

Do ultrasound liver measurements predict operative time in bariatric surgery?

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Background: Screening abdominal ultrasound rarely changes bariatric surgical planning. We assessed whether ultrasound liver measurements predict operative time and early adverse events.

Methods: Retrospective cohort (2005–2022) of adults living with obesity undergoing primary Roux-en-Y gastric bypass (RYGB) or sleeve gastrectomy (SG) with screening ultrasound ≤ 6 months preoperatively and without biliary symptoms. Exposures were left-lobe lateral distance and anteroposterior (AP) diameter (cm). Primary outcome was incision-to-closure operative time. Analyses used Spearman correlations and multivariable linear regression of log(operative time) adjusted for age, sex, body mass index (BMI) and procedure. BMI-adjusted logistic regression evaluated 30-day bleeding/leak (combined) and iatrogenic trauma; ultrasound-driven management change was recorded.

Results: 741 patients (RYGB 534; SG 207); operative time median 110 [90–145] min ($n=739$). Left-lobe lateral distance ($n=353$) was not associated with operative time ($\rho=0.012$, $p=0.826$; $\beta=0.00113/\text{cm}$, $p=0.6646$). Left-lobe AP diameter ($n=205$) was not associated with operative time ($\rho=0.050$, $p=0.479$; $\beta=0.00288/\text{cm}$, $p=0.3075$). Bleeding/leak occurred in 38/741 (5.1%) and iatrogenic trauma in 25/741 (3.4%), with no associations in BMI-adjusted logistic models for left-lobe measures. Secondary analyses suggested correlations between operative time and right-lobe measures, but availability was limited ($n\leq 48$). Ultrasound altered management in 2/739 (0.3%).

Conclusions: Left-lobe ultrasound measurements did not predict operative time or early adverse events. Right-lobe signals in secondary analyses warrant confirmation.

Financial support: None.