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Emergence emesis of duodenogastric reflux in a patient with an endoscopically visualized empty stomach

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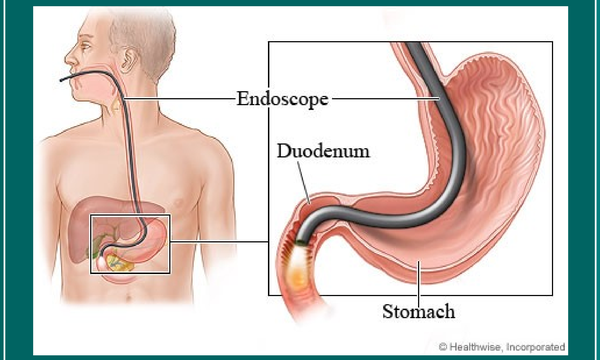
Introduction

Transpyloric reflux of duodenal contents, including bile and pancreatic enzymes, routinely occurs in small volumes as physiologic pressure gradients across the pylorus shift during digestive stages or in response to endoscopy.[1-4] We report a case of large volume duodenogastric reflux (DGR) and emesis during emergence despite known empty stomach.

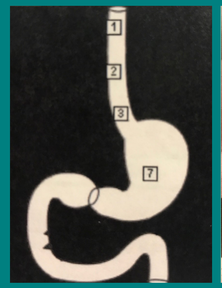


Case Presentation

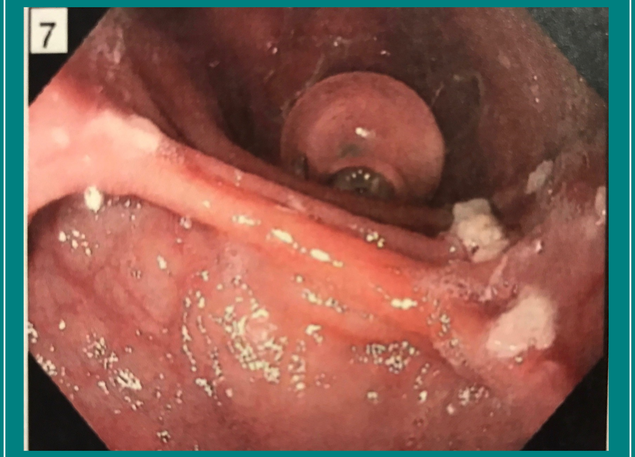
A 3-year-old, 15.3-kg boy with history of short bowel syndrome s/p small bowel transplant and G tube placement presented for EGD evaluation of blood in his stool.

Case Presentation

The child was appropriately NPO and was induced with 15 mcg fentanyl, 30 mg propofol, and 3 mg rocuronium with uneventful placement of endotracheal tube. At the end of the EGD neuromuscular block was reversed with neostigmine 0.7 mg and glycopyrrolate 0.14 mg . The stomach was easily visualized on endoscopy to be empty and with closed pylorus.



However, during stage 2 of emergence, the patient vomited ~150 mL of dark, bilious fluid. Once the oropharynx and stomach were suctioned in right lateral decubitus position, the patient was then awakened and the ETT cuff subsequently deflated and the patient was extubated without complication. The patient remained at his pre-operative respiratory status in the recovery room, with a SpO_2 of 98% on room air.



Discussion

In one study of 1120 children, 8.2% were found to have DGR on endoscopy; in small volume, it is regarded as a physiologic finding. The clinical significance of the effect of DGR on gastric mucosa is somewhat controversial, though the serious consequences of aspiration and subsequent acute lung injury are well described.[5-6] When bile-rich reflux is aspirated into the lungs, studies demonstrate induction of acute cellular injury with subsequent "bile pneumonia" and increased A-a gradient through unclear pathophysiology.[7]

Discussion

The risk for high volume bilious aspiration in appropriately NPO patients may be greater in those children with structural derangements or dysmotility of the upper GI tract.[8] These patients, such as the one discussed above, are at increased risk for perioperative aspiration with DGR. Appropriate strategies to minimize aspiration should be planned during anesthesia care in high risk pediatric patients.

References

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