International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

A Clinical and Analytical Study of Surgical and Patient-Centered Outcomes of Open Haemorrhoidectomy and Chivate's Procedure at a Tertiary Care Centre in Central India

Dr. Ashok Kalbi[1], Dr. Ganesh Kharkate[2], Dr. Raj Gajbhiye[3]

Department of General Surgery, Government Medical College, Nagpur, India

Abstract: ***Background**: Open haemorrhoidectomy remains the standard surgical treatment for haemorrhoidal disease, yet it is often associated with significant postoperative pain and prolonged recovery. Chivate's transanal suture mucopexy (rectopexy) is a minimally invasive, tissue-sparing alternative that aims to reduce postoperative morbidity. **Objectives**: This study aimed to compare surgical and patient-centered outcomes between open haemorrhoidectomy and Chivate's procedure in patients with Grade II–IV haemorrhoids. **Methods**: A prospective randomized study was conducted at Government Medical College, Nagpur, between November 2024 and September 2025. Sixty patients diagnosed with Grade II–IV haemorrhoids were randomized equally into two groups: Group A (open haemorrhoidectomy) and Group B (Chivate's procedure). Key outcome measures included postoperative pain (VAS), operative time, blood loss, complications, duration of hospital stay, time to return to work, and recurrence. Independent t-tests and chi-square tests were applied; $p < 0.05$ was considered statistically significant. **Results**: Patients undergoing Chivate's procedure reported significantly lower pain scores (VAS POD1: 4.3 ± 1.0 vs 7.2 ± 1.1; $p < 0.001$), shorter hospital stays (1.8 ± 0.6 vs 3.6 ± 0.8 days; $p < 0.001$), and earlier return to work (8.7 ± 2.1 vs 14.3 ± 3.2 days; $p < 0.001$) compared to the open haemorrhoidectomy group. Complication rates were lower but not statistically significant. **Conclusion**: Chivate's procedure offers substantial advantages in terms of postoperative comfort and recovery while maintaining comparable long-term outcomes. It represents a safe, simple, and cost-effective alternative to conventional open haemorrhoidectomy, particularly suited to surgical practice in India.*

Keywords: Haemorrhoids; Open haemorrhoidectomy; Chivate's procedure; Transanal suture mucopexy; Minimally invasive anorectal surgery; Postoperative pain; Patient-centered outcomes; Randomized clinical study; Tissue-sparing technique.

1. Introduction

Haemorrhoidal disease is one of the most common anorectal disorders, affecting up to 50% of adults at some point in their lives[1–3]. Surgical intervention is generally indicated for Grade III–IV haemorrhoids or when conservative management fails[4]. Although open haemorrhoidectomy remains the benchmark procedure, it is associated with considerable postoperative pain, delayed wound healing, and prolonged absence from work[5–7].

Chivate's transanal suture mucopexy is based on physiological restoration rather than tissue excision[8]. The procedure repositions and secures prolapsed haemorrhoidal cushions to the rectal wall using circumferential mucosal sutures placed above the dentate line, thereby minimizing tissue trauma and postoperative pain[9].

This study compares the surgical and patient-centered outcomes of open haemorrhoidectomy and Chivate's procedure performed at a tertiary care teaching hospital in central India.

2. Materials and Methods

This prospective randomized clinical study was conducted between November 2024 and September 2025 in the Department of General Surgery at Government Medical College, Nagpur. A total of 60 patients diagnosed with Grade II–IV internal haemorrhoids (according to Goligher's classification) were enrolled and randomly allocated into two groups of 30 each:

- Group A – Open haemorrhoidectomy
- Group B – Chivate's procedure

Inclusion criteria included patients aged 18–80 years with Grade II–IV internal haemorrhoids who had failed conservative or office-based therapies. Patients with previous anorectal surgery, coexisting anal pathology, malignancy, coagulopathy, severe systemic illness, or pregnancy were excluded.

All operations were performed under spinal anaesthesia by experienced surgeons. Postoperative care was standardized across both groups, including analgesia, stool softeners, and sitz baths.Data were analyzed using Student's t-test for continuous variables and Chi-square test for categorical variables. A p-value < 0.05 was considered statistically significant.

