

ORIGINAL RESEARCH

Comparative study on outcome of surgical management of varicose veins with and without great saphenous vein stripping

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ABSTRACT

Background: Varicose veins are a common vascular condition, often necessitating surgical intervention. One of the debated aspects of surgical management is whether to perform great saphenous vein (GSV) stripping in addition to other procedures. This study aims to compare the outcomes of surgical management of varicose veins with and without GSV stripping. **Materials and Methods:** A retrospective analysis was conducted on patients who underwent surgical management for varicose veins between January 2018 and December 2020 in Madhubani Medical College, Madhubani, Bihar, India. Patients were divided into two groups: those who underwent surgical intervention with GSV stripping (Group A) and those without GSV stripping (Group B). Data on patient demographics, perioperative complications, length of hospital stay, recurrence rates, and patient-reported outcomes were collected and analyzed. **Results:** A total of 200 patients were included in the study, with 100 patients in each group. In Group A, the mean length of hospital stay was 2.5 days (SD \pm 0.8), compared to 2.8 days (SD \pm 1.0) in Group B. Perioperative complications were observed in 8% of patients in Group A and 12% in Group B. Recurrence rates at one-year follow-up were 5% in Group A and 8% in Group B. Patient-reported outcomes indicated higher satisfaction levels in Group A compared to Group B. **Conclusion:** Surgical management of varicose veins with GSV stripping appears to be associated with shorter hospital stays, lower perioperative complication rates, and potentially lower recurrence rates compared to procedures without GSV stripping. Additionally, patients who underwent GSV stripping reported higher satisfaction levels. These findings suggest that GSV stripping may offer improved outcomes in the surgical management of varicose veins.

Keywords: Varicose veins, great saphenous vein, surgical management, outcomes, stripping, recurrence, patient satisfaction.

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INTRODUCTION

Varicose veins represent a prevalent vascular disorder characterized by dilated, tortuous veins, often causing discomfort and aesthetic concerns for affected individuals. Surgical management plays a crucial role in addressing symptomatic varicose veins, aiming to alleviate symptoms and prevent complications such as venous ulcers and thrombophlebitis (1). One debated aspect of surgical intervention is the inclusion of great saphenous vein (GSV) stripping, a procedure aimed at removing the incompetent GSV segment, which is often implicated in the pathogenesis of varicose veins (2).

Several studies have investigated the efficacy and outcomes of surgical interventions for varicose veins with and without GSV stripping. Proponents of GSV

stripping argue that its inclusion leads to improved long-term outcomes, reduced recurrence rates, and enhanced patient satisfaction (3). However, others advocate for alternative techniques, such as endovenous ablation or phlebectomy, which may offer comparable outcomes without the need for GSV stripping (4).

Understanding the comparative effectiveness of surgical approaches with and without GSV stripping is essential for informing clinical decision-making and optimizing patient outcomes. This study aims to contribute to this body of knowledge by conducting a comparative analysis of surgical management outcomes in patients with varicose veins, with and without GSV stripping.

MATERIALS AND METHODS

Study Design: This retrospective comparative study analyzed data from patients who underwent surgical management for varicose veins at a tertiary care center between January 2018 and December 2020 in Madhubani Medical College, Madhubani, Bihar, India.

Inclusion Criteria: Patients aged 18 years or older diagnosed with symptomatic varicose veins who underwent surgical intervention were included in the study.

Exclusion Criteria: Patients with a history of previous venous surgery, deep vein thrombosis, or concurrent lower limb arterial disease were excluded.

Data Collection: Demographic data (age, sex), clinical characteristics, surgical details, perioperative complications, and postoperative outcomes were collected from electronic medical records.

Surgical Procedures: Patients were divided into two groups based on the surgical technique employed: Group A underwent surgical intervention with GSV stripping, while Group B underwent procedures without GSV stripping, including endovenous ablation or phlebectomy.

Outcome Measures: Primary outcome measures included length of hospital stay, perioperative complications, and recurrence rates at one-year follow-up. Secondary outcomes included patient-reported outcomes such as satisfaction levels assessed through standardized questionnaires.

Statistical Analysis: Data were analyzed using appropriate statistical methods, including chi-square tests for categorical variables and t-tests for continuous variables. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 200 patients with varicose veins were included in the study, with 100 patients in each group (Group A: GSV stripping; Group B: without GSV stripping). Table 1 summarizes the demographic and clinical characteristics of the study population.

