



Intraoperative Liver Biopsy During Sleeve Gastrectomy: A Safety Evaluation in Patients with Underlying Liver

Disease using MBSAQIP 2023 Database Analysis

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Background

Non-alcoholic fatty liver disease (NAFLD) affects up to 75% of patients with obesity. Despite its clinical relevance, NAFLD is often underdiagnosed, as non-invasive methods may lack sensitivity for detecting early-stage disease. Intraoperative liver biopsy (ILB) provides an opportunity for accurate diagnosis and staging, however concerns about its safety have limited its use during bariatric surgery.

Objective

To compare 30-day outcomes in patients who underwent sleeve gastrectomy (SG) with versus without concurrent ILB.

Methods

Patients who underwent SG and ILB were identified using CPT codes. We performed a Propensity Score Matching (PSM) analysis with 25 preoperative variables. We compared 30-day postoperative outcomes for patients who underwent SG versus SG with concurrent ILB (Analysis 1). Then, a subgroup analysis was conducted among patients with pre-existing liver disease comparing those who underwent SG versus SG with concurrent ILB (Analysis 2).

MBSAQIP 2023
SG (n = 126,165)

SG
(n = 123,893)

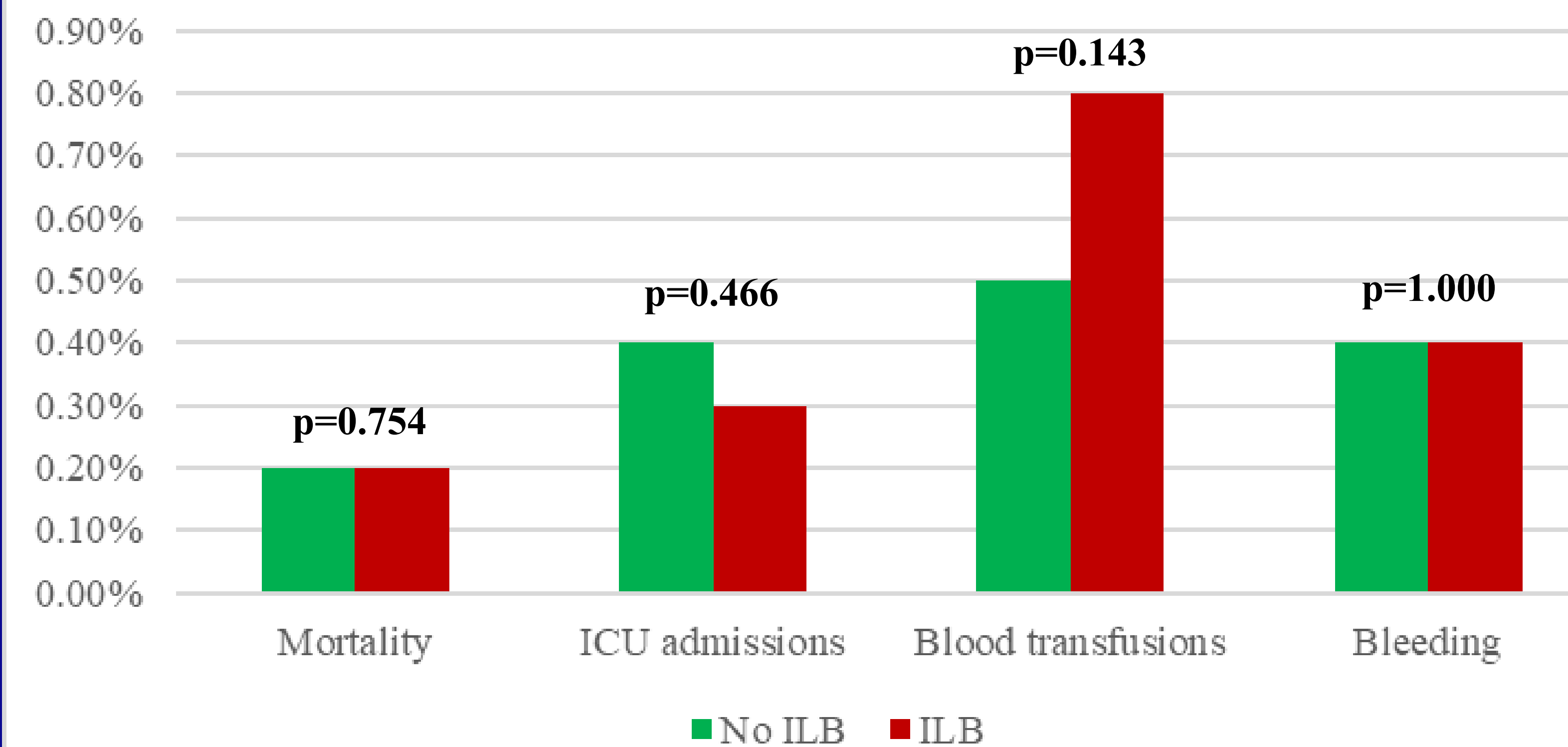
SG + ILB
(n = 2,272)

