Guest Editorial

Breaking the fast, and overcoming the physical and mental barriers for early resumption of postoperative feeding

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An experiment was conducted in 1974 involving a rhesus monkey, where life-threatening pneumonitis occurred after the instillation of 0.4 mL/kg of gastric acid (pH 1.26) into one bronchus. It led to the postulation that gastric acid aspiration of > 25 mL (which roughly translates into 0.4 mL/kg in a 60 kg adult) can endanger the life of humans.[1,2] Based on this premise, an individual with residual gastric volume > 25 mL and gastric content pH < 2.5 was considered at risk for acid aspiration syndrome. These arbitrary assumptions were proposed by the authors to be applicable to humans,[1,2] and followed for long, partly also because research in this field was limited by many confounders and risks associated with the techniques used for gastric assessment (irradiation, invasiveness of techniques, and logistical limitations). The advent of ultrasound technology with the widespread availability and utility of gastric ultrasound has changed the scenario for the better.[3]

Gastric ultrasound studies have shown the residual gastric volumes to be much higher than 25 mL despite adequate duration of fasting in adults, both obese and non-obese, and suggest that the presence of any solid gastric content or > 1.5 mL/kg liquid residual gastric volume be considered to indicate a patient "at risk for aspiration."[4-9]

Adequate duration of preoperative fasting for all patients, with additional administration of anti-acid prophylaxis and implementation of rapid sequence induction and intubation in "at-risk patients," is, therefore, practised to minimise the risk of aspiration and its severity during anaesthesia and sedation.[3] Although these measures address aspiration-related issues at induction, maintenance, and recovery from anaesthesia, resumption of oral intake postoperatively is a more contentious area.

During recovery from anaesthesia, even in an adequately fasted patient, aspiration risk may be present for a variable period. In patients undergoing intra-abdominal surgery, several risk factors are identified that may predispose the patients to aspiration of gastric contents in the postoperative period.[10] In patients undergoing non-abdominal surgery, the early postoperative period is still a dangerous timeline due to obtunded airway reflexes, depressed mentation, and increased predisposition to nausea and vomiting. These apprehensions, compounded with a lack of clarity regarding the resumption of postoperative oral intake, have contributed to inordinate delays in restarting oral intake. This practice, which is often generalised to all ages, surgeries and anaesthesia practices, results in patients unnecessarily suffering

from prolonged fasting following surgery and anaesthesia.

A survey conducted among practitioners of the Indian Society of Anaesthesiologists revealed that, generally, anaesthesiologists instructed patients to remain nil per oral following surgery for 4.0 (2.3) h and 8.6 (7.0) h for clear liquids and solids, respectively.[3] This duration was approximately 2 h and 2–4 h for clear liquids and solids among French anaesthesiologists.[11] A Chinese nationwide survey also noted that in non-abdominal procedures, most physicians allowed oral fluids 2–4 h after the procedure.[12] In another study, most patients were asked to be nil per oral for both solids and liquids for 6 h following surgery by the ward staff, irrespective of the surgery. However, the actual postoperative fasting time was much longer than 6 h for solids and liquids.[13]

Delayed resumption of oral intake postoperatively in patients, including those undergoing major abdominal surgeries, is known to contribute to increased incidence of surgical site infections, postoperative complications, and delay in recovery while adding to increased hospital stay and financial burden.[14-16] Early resumption of oral intake is shown to improve the recovery of bowel function after abdominal surgery and may even reduce the incidence of postoperative nausea and vomiting. Hence, enhanced recovery after surgery (ERAS) protocols consistently favour early initiation of oral intake postoperatively in all kinds of surgery.[12] The European Society for Clinical Nutrition and Metabolism (ESPEN) nutrition guidelines recommend resuming clear fluids and oral nutritional supplements almost immediately following surgery where possible, with a strong consensus.[17]

With this backdrop, and considering the advantages offered by early postoperative initiation of oral intake, more research needs to focus on initiating early postoperative oral intake. Studies are needed to identify the population, surgical procedures, anaesthesia plans, and acceptable clear liquids that are favourable for early initiation of postoperative oral intake. What would be the influence of the type of oral fluid consumed postoperatively on the outcomes? Would the gastric emptying times change, and to what extent? A study in this issue of the Indian Journal of Anaesthesia has used different types of clear liquids in the paediatric age group to initiate postoperative oral intake.[18] In children aged 3–10 years undergoing non-gastrointestinal lower abdominal surgeries, 'early feeding on demand' did not increase the frequency of postoperative nausea and vomiting. The authors initiated postoperative feeding with 5% dextrose, apple juice, mango juice, or orange juice as soon as the child demanded feed.[18] This is largely an unexplored area in research on perioperative liquid intake.

The perioperative fasting and feeding guidelines from the Indian Society of Anaesthesiologists recommend a list of oral liquids and solids that can be consumed preoperatively by the surgical population of the Indian subcontinent based on input from nutrition experts and evidence.[3] Future research needs to explore the utility of such items for initiating postoperative oral intake.

If the "sip til send" approach is safe, where clear liquids can be consumed until minutes before shifting to the operating room,[19] then the "start when demanded" approach for initiation of postoperative clear liquid feeds needs to be explored in patients who have undergone non-abdominal surgery with the premise that someone who is alert enough to demand water/feeds in the postoperative period may not be at risk for aspiration.

Early postoperative resumption of oral intake is desirable but should be influenced by a clear balance of the benefits and risks, especially of aspiration. Further research should focus on carefully identifying patients, surgery, and anaesthesia for early and safe postoperative initiation of oral intake. Efforts should be made to reach all perioperative caregivers to overcome the myth that safety lies in prolonged durations of postoperative fasting.

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