

An Emerging Concern: Weight Loss Medications and Vasovagal reaction during Peripheral Nerve Block

Aminat Haruna, MD, MPH¹; Austin Puchany DO, Mario Montoya MD¹

¹Department of Anesthesiology and Perioperative Medicine,
University of Pittsburgh School of Medicine, Pittsburgh, PA

INTRODUCTION

- The rising use of sympathomimetic weight loss medication introduces new perioperative considerations
- These agents can alter autonomic tone, increase vagal sensitivity and delay gastric emptying¹
- Physiological changes can impact hemodynamic stability and aspiration risk during anaesthesia.
- Case highlights potential peri block safety concern in patients on phentermine or similar agents

Case Summary

- 51-year-old male with morbid obesity, presents for ventral hernia repair.
- Bilateral paravertebral blocks for post operative pain management
- After needle insertion patient had Vasovagal event
- Symptoms: bradycardia, hypotension, syncope, nausea and vomiting
- Response: Ephedrine, glycopyrrolate, famotidine, ondansetron
- Imaging: EKG showed NSR, no ST changes
- The regional procedure was aborted.
- Induced uneventfully with RSI and video laryngoscopy
- Surgery proceeded uneventfully, without need for vasopressors
- Successful extubation at end of case

MAIN DIAGNOSES / INTERVENTIONS

- Rapid growth in Anti-obesity medications has been observed in recent years
- **Phentermine:** A sympathomimetic amine historically used for short-term weight loss; can increase catecholaminergic activity and may affect autonomic tone¹.
- Emesis secondary to vagal event or Delayed gastric emptying, or combination of both?
- Point-of care gastric ultrasound can noninvasively assess gastric contents to stratify gastric content and volume to stratify aspiration risk preoperatively. Recent reviews report sensitivity (~53%-100%) and specificity (~48-99%), depending on operator experience and protocols.

