Do High BMI and Operative Time Really Affect Portomesenteric Venous Thrombosis After Laparoscopic Sleeve Gastrectomy? : Data from 13 Cases out of 3,050 Cases by a Single Surgeon in One Center



INTRODUCTION

Portomesenteric venous thrombosis (PMVT) is a rare but serious complication after laparoscopic sleeve gastrectomy (LSG). Identifying risk factors is crucial for prevention and early detection. The impact of high body mass index (BMI) and operative time on PMVT development post-LSG remains unclear.

OBJECTIVE

To evaluate whether high BMI and operative time significantly influence PMVT incidence after LSG.

METHODOLOGY

Retrospective analysis of 3,050 patients undergoing LSG by a single surgeon at Chularat 3 International Hospital from December 2020 to August 2024. Thirteen patients (0.43%) developed PMVT. Data included demographics, BMI, operative time, and outcomes. BMI was analyzed both continuously and categorically (<40 kg/m^2 vs. >40 kg/m^2). Operative time was categorized as less than 45 minutes and 45 minutes or longer. Univariate and multivariate analyses assessed associations between PMVT, BMI, and operative time.

RESULTS

The mean time to PMVT diagnosis was 14.69 days postoperatively. The overall mean BMI was 39.23 kg/m^2, while PMVT cases had a mean BMI of 37.06 kg/m^2. As a continuous variable, BMI showed a significant association with PMVT in univariate analysis ($p = 0.042$) but not in multivariate analysis ($p = 0.968$).
Categorically, patients with BMI < 40 kg/m^2 had a crude relative risk (RR) of 2.11 ($p = 0.257$) and an adjusted RR of 2.95 ($p = 0.397$), indicating no significant association.
The mean operative time was 45.2 minutes overall and 37.62 minutes in PMVT cases. Patients with operative times > 45 minutes had a crude RR of 0.35 ($p = 0.106$) and an adjusted RR of 1.24 ($p = 0.823$), suggesting no significant association with PMVT risk.

CONCLUSION

PMVT occurred in 0.43% of patients following LSG. Neither high BMI nor longer operative time significantly affected PMVT development. Interestingly, PMVT was observed more frequently in patients with lower BMI and shorter operative times, though these findings were not statistically significant. These results suggest that PMVT may occur independently of BMI and operative duration. Clinicians should remain vigilant for PMVT in postoperative patients regardless of these factors. Further research is needed to identify other potential risk factors contributing to PMVT after LSG.

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