Table 1: Demographic and Clinical Characteristics

Characteristic	Group A (GSV Stripping)	Group B (No GSV Stripping)
Age (years), mean (SD)	54.7 (8.2)	52.3 (7.5)
Sex (Male/Female)	40/60	45/55
Body Mass Index	27.5 (4.1)	26.8 (3.8)
Clinical Severity (CEAP Classification)	C2: 40%, C3: 30%, C4: 20%, C5: 8%, C6: 2%	C2: 45%, C3: 25%, C4: 20%, C5: 6%, C6: 4%

Perioperative outcomes and postoperative complications are summarized in Table 2.

Table 2: Perioperative Outcomes

Outcome	Group A (GSV Stripping)	Group B (No GSV Stripping)
Length of Hospital Stay (days), mean (SD)	2.5 (0.8)	2.8 (1.0)
Perioperative Complications (%)	8%	12%
Early Postoperative Pain (Visual Analog Scale, 0-10), mean (SD)	2.1 (1.2)	2.5 (1.5)

Recurrence rates at one-year follow-up and patient-reported outcomes are presented in Table 3.

Table 3: Recurrence Rates and Patient-Reported Outcomes

Outcome	Group A (GSV Stripping)	Group B (No GSV Stripping)
Recurrence Rate at 1 Year (%)	5%	8%
Patient Satisfaction (Likert Scale, 1-5), mean (SD)	4.3 (0.5)	3.8 (0.6)

The results indicate that Group A (GSV stripping) had a shorter mean length of hospital stay, lower perioperative complication rates, and reduced recurrence rates compared to Group B (no GSV stripping). Additionally, patients in Group A reported higher satisfaction levels compared to those in Group B.

DISCUSSION

The surgical management of varicose veins remains a topic of debate, particularly regarding the necessity of great saphenous vein (GSV) stripping as part of the intervention. This study compared outcomes between patients who underwent surgical management with and without GSV stripping, aiming to contribute to the existing body of knowledge on optimal treatment strategies for varicose veins.

The findings of this study suggest several important considerations. Firstly, the inclusion of GSV stripping was associated with a shorter mean length of hospital stay compared to procedures without GSV stripping. This aligns with previous studies that have demonstrated the effectiveness of GSV stripping in reducing

postoperative hospitalization duration (5). The shorter hospital stay observed in Group A may lead to potential cost savings and improved resource utilization within healthcare systems.

Secondly, the incidence of perioperative complications was lower in patients who underwent GSV stripping compared to those who did not. While the exact mechanisms underlying this difference warrant further investigation, it is plausible that GSV stripping may lead to more complete removal of the

diseased vein segment, thereby reducing the risk of complications such as hematoma formation or wound infection (6).

Furthermore, the study identified a lower recurrence rate at one-year follow-up among patients who underwent GSV stripping compared to those who did not. This finding is consistent with previous research highlighting the role of GSV stripping in achieving durable outcomes and preventing disease recurrence (7). The superior long-term efficacy of GSV stripping may be attributed to its ability to address the underlying pathophysiology of varicose veins by eliminating the incompetent GSV segment.

Patient-reported outcomes also favored the inclusion of GSV stripping, with higher satisfaction levels reported among patients in Group A. This is consistent with studies demonstrating improved symptom relief and quality of life following GSV stripping compared to alternative treatment modalities (8). Patient satisfaction is a critical aspect of healthcare delivery, and interventions that prioritize patient-reported outcomes are essential for optimizing treatment outcomes and patient experience.

It is essential to acknowledge the limitations of this study, including its retrospective design, potential selection bias, and reliance on electronic medical records for data extraction. Future prospective studies with larger sample sizes and longer follow-up durations are warranted to further validate these findings and elucidate the underlying mechanisms driving differences in outcomes between surgical techniques.

In conclusion, this study provides evidence supporting the inclusion of GSV stripping in the surgical management of varicose veins. The findings suggest that GSV stripping is associated with shorter hospital stays, lower perioperative complication rates, reduced recurrence rates, and higher patient satisfaction levels compared to procedures without GSV stripping. These results have important implications for clinical practice and highlight the importance of individualized treatment approaches tailored to patient-specific factors and preferences.

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