comprehensive understanding of the procedure's efficacy and associated outcomes. The data presented in this study reflects the experiences of a cohort of 30 patients who underwent this surgical intervention.

The demographic analysis of patients undergoing transanal sutured rectopexy (Chivate's procedure) reveals key trends in age and gender distribution. A significant proportion of patients, 36.67%, fall within the 41-50 years age group, indicating a higher incidence of hemorrhoids requiring surgical intervention among middle-aged individuals. Additionally, there is a notable gender disparity, with male patients constituting 73.33% of the cohort, suggesting a higher prevalence or reporting of hemorrhoids among men.

In the study by **Chivate et al.**[5] (2012), the series included 102 males and 64 females, with an average age of 47.5 years, ranging from 22 to 76 years. This supports the observation of a middle-aged predominance in hemorrhoids cases.

Another study by **Singh et al.**[13] also highlights a gender disparity in hemorrhoids patients undergoing CP, with 43 out of 58 patients being male (75%) and 15 being female (25%). The mean age of these patients was 42.5 years, with an age range of 20 to 80 years.

Further supporting these findings, **Chivate et al.** [12] **(2022)** reported on 36 adult patients undergoing the procedure, with 26 males and an age range of 23 to 92 years, reinforcing the trend of a higher prevalence in middle-aged to older male patients.

These studies collectively underscore the demographic patterns of hemorrhoids, with a notable middle-aged predominance and significant gender disparity favoring male patients.

The chief complaints among patients were predominantly bleeding, constipation, and protruding mass. Bleeding was reported by 80% of patients, with the majority experiencing it for less than a month. Constipation was less prevalent, affecting 33.33% of the patients, with durations mostly less than two months. Protruding mass complaints were present in 53.33% of patients, typically lasting up to three months. This highlights the chronic nature of symptoms leading to surgical intervention.

In the study by **Chivate et al.,**[5] frequent episodes of bleeding per rectum were noted in all cases, with various severities: grade II (24 cases), grade III (38 cases), and grade IV (19 cases). Itching around the anus was also common, affecting grade II (24 cases), grade III (38 cases), and grade IV (19 cases) patients. Additionally, discharge per rectum and soiling underwear were observed in grade II (16 cases), grade III (20 cases), and grade IV (16 cases).

Santhi Vardhani et al.[14] noted minimal bleeding intraoperatively in one patient. Furthermore, three patients experienced urinary retention, and another two had transient anal incontinence to flatus and liquid stools.

These findings underscore the predominance of bleeding, constipation, and protruding mass as chief complaints among hemorrhoids patients, with varying degrees of associated symptoms, leading to the decision for surgical intervention.

A history of PR bleeding was the most common presenting illness, observed in 60% of patients, followed by mass protrusion in 26.67%. Combined symptoms like PR bleed with pain or constipation were less frequent. This symptomatology underscores the importance of addressing bleeding and prolapse in the surgical management of these patients.

Rectal bleeding is the main symptom of internal hemorrhoids, with the blood characteristically bright red. It has been suggested that the internal hemorrhoid plexus resembles the corpus cavernosum, featuring direct arteriovenous communications. Clinical features often include pain and bleeding from the anus, itching, and a pile mass that may be reduced by manipulation.[45]

The predominance of PR bleeding among patients highlights the chronic and often severe nature of hemorrhoids symptoms, necessitating timely and effective surgical intervention to alleviate these distressing conditions.

Blood pressure readings indicated that 50% of patients had systolic BP over 120 mmHg, while 90% had diastolic BP below 80 mmHg. These findings suggest a relatively low incidence of hypertension in the study population.

Proctoscopic examination revealed that 50% of patients had Grade 3 hemorrhoids, and 26.67% had combined Grade 2 and 3. This grading is critical for determining the severity and surgical approach for hemorrhoids and hemorrhoids.

In the study by **Chivate et al.,** hemorrhoids were graded as follows: Grade II (54 cases), Grade III (88 cases), and Grade IV (24 cases) in a series of 166 patients.

