


SP67

POCUS GASTRIC ULTRASOUND

Peter Van De Putte. Imeldezaekenhuis, Bonheiden, Belgium

10.1136/rapm-2022-ESRA.73

Although gastric ultrasonography had been used for almost thirty years by gastroenterologists to evaluate gastric motility and emptying or to diagnose cancer of the gastric wall, it was only approximately ten years ago that the first publications appeared in the anesthesia literature about the perioperative use of bedside ultrasound to evaluate gastric content and volume. This new tool allowed and allows physicians to assess perioperative patient aspiration risk and guide anesthetic management. The exam mainly consists of two components. The qualitative component determines if a stomach is empty or contains clear or thick fluid or solid contents. If deemed necessary, the quantitative component of the exam determines how much clear fluid is present and uses for this purpose a validated mathematical tool to estimate total gastric fluid volumes.1 It is however essential to keep in mind this model has been validated for clear fluids only.

A detailed framework (I-AIM model) was described that presents every conceptual step for the indications (I), acquisition (A), interpretation of gastric ultrasound (I) and the medical decisions (M) concerning anesthetic management to be taken from the obtained information, (https://www.gastricultrasound.org/en/extra-material/faq/#downloads).

For the extended technical aspects of the scanning and sonographic presentations of different stomach contents, we refer to two review articles or the abovementioned website.3,4 In brief, the epigastrium of the patient is scanned sagittally with a low-frequency abdominal transducer in the supine and right lateral decubitus position. The aorta and left lobe of the liver serve as anatomical references. This way a cross-sectional view of the antrum of the stomach which is the most amenable part of the stomach to be scanned- is obtained.

The indications for using gastric PoCUS are the clinical scenarios in which prandial status is uncertain or gastric emptying is possibly delayed.4 This can be patients who for whatever reason have not followed the fasting guidelines or have an unclear history (language barrier, cognitive dysfunction, children...) or patients with chronic kidney disease, multiple sclerosis, diabetes....

The question that needs to be answered is -as for most point-of-care techniques- a dichotomous one. Does this patient have a pneumothorax, does that lady have a pericardial tamponade? In this case the question to be answered is: does our patient have an ‘empty’ or a ‘full’ stomach? A definition of ‘full’ is the presence of content that goes beyond what can be found in fasted and healthy patients. This is the presence of clear fluid in excess of baseline gastric secretions being > 1.5 mL/kg clear fluid or the presence of thick particulate or solid content. The volume of gastric contents is an important determinant of regurgitation but the cut-off value of 1.5 mL/kg that confers a ‘full’ stomach and unacceptable aspiration risk is a topic of an ongoing debate and beyond the scope of this short update.5

Over the last decade, there has been an ever-rising number of publications on gastric point-of-care ultrasound. The initial focus was on the technique’s development and characterising it in terms of validity, namely is it assessing what it intends to assess and in an accurate way. The reproducibility of the results (reliability) and application in clinical practice (interpretability) were to follow. Gastric PoCUS was investigated in different patient populations: adult, paediatric, morbidly obese, chronic renal failure, diabetes, elective, urgent and emergency surgery. More especially the obstetric population has attracted a huge interest as demonstrated by the large number of publications. Studies have focused on gastric emptying throughout the pregnancy but have focused on term patients and during labour.6

Other studies have focused on preoperative drinking policies with different timings and regimens (carbohydrate rich, protein enriched). Testing more liberal drinking policies may help us improve patient comfort, alleviate the effects of starvation, and retain safe gastric volumes. Especially in the paediatric population, the work by Frykholm and Andersson from Sweden has led to modified and more liberal fasting guidelines in children.7

Although many aspects that are essential to investigate this new tool have been studied, there are aspects that remain to be evaluated such as the education and implementation into curricula, cost-effectiveness, its role before tracheal extubation because the focus has been in most cases on its preoperative use and other interesting pathways such as its possible application in evaluating enteral feeding in the intensive care environment.

Gastric PoCUS is an exciting new tool that can be added to the armamentarium of the anesthesiologist, but it needs to be seen as an adjunct that increases the safety margin within anesthetic management, together with appropriate medical history and physical exam and it is not meant as a replacement for the fasting guidelines that have an excellent track record.

REFERENCES


SP68

DURAL PUNCTURE EPIDURAL: A ‘HOLE’ LOT BETTER? IS THIS THE HAPPY MEDIUM WE WERE HOPING FOR?

1Janine Vally, 2Marc Van de Velde. 1Fellow, Department of Cardiovascular Sciences and Anesthesiology, KU Leuven and UZ Leuven, Leuven, Belgium; 2Consultant, Department of Cardiovascular Sciences and Anesthesiology, KU Leuven and UZ Leuven, Leuven, Belgium.

10.1136/rapm-2022-ESRA.74