COMPARATIVE EVALUATION OF TRADITIONAL VERSUS MODIFIED CLOSED HEMORRHOIDECTOMY IN 346 PATIENTS WITH COMPLICATED HEMORRHOIDS: SHORT-TERM AND LONG-TERM RESULTS

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https://doi.org/10.5281/zenodo.19107515

Abstract

The surgical management of complicated hemorrhoids — encompassing posthemorrhagic anemia, stage IV disease with permanent mucosal prolapse, and grade III thrombosis — continues to pose challenges in terms of optimizing postoperative outcomes and minimizing morbidity. While traditional closed hemorrhoidectomy (Milligan–Morgan modification II) remains the most widely practiced technique, its association with retained vascular pedicle stumps and extensive mucosal excision contributes to a well-documented spectrum of early and late complications. The present study aimed to conduct a rigorous comparative analysis of clinical outcomes following traditional versus a novel modified hemorrhoidectomy technique in a large prospective cohort of patients with complicated hemorrhoids.

A total of 346 patients with complicated hemorrhoids were enrolled at the Proctology Department of Samarkand State Medical University Clinic from 2019 to 2024. Among these, 126 (36.4%) presented with chronic hemorrhoids complicated by bleeding and posthemorrhagic anemia, 113 (32.6%) had stage IV chronic hemorrhoids with permanent prolapse of internal nodes and rectal mucosa, and 107 (30.9%) had grade III thrombosed hemorrhoids. Patients were allocated to the control group (n = 170, traditional technique) or the study group (n = 176, modified technique). The modified technique involved suture ligation of each vascular pedicle followed by its submucosal immersion at a 90° angle, sequential excision of internal nodes at 3, 7, and 11 o'clock with complete primary wound closure, individual excision of external nodes with absorbable suture repair, and preservation of uninvolved mucosal bridges between wound lines.

In the control group, 107 (62.2%) patients were male with a mean age of 41.92 ± 0.653 years; the majority (94.4%) were of working age (21–60 years). Physical labor was the predominant occupational category. Most patients were admitted at late disease stages, having sought specialist consultation only upon development of serious complications. In the study group, 108 (62.1%) patients

were male with a mean age of 42.35 ± 0.662 years, and the groups were well-matched for all baseline clinical and demographic parameters.

Comparative analysis of early postoperative outcomes revealed statistically significant advantages of the modified technique across all measured parameters. The incidence of severe pain syndrome on the first postoperative day was reduced from 61.6% to 44.8% ($P < 0.001$). Postoperative wound hemorrhage was reduced from 4.1% to 1.7% ($P = 0.066$). Bleeding at the first dressing change fell from 34.1% to 9.6% ($P < 0.001$). Pain during first defecation on days 3–4 decreased from 31.7% to 11.3% ($P < 0.001$). Reflex urinary retention was reduced from 9.4% to 2.8% ($P = 0.026$). Defecation difficulty declined from 22.9% to 11.3% ($P < 0.001$). Acute paraproctitis occurred only in the control group (1.2% versus 0%). Local anal canal thermometry confirmed reduced postoperative inflammation in the modified technique group, with consistently lower temperature readings on days 3, 5, and 7 (37.2° ± 0.1°, 37.5° ± 0.2°, 37.1° ± 0.1°C versus 37.3° ± 0.2°, 37.7° ± 0.3°, 37.2° ± 0.1°C).

Hospital length of stay was significantly shorter in the modified technique group (7.74 ± 0.074 versus 9.34 ± 0.063 bed-days, $P < 0.05$). Long-term follow-up, conducted at 6 months to 2 years in 125 study and 134 control group patients, demonstrated that the advantages of the modified technique were sustained over time. The incidence of postdefecation bleeding was 2.4% in the study group versus 8.2% in the control group; anal canal stricture 1.6% versus 5.2%; anal fissure 1.6% versus 5.2%; minor pain at defecation 2.4% versus 8.9%; and anal sphincter insufficiency 0% versus 3.7%. The total early complication rate was reduced from 14.7% to 3.9%, and the long-term adverse outcome rate from 14.1% to 3.2%. These outcomes are directly attributable to the elimination of exposed vascular pedicle stumps from the anal canal, which removes the primary anatomical substrate for postoperative hemorrhage, inflammatory infiltration, scar formation, and subsequent stricture development.

The findings of this study provide robust evidence that the modified hemorrhoidectomy technique with submucosal vascular pedicle stump immersion significantly outperforms traditional closed hemorrhoidectomy in terms of early and late postoperative outcomes in patients with complicated hemorrhoids. The technique has been implemented in clinical practice on the basis of Conclusion No. 10/03 issued by the Scientific and Technical Council under the Ministry of Health of the Republic of Uzbekistan (October 25, 2024), and is recommended for broader adoption in specialized surgical and coloproctological departments.

Keywords: hemorrhoidectomy, complicated hemorrhoids, submucosal immersion, vascular pedicle stumps, postoperative complications, hemorrhage, anal canal stricture, sphincter insufficiency, posthemorrhagic anemia, thrombosed hemorrhoids, comparative study.