3. Results

Both groups were comparable with respect to baseline characteristics including age, sex distribution, haemorrhoid grade, and body mass index. Chivate's procedure resulted in significantly lower intraoperative blood loss and postoperative pain, along with shorter hospital stays and earlier return to work.

Key comparative findings are summarized below.

Table 1: Baseline characteristics

Parameter	Group A (Open) (n = 30)	Group B (Chivate) (n = 30)	p-value
Mean Age (years)	44.2 ± 9.8	42.5 ± 8.7	0.48
Male: Female	19: 11	18: 12	0.79
Grade III: IV	22: 8	23: 7	0.77
BMI (kg/m²)	24.6 ± 2.9	24.3 ± 3.1	0.73

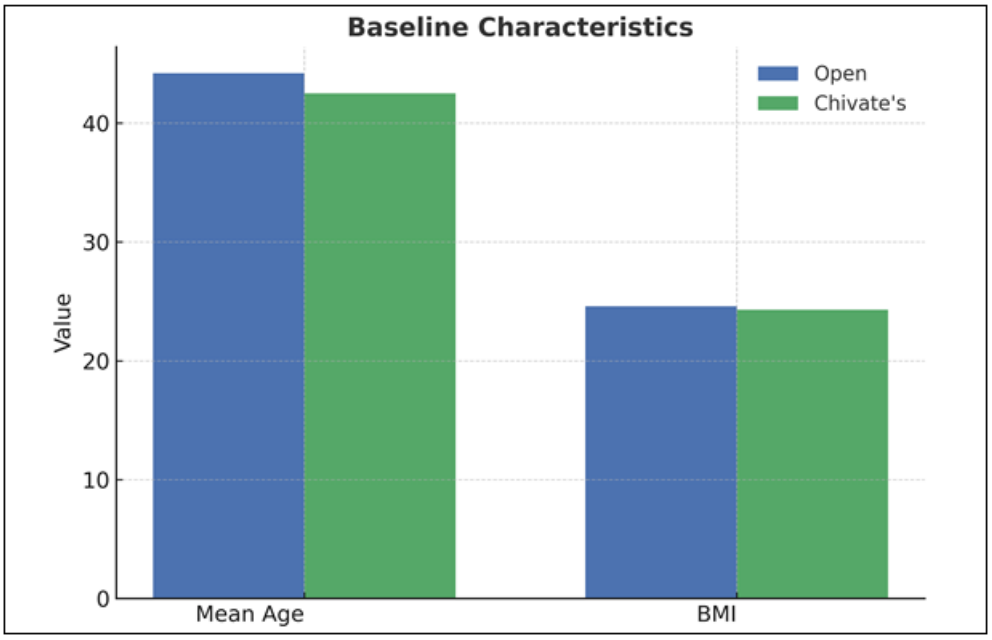

Figure 1

No significant baseline differences.

Table 2: Intraoperative parameters

Variable	Open Haemorrhoidectomy	Chivate's Procedure	p-value
Operative time (min)	34.8 ± 6.7	38.2 ± 7.4	0.06
Blood loss (mL)	47.3 ± 15.2	31.5 ± 10.9	< 0.001