1:1 PSM

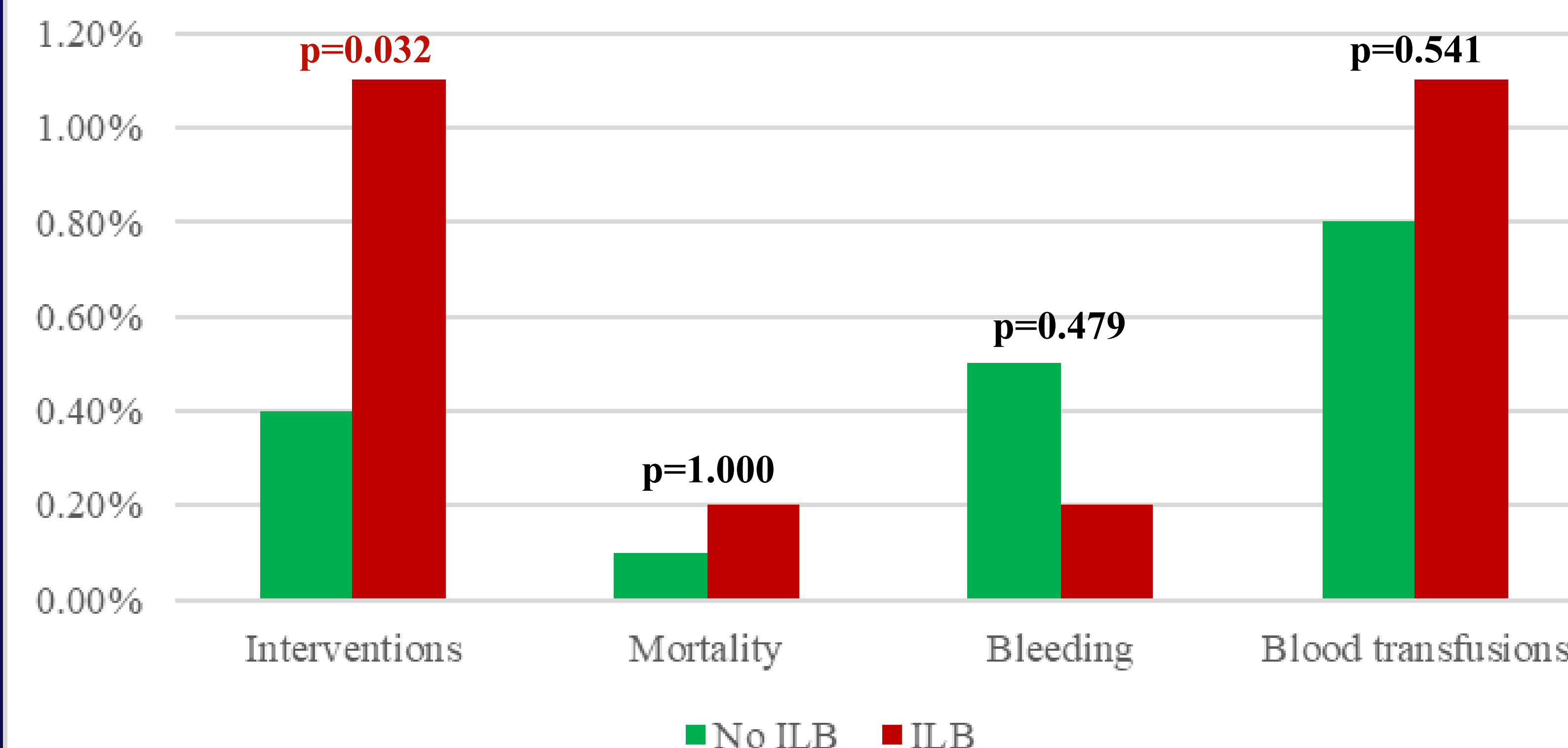
SG (n = 2,272) vs.
SG + ILB (n = 2,272)

Analysis 1

30-Day outcomes in patients with versus without ILB who underwent SG



30-Day outcomes in patients with Liver Disease who underwent SG with and without ILB



Subgroup Analysis

SG in patients
w/Liver disease
(n = 14,153)

SG
(n = 13,603)

SG + ILB
(n = 550)

1:4 PSM

SG (n = 2,192) vs.
SG + ILB (n = 549)

Analysis 2

Results

A total of 126,165 SG cases were identified, of which 2,272 (1.8%) included concurrent ILB. Outcomes in Analysis 1 (n=2,272) showed no significant differences in 30-day mortality (0.2% vs. 0.2%, p=0.754), unplanned ICU admissions (0.3% vs. 0.4%, p=0.466), blood transfusions (0.8% vs. 0.5%, p=0.143) or postoperative bleeding (0.4% vs. 0.4%, p=1.000) between groups. Analysis 2 (n=549, n=2,192) showed that patients with liver disease who had concurrent ILB had higher rates of interventions (1.1% vs. 0.4%, p=0.032), but with no differences in blood transfusions (1.1% vs. 0.8%, p=0.541) or postoperative bleeding (0.2% vs. 0.5%, p=0.479) compared to SG alone.

Conclusion

Concurrent ILB during SG is safe and not associated with increased perioperative mortality or major morbidity. Although patients with pre-existing liver disease who undergo SG with concurrent ILB may experience a modest increase in interventions rates, we observed no differences in blood transfusion or postoperative bleeding. Therefore, ILB still remains a valuable diagnostic tool that can be safely integrated into SG, even in patients with liver disease.