Santhi Vardhani et al. reported that among patients who underwent Chivate's procedure, 40% (6 patients) had Grade III hemorrhoids, and 60% (9 patients) had Grade IV hemorrhoids. Additionally, in the Milligan-Morgan procedure group, all 15 patients (100%) had Grade IV hemorrhoids.

These findings emphasize the importance of accurate hemorrhoid grading in the clinical assessment and management of hemorrhoids, as it directly influences the choice of surgical intervention and the anticipated outcomes.

Interno-external hemorrhoids were more common, found in 70% of patients compared to 30% with internal hemorrhoids. This distribution supports the need for comprehensive surgical techniques addressing both internal and external components.

The mean operative time for transanal sutured rectopexy was 30-40 minutes for 73.33% of patients, indicating the procedure's feasibility and efficiency. Intraoperative bleeding was minimal, occurring in only 6.67% of patients. Postoperative complications were also low, with no infections or recurrence of hemorrhoids reported. However, 26.67% of patients experienced constipation postoperatively.

According to **Chivate et al.,** all patients were discharged 24 hours postoperatively, except for two cases. Minor postoperative bleeding was noted in three cases, requiring no treatment. Hemorrhoid masses were reduced by 90% immediately postoperatively and further reduced within 3-7

days. During the suture rectopexy for hemorrhoids, minor oozing from some stitches occurred in 11% of cases and was controlled by compression. Additionally, a small area of mucosal tear noted in the early three cases required no treatment.

These results highlight the procedure's overall safety and effectiveness, with minimal intraoperative and postoperative complications and a quick recovery time for most patients.

Pain assessment showed significant improvement post-surgery. Preoperative visual analogue scores were predominantly above 5, while postoperative scores dropped below 6, with 63.33% of patients reporting scores between 3-4. Similarly, pain rating scales decreased significantly postoperatively, with 70% of patients rating their pain at 1. This significant reduction in pain underscores the procedure's effectiveness.

Patient satisfaction was high, with no patients expressing dissatisfaction. About 50% reported that the surgery helped but were reluctant to undergo it again, while 43.33% felt their condition improved enough to warrant repeating the procedure if necessary.

The study had several limitations that should be acknowledged. First, the sample size was relatively small, consisting of only 30 patients, which may limit the generalizability of the findings to the broader population. Additionally, the study was conducted at a single center, MGM Hospital in Aurangabad, which may not represent the diverse demographics and clinical practices found in other regions or healthcare settings. The follow-up period was limited to one month postoperatively, which may not be sufficient to capture long-term outcomes and potential complications that could arise beyond this period. Furthermore, the study relied on subjective measures such as patient satisfaction and pain perception, which can introduce bias due to individual differences in pain thresholds and expectations. Another limitation was the lack of consideration for potential confounding factors, such as patients' comorbid conditions, lifestyle factors, and adherence to postoperative care instructions. Lastly, the absence of a control group for comparison makes it challenging to assess the relative effectiveness of the Transanal Sutured Rectopexy procedure against other treatment modalities.

CONCLUSION

This study on Transanal Sutured Rectopexy provides valuable insights into the clinical outcomes and patient experiences following this surgical intervention. The procedure demonstrated significant improvements in pain relief, patient satisfaction, and reduction of postoperative complications such as bleeding and recurrence of hemorrhoids. Despite its limitations, including a small sample size and single-center nature, the study underscores the potential efficacy of Transanal Sutured Rectopexy in managing hemorrhoids and associated symptoms.

Moving forward, larger-scale studies incorporating diverse patient populations and longer follow-up periods are warranted to validate these findings and further elucidate the procedure's long-term efficacy and safety profile. Addressing these aspects will not only enhance clinical decision-making but also contribute to refining surgical practices and optimizing patient outcomes in the management of hemorrhoids. Thus, while acknowledging its limitations, this study suggests promising avenues for future research and clinical applications of Transanal Sutured Rectopexy in the field of colorectal surgery.

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