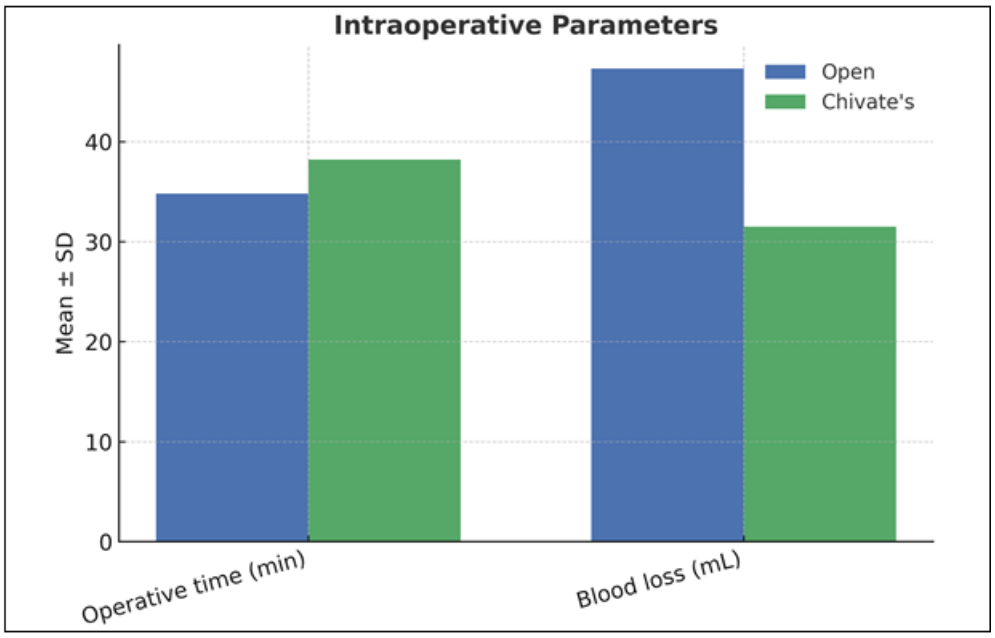

Figure 2

Blood loss was significantly lower in the Chivate group; operative time was comparable.

Table 3: Postoperative outcomes

Outcome	Open Haemorrhoidectomy	Chivate's Procedure	p-value
VAS Pain POD 1	7.2 ± 1.1	4.3 ± 1.0	< 0.001
VAS Pain POD 3	5.1 ± 1.0	2.9 ± 0.9	< 0.001
VAS Pain POD 7	2.8 ± 0.9	1.6 ± 0.7	< 0.001
Hospital stay (days)	3.6 ± 0.8	1.8 ± 0.6	< 0.001
Return to work (days)	14.3 ± 3.2	8.7 ± 2.1	< 0.001
Wound healing (weeks)	4.8 ± 1.1	2.7 ± 0.8	< 0.001
Satisfaction (1–5)	3.8 ± 0.7	4.6 ± 0.5	0.002

