



MODIFIED HEMORRHOIDECTOMY WITH SUBMUCOSAL IMMERSION OF VASCULAR PEDICLE STUMPS IN COMPLICATED HEMORRHOIDS: CLINICAL OUTCOMES AND INDICATIONS

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Abstract

Complicated forms of hemorrhoids, including posthemorrhagic anemia, stage IV chronic hemorrhoids with permanent prolapse of internal nodes and rectal mucosa, and grade III thrombosed hemorrhoids, represent some of the most demanding clinical entities in coloproctological surgery. Traditional closed hemorrhoidectomy (Milligan–Morgan modification II), although widely employed, is associated with a significant burden of early and late postoperative complications attributable largely to the retention of vascular pedicle stumps within the anal canal and the extensive resection of anal canal mucosa. This prospective study was conducted at the Proctology Department of Samarkand State Medical University Clinic between 2019 and 2024, enrolling 346 patients with complicated hemorrhoids. The study group (n = 176) underwent a novel modified hemorrhoidectomy technique, while the control group (n = 170) received traditional closed hemorrhoidectomy. The two groups were comparable in age (mean 42.35 ± 0.662 versus 41.92 ± 0.653 years), sex distribution (62.1% versus 62.2% male), and clinical presentation.

The key distinguishing feature of the modified technique was the submucosal immersion of vascular pedicle stumps of the excised internal hemorrhoidal nodes at a 90-degree angle following suture ligation with long-acting absorbable material. This maneuver effectively eliminates exposed pedicle stumps within the anal canal, thereby removing a primary source of postoperative hemorrhage and inflammatory stimulus. Internal hemorrhoidal nodes at the 3, 7, and 11 o'clock positions were excised sequentially; wound closure was performed with individual absorbable sutures capturing the wound base in a radial orientation, with preservation of uninvolved mucosal bridges between suture lines. External nodes were excised individually with primary wound closure. The procedure was performed under sacral anesthesia in all cases.

Postoperative outcomes demonstrated marked superiority of the modified technique across all key parameters. Severe pain syndrome on the first postoperative day was recorded in 44.8% of study group patients versus 61.6% in the control group ($P < 0.001$). Postoperative hemorrhage from anal canal





wounds occurred in 1.7% and 4.1% of patients, respectively. Minor bleeding at the first dressing change was observed in 9.6% versus 34.1% ($P < 0.001$). Defecation difficulty in the early postoperative period was recorded in 11.3% versus 22.9% ($P < 0.001$). Reflex urinary retention occurred in 2.8% versus 9.4% ($P = 0.026$). Acute paraproctitis was observed in 2 (1.2%) control group patients and in none of the study group patients. Local anal canal thermometry on postoperative days 3, 5, and 7 yielded mean values of $37.2^{\circ} \pm 0.1^{\circ}$, $37.5^{\circ} \pm 0.2^{\circ}$, and $37.1^{\circ} \pm 0.1^{\circ}\text{C}$ in the study group, compared with $37.3^{\circ} \pm 0.2^{\circ}$, $37.7^{\circ} \pm 0.3^{\circ}$, and $37.2^{\circ} \pm 0.1^{\circ}\text{C}$ in the control group, confirming reduced local wound inflammation in the modified technique cohort.

Mean hospital length of stay was 7.74 ± 0.074 bed-days in the study group versus 9.34 ± 0.063 bed-days in the control group ($P < 0.05$). Long-term follow-up data, available for 125 (71.1%) study group and 134 (78.8%) control group patients at 6 months to 2 years, confirmed the durability of the improved outcomes. Minor postdefecation bleeding was recorded in 2.4% versus 8.2% of patients. Anal canal stricture developed in 1.6% versus 5.2%. Anal fissure occurred in 1.6% versus 5.2%. Anal sphincter insufficiency was observed in 0% versus 3.7%. Minor pain at defecation was reported by 2.4% versus 8.9% of patients, respectively. The overall early postoperative complication rate was reduced from 14.7% to 3.9%, and the long-term adverse outcome rate from 14.1% to 3.2%.

The modified hemorrhoidectomy technique with submucosal immersion of vascular pedicle stumps is indicated in: (1) complicated chronic hemorrhoids with posthemorrhagic anemia once hemoglobin reaches 90 g/l; (2) stage IV chronic hemorrhoids with permanent prolapse of internal nodes and rectal mucosa, performed electively; and (3) large-volume thrombosed hemorrhoids, performed within 48–72 hours of onset. The technique is technically straightforward, reproducible, and applicable in specialized surgical and coloproctological departments. The results support its recommendation as the method of choice for complicated hemorrhoids in clinical practice.

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

