

Identification of Determinants Contributing to Postoperative Recurrence in Pilonidal Sinus Surgery: A Prospective Observational Analysis

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Purpose of work: Pilonidal sinus pathology is prevalent among young adult populations and demonstrates a high rate of recurrence subsequent to surgical management. Despite the availability of various operative techniques, recurrence continues to contribute to increased healthcare utilization and patient morbidity. The present investigation aims to delineate both intrinsic (patient-specific) and extrinsic (procedure-related) variables statistically associated with recurrence following surgical intervention for pilonidal sinus disease.

Materials and Methods: A forward-looking observational study was implemented at republican hospital from January 2024 to March 2025. The cohort consisted of 120 subjects undergoing operative treatment for pilonidal disease. Ethical approval and informed consent were obtained. Minimum follow-up duration post-procedure was established at 12 months. Inclusion criteria: individuals aged 16–50 years undergoing surgical excision (open healing, midline closure, or flap-based techniques including Limberg or Karydakis). Exclusion criteria: immunocompromised status, lost to follow-up, concurrent perineal infections, or malignancy. Data acquisition included demographics (age, sex), body mass index (BMI), tobacco use, pilosity in the natal cleft, hygiene practices, symptom chronicity, and surgical history. Operative parameters (technique, closure type, intraoperative time) and postoperative endpoints (infection, healing latency, recurrence incidence) were documented.

Results: Among the 50 enrolled patients, 41 completed the follow-up protocol. Recurrence was observed in 18.3% of cases (n=19). Statistically significant correlations with recurrence included BMI >30, smoking status, high pilosity in the intergluteal region, and suboptimal hygiene practices. Prior surgical intervention emerged as an independent recurrence predictor. Operative technique demonstrated a direct influence on recurrence rates: midline closure procedures exhibited a 11% recurrence rate, whereas off-midline flap-based methods resulted in an 4% recurrence incidence. No statistically significant associations were identified

between recurrence and either age or biological sex.

Conclusion: The findings affirm that recurrence following pilonidal sinus excision is multifactorial, involving modifiable patient-related risk elements (elevated BMI, tobacco exposure, regional pilosity, hygiene) and procedure-specific variables, primarily the surgical technique. Off-midline flap procedures confer a lower recurrence probability relative to conventional midline closures. These data support the clinical application of a risk-adapted, evidence-guided treatment strategy. Optimization of modifiable factors preoperatively—such as weight control, smoking cessation, and hair management—may contribute to improved surgical outcomes and reduced recurrence risk.