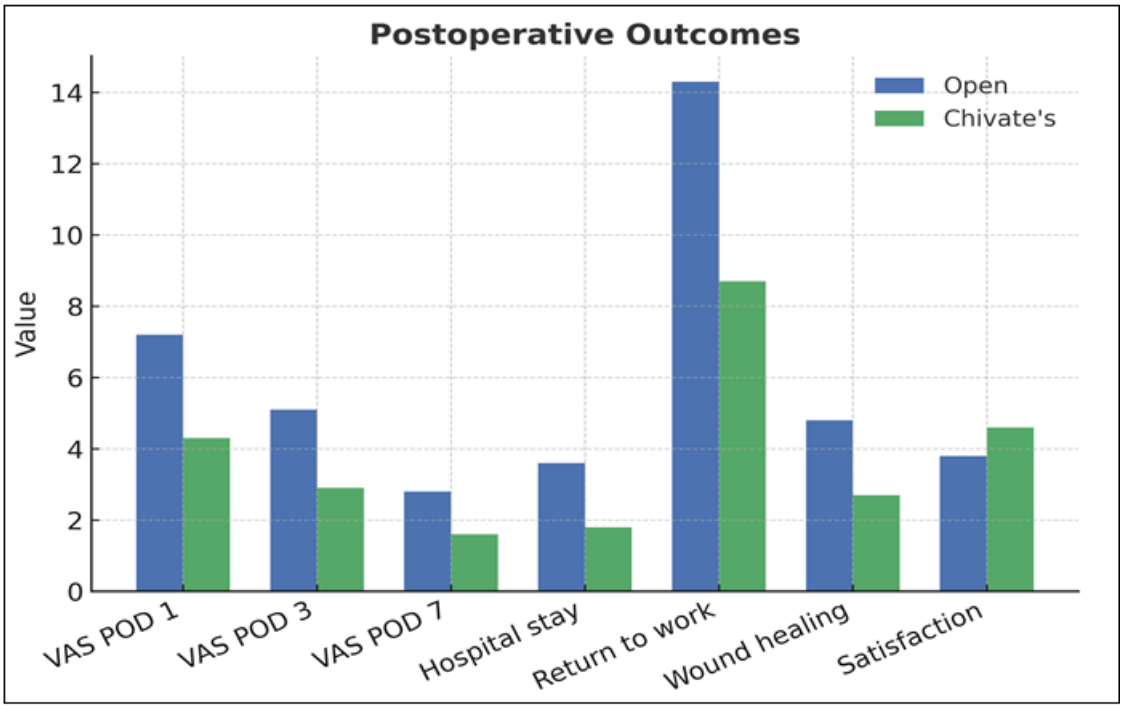

Figure 3

Chivate's procedure yielded markedly lower pain, analgesic use, and faster recovery.

Table 4: Complications

Complication	Open (n = 30)	Chivate (n = 30)	p-value
Urinary retention	3 (10 %)	1 (3.3 %)	0.30
Secondary bleeding	2 (6.7 %)	1 (3.3 %)	0.55
Wound infection	2 (6.7 %)	0 (0 %)	0.15
Anal stenosis	1 (3.3 %)	0 (0 %)	0.31

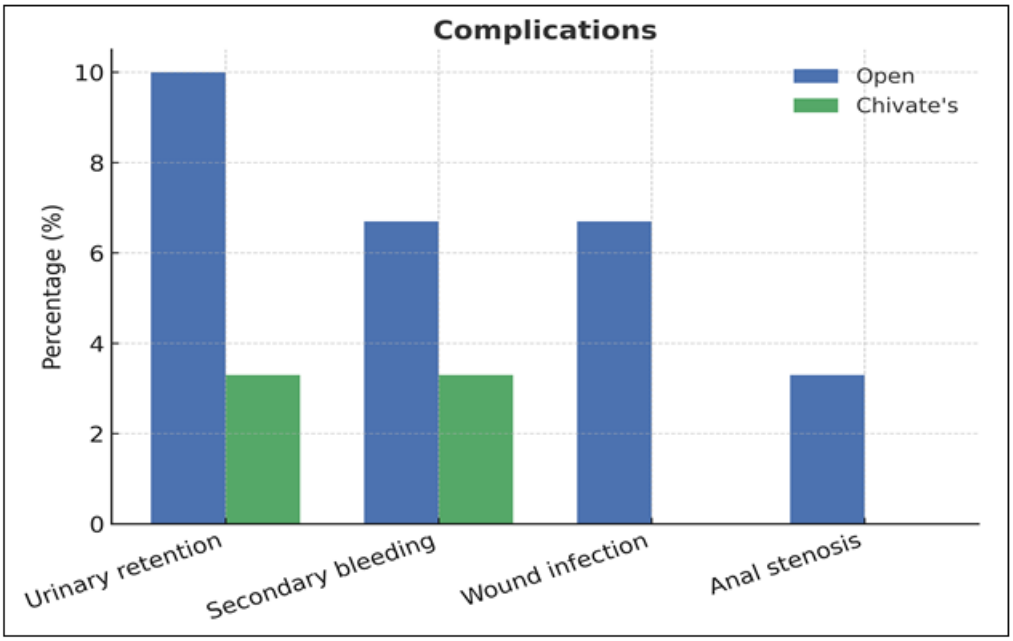

Figure 4

Although not statistically significant, overall complications were fewer with Chivate's procedure.

4. Discussion

The results of this study clearly demonstrate the short-term benefits of Chivate's transanal suture mucopexy over conventional open haemorrhoidectomy. Pain scores were significantly lower at all postoperative intervals, and patients experienced quicker recovery with earlier return to work. Although operative time was marginally longer for Chivate's procedure, the difference was not statistically significant and tends to diminish with surgical experience. The reduced postoperative morbidity can be attributed to the tissue-sparing nature of Chivate's procedure, which avoids excision below the dentate line and thereby minimizes exposure of sensitive anoderm[8].