FIGURES / IMAGES

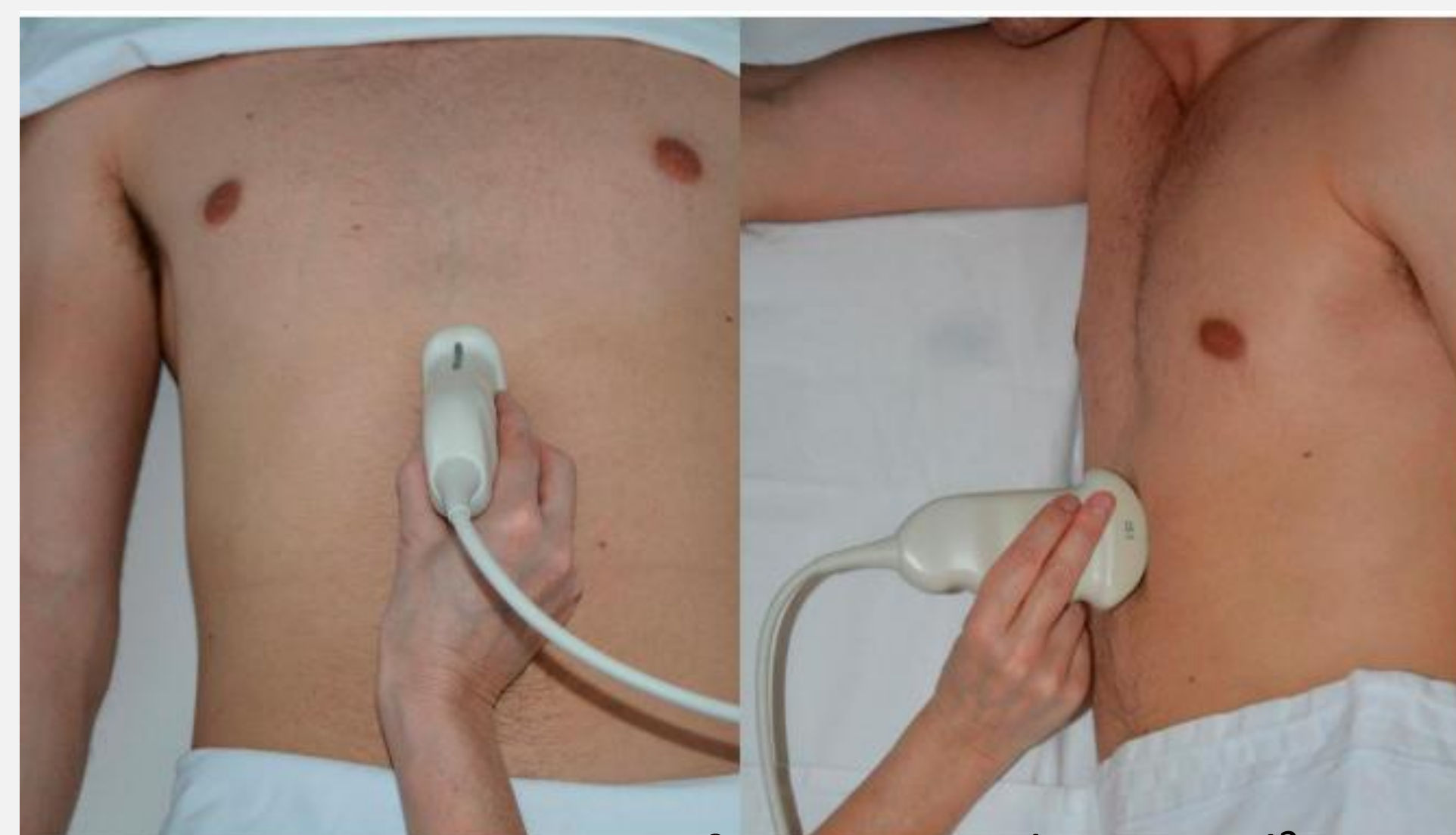


Figure 1: Positioning for Gastric Ultrasound²

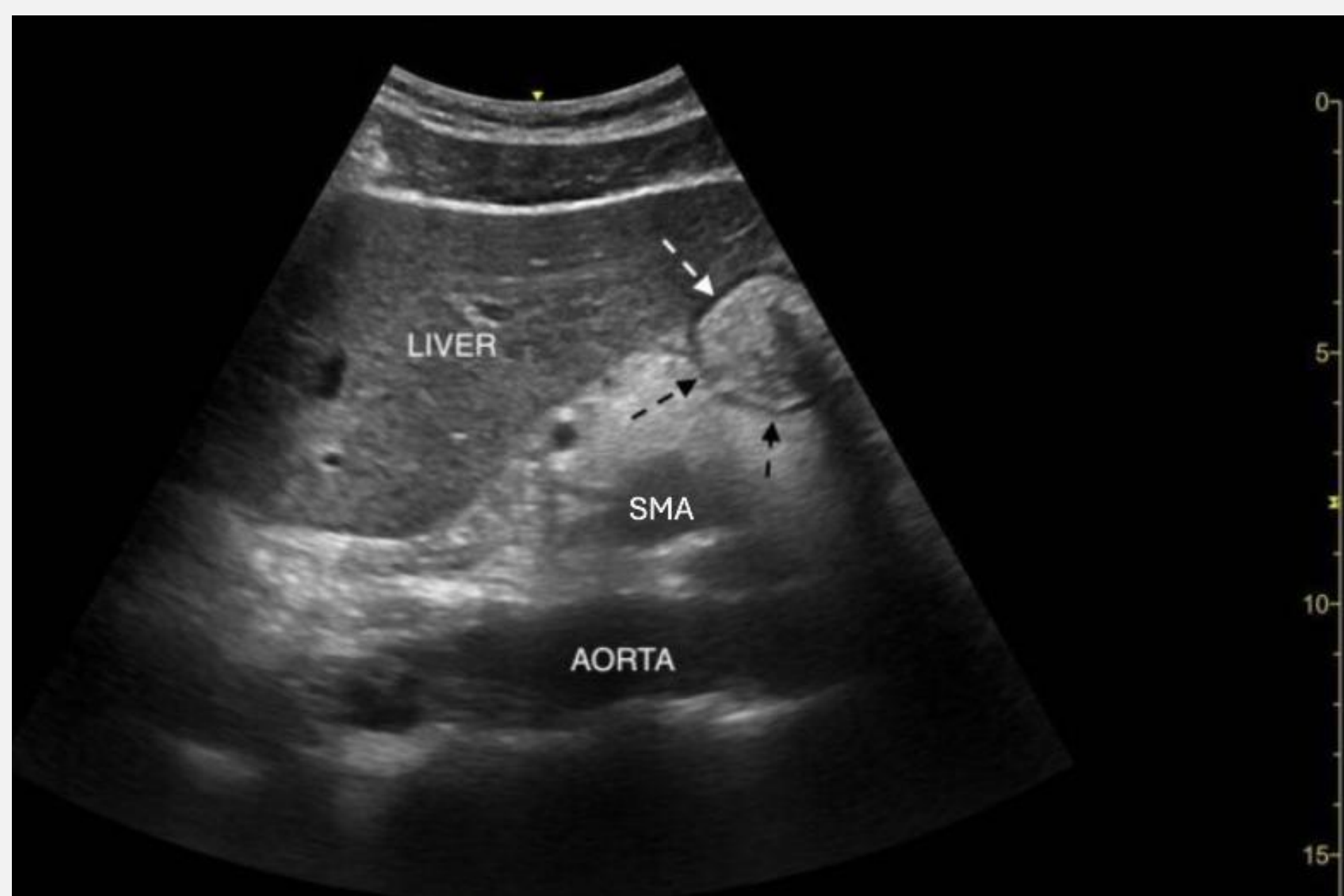


Figure 2: Gastric Ultrasound Anatomy³

Procedure³:

- Position Patient supine
- Place probe at epigastrium (under Xiphoid)
- Dot of probe aimed cephalad
- Liver on left of screen, Aorta/IVC at bottom
- Scan to observe stomach contents
- Place pt in RLD position
- This pushes stomach contents to antrum
- - **Empty stomach:** "Bulls-eye" appearance w/ small collapsed antrum
- - **Clear Liquids:** hypoechoic and homogenous
- - **Thick Liquids:** hyperechoic and homogenous
- - **Solids:** heterogenous, "frosted glass" appearance, may have trouble seeing structures below.
- For clear liquids calculate CSA
- **Free-tracing** function -trace the entire circumference of the antrum,
- **Gastric Volume** = $27 + (14.6 * CSA) - (1.28 * \text{age})$

