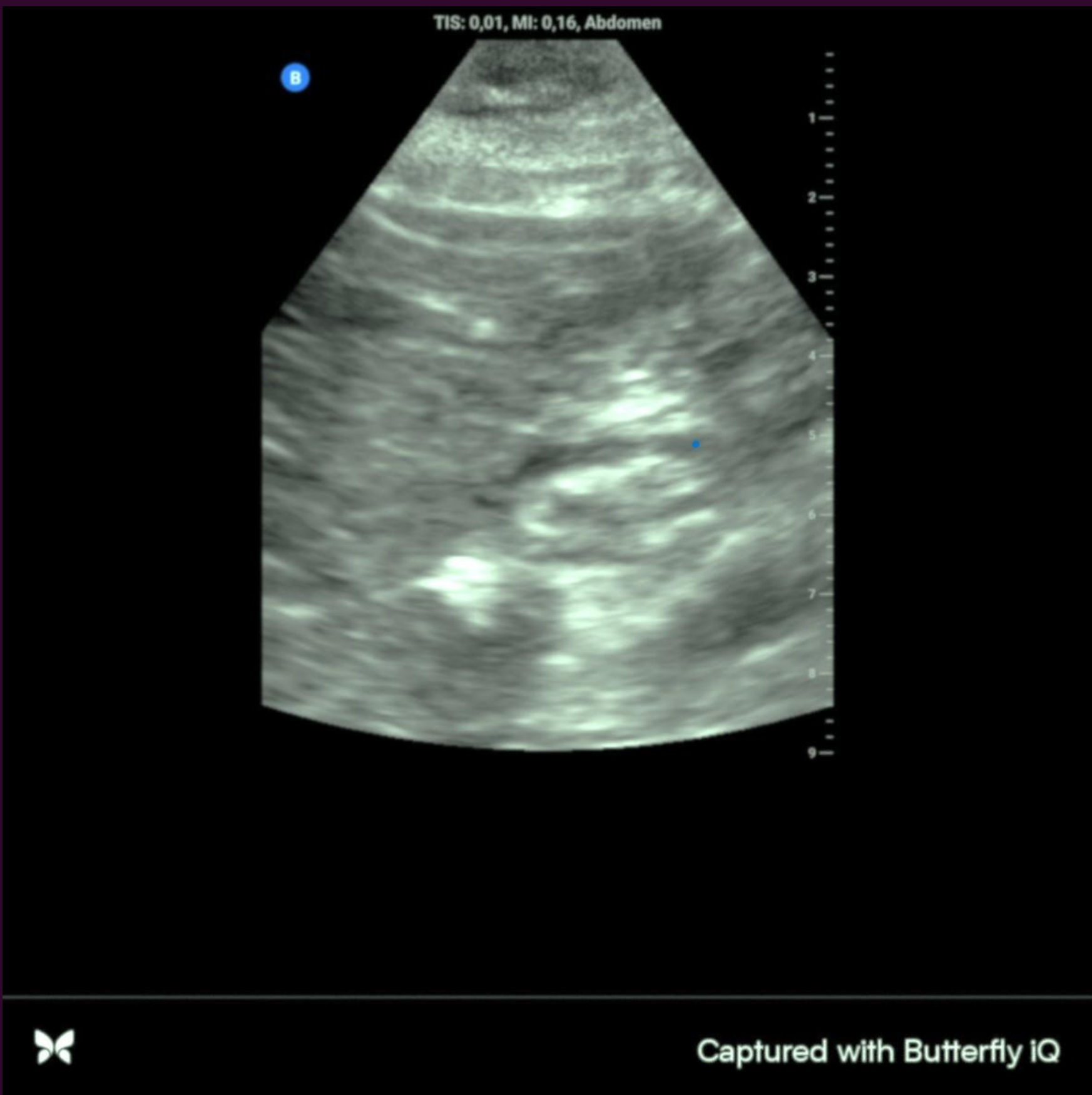


Preoperative Gastric Ultrasound Assessment in Post-Traumatic Fracture Surgery

Berna Caliskan

Haseki Training and Research Hospital
Istanbul, Türkiye

INTRODUCTION: Pulmonary aspiration of gastric contents remains a potentially preventable perioperative complication associated with significant morbidity and mortality. Although preoperative fasting guidelines are widely applied, gastric emptying may be altered in patients undergoing fracture surgery due to trauma-related inflammatory and stress responses.



Method

Adult patients (≥18 years) with ASA physical status I–III scheduled for orthopedic surgery within three days after traumatic fracture were included.

Patients with conditions known to affect gastric emptying were excluded.

Outcomes were measured by preoperative gastric ultrasound in the operating room.

Gastric content was evaluated :

Qualitatively by using the Perlas grading system (grades 0–2).

Quantitative assessment was based on estimated gastric volume calculated from antral cross-sectional area using the age adjusted formula, with volumes >1.5 mL/kg classified as high aspiration risk.

Results:

Table 1. Baseline characteristics and perioperative variables

Variable	Overall (n = 35)
Age, years, mean ± SD	54.7 ± 19.2
Sex, n (%)	
Female	18 (50.0)
Male	17 (47.2)
BMI, kg/m², mean ± SD	24.4 ± 4.8
ASA physical status, n (%)	
I	20 (55.6)
II	14 (38.9)
III	1 (2.8)
Time from fracture to surgery, days, median (IQR)	3.0 (2.0–3.0)
Fasting time, hours, median (IQR)	10.0 (8.0–13.5)

Table 2. Preoperative gastric ultrasound findings and clinical outcomes

Outcome	Overall (n = 35)
Primary outcomes	
Qualitative gastric content grade (Perlas), n (%)	
Grade 0	19 (52.8)
Grade 1	5 (13.9)
Grade 2	11 (30.6)
Quantitative risk grade, n (%)	
Grade 0 (low risk, < 0,8 ml/kg)	1 (6.25)
Grade 1 (moderate risk, 1,5- 0,8 ml/kg)	5 (31.25)
Grade 2 (high risk,>1.5 mL/kg)	10 (62.5)
Secondary outcomes	
Postoperative nausea or vomiting (0–24 h), n (%)	10 (27.8)
Aspiration pneumonia (0–48 h), n (%)	0 (0)

Discussion: These findings suggest that absolute volume–based grading alone may overestimate aspiration risk in post-traumatic fracture patients. The absence of aspiration pneumonia, even among patients identified as having increased quantitative risk, highlights the role of gastric ultrasound as a perioperative risk-stratification tool rather than a predictor of clinical events. If the gastric ultrasound assessment is carried out within the first 24 hours of the injury, as intended, and the fasting period does not exceed 8 hours, these results may be significantly different.