Complication rates, including urinary retention and secondary bleeding, were lower in the Chivate group, although the differences did not reach statistical significance. Recurrence rates at short-term follow-up were similar between both techniques, confirming equivalent efficacy in disease control.

These findings are consistent with previously published literature supporting Chivate's procedure as an effective, patient-friendly alternative to open haemorrhoidectomy[9–12]. Conventional open haemorrhoidectomy remains effective but continues to be associated with significant pain and slower recovery[5–7]. In contrast, Chivate's technique offers a non-excisional, simpler approach with early recovery and minimal trauma.

Limitations

- Single-centre study with a modest sample size
- Short-term follow-up (12 months)
- Pain assessment subject to patient variability

5. Conclusion

Chivate's transanal suture mucopexy significantly reduces postoperative pain, hospital stay, and recovery time compared with open haemorrhoidectomy, while maintaining comparable long-term outcomes and recurrence rates. It is a safe, simple, and cost-effective surgical option that can be readily adopted in routine clinical practice.

Further multicentre studies with longer follow-up are warranted to validate these findings and assess long-term recurrence

References

[1] Loder PB, Kamm MA, Nicholls RJ, Phillips RK. Haemorrhoids: pathology, pathophysiology and aetiology. Br J Surg. 1994; 81: 946–954.
[2] Johanson JF, Sonnenberg A. The prevalence of hemorrhoids and chronic constipation. Gastroenterology. 1990;98(2):380–386.
[3] Riss S, Weiser FA, Schwameis K, Riss T, Mittlböck M, Stift A. The prevalence of hemorrhoids in adults. Int J Colorectal Dis. 2012;27(2):215–220.
[4] Goligher JC. Surgery of the Anus, Rectum and Colon. 5th ed. London: Baillière Tindall; 1984.
[5] Milligan ETC, Morgan CN. Surgical anatomy of the anal canal and the operative treatment of haemorrhoids. Lancet. 1937;230(5959):1119–1124.
[6] J Z Jin, S Bhat, K -T Lee, W Xia, A G Hill, Interventional treatments for prolapsing haemorrhoids: network meta-analysis, BJS Open, Volume 5, Issue 5, October 2021, zrab091, https://doi.org/10.1093/bjsopen/zrab091
[7] Lohsiriwat V. Strategies to reduce post-hemorrhoidectomy pain. World J Gastroenterol. 2022;28(17):1823–1833.
[8] Chivate SD, Ladukar L, Ayyar M, Mahajan V, Kavathe S. Transanal Suture Rectopexy for Haemorrhoids: Chivate's Painless Cure for Piles. Indian J Surg. 2012

Oct;74(5):412-7. doi: 10.1007/s12262-012-0461-4. Epub 2012 Mar 22. PMID: 24082598; PMCID: PMC3477406.

[9] Chivate SD, Killedar MM, Ladukar LD, Vardhani GS, Kavathe SK, Kanekar SR. Transanal Suture Mucopexy for Hemorrhoids. Dis Colon Rectum. 2022 May 1;65(5):742-749. doi: 10.1097/DCR.0000000000002191. PMID: 34958048; PMCID: PMC8985695.

[10] Singh SAM.Outcome of Chivates trans anal suture mucoanopexy procedure for haemorrhoids: primary findings in south Indian population. Int Surg J2023; 10: 1507-11.

[11] Usman, A. A., Dr Shiraz Basheer2, S., Basheer, S., Kuttichi, L., Gamalial, J., Ali, A. & Kareem M, N. (2025). Comparative Evaluation of Postoperative Pain: Chivate's Procedure Versus Conventional Hemorrhoidectomy – A Prospective Study in a Tertiary Care Setting. Journal of Contemporary Clinical Practice, 11(3), 1003-1008

[12] Madhuri, V., Kishore G, K. & Billakanti, R. K. (2025). Comparative study of post-operative complications of chivate's procedure versus classical haemorrhoidectomy. Journal of Contemporary Clinical Practice, 11(2), 203-208.