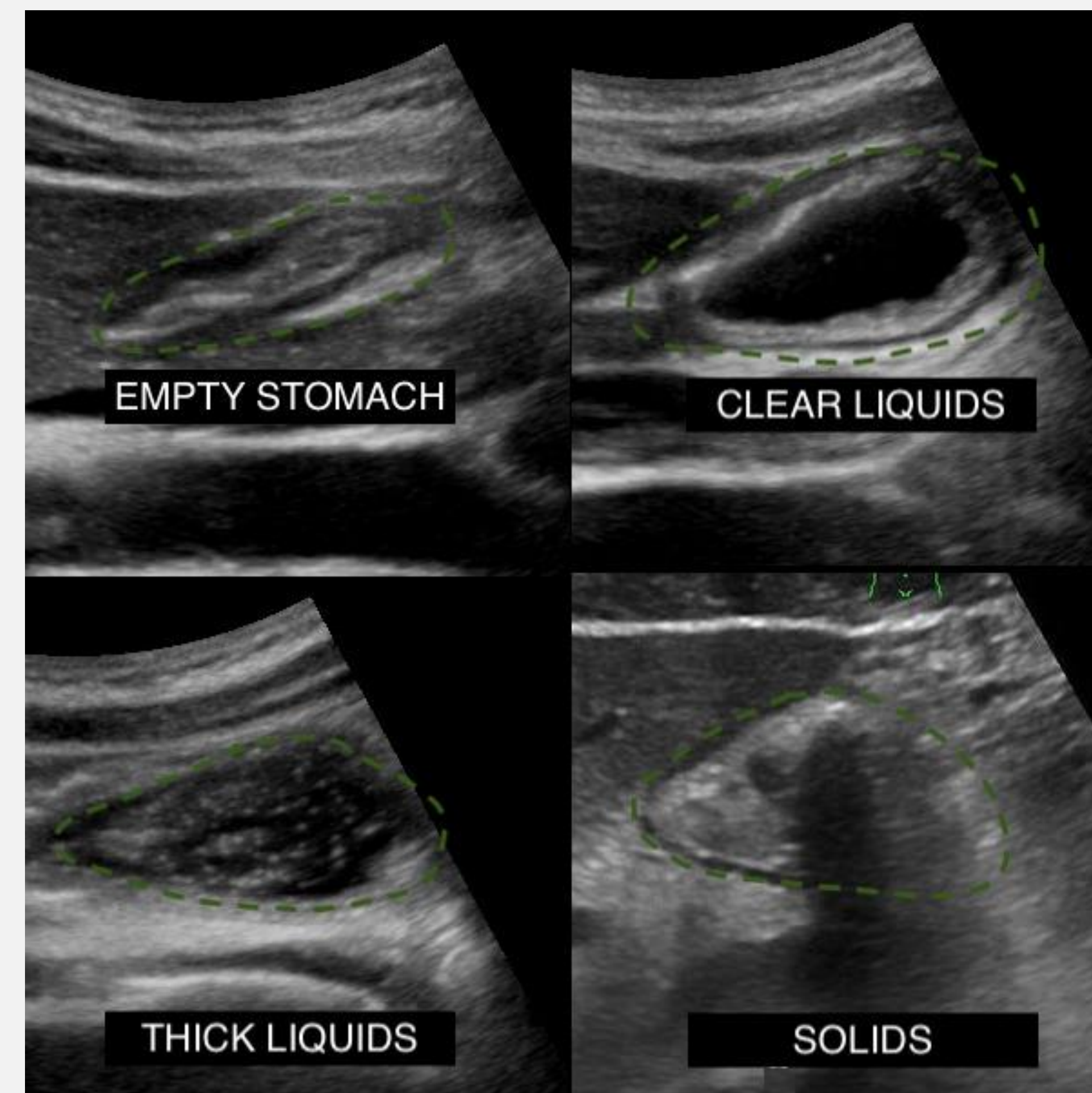


Figure 3: Gastric Ultrasound with assessment of different gastric contents³

OUTCOME / SUMMARY

Discussion

- Obesity, DM, abdominal pathology, pain and prior abdominal surgeries can increase risk
- Delayed gastric emptying augments the risk of emesis and aspiration, even in non-general anesthesia settings
- Sympathomimetic weight loss agents may potentiate autonomic dysregulation increasing susceptibility to vasovagal episode during block placement⁴
- GLP-1 agonists known for delayed gastric emptying and aspiration risk
- Compounded risk with these agents plus underlying pathology

Anesthetic Considerations

- Review of medication use and appropriate discontinuation
- Evaluation of gastric mobility and aspiration risk
- Use of gastric ultrasound to assess stomach contents
- Contents > 1.5ml/kg puts pt at increased risk
- If Elective, consider delay/cancelation
- If Emergent -> full aspiration precautions: minimize/avoid sedation, RSI, decompress stomach with gastric tube
- Emergency medications & equipment readily available
- Be prepared for delayed extubation

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4. Stephens LC, Katz SG. Phentermine and Anaesthesia. *Anaesthesia and Intensive Care*. 2005;33(4):525-527. doi:10.1177/0310057X0503300418