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Preanesthetic gastric assessment with sonography for a patient with a full stomach

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To the Editor:

Patients with a full stomach are at risk for regurgitation and subsequent aspiration pneumonia. Although patients scheduled for surgery are supposed to undergo preoperative fasting, gastric contents are not evaluated in most cases. We report a case in which rapid sequence induction was performed because of detection of gastric contents by preoperative gastric sonography.

Written consent from the patient was obtained for this report. A 19-year-old woman of 150 cm in height and 38.1 kg in weight was scheduled for open adhesiotomy. She had nothing by mouth for 12 days before surgery, and nasogastric tube has been placed. She did not complain of any abdominal symptoms before anesthesia. Before anesthetic induction, no gastric contents were suctioned through the nasogastric tube. Gastric sonography was performed to evaluate the presence of gastric contents. Sonography revealed the presence of gastric contents (Fig. 1), indicating the need for rapid sequence induction. After preoxygenation, cricoid pressure was applied and rapid sequence induction was performed with 100 µg of fentanyl, 150 mg of thiamylal, and 50 mg of rocuronium. Tracheal intubation was successfully performed and general anesthesia was maintained throughout the surgery without any complications. Also, no complication was found in postanesthetic rounds.

Ultrasound equipment is widely used in the field of anesthesiology for various purposes such as ultrasound-guided central venous catheterization and peripheral nerve blockade.

Recently, the utility of ultrasound evaluation of gastric contents has also been reported.¹⁻³

Indications for rapid sequence induction of anesthesia include full stomach with ileus, obesity, and emergency cases with short fasting time. In the present case, the patient was managed by long-term fasting and a nasogastric tube. The patient had no complaint of gastric fullness or regurgitation of stomach contents. However, gastric contents were detected by sonographic assessment. Perlas *et al.* classified gastric ultrasound images into grades 0 to 2 according to the predicted gastric volume and content using sonography.² If gastric contents are observed in the right lateral decubitus and supine positions, the gastric contents may exceed the volume of safe limits of regurgitation risk. In the present case, gastric contents were easily detected even in the supine position. Generally, it is easier to detect residual contents in right lateral decubitus position as gastric contents accumulate in that position. We therefore judged the patient's condition to be grade 2 in Perlas's score. Computed tomography also provides information on stomach contents, but it is not realistic to scan all patients who undergo general anesthesia. Gastric sonography can be performed quickly and easily at the bedside.

References

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Figure Legend

Figure 1. Image of gastric contents by sonography (supine position).

Gastric contents are easily detected as a low-echoic space (arrow). The cross-sectional area is about 9cm².

Figure 1.

