Complications of Intraluminal Tubes In Bariatric Surgery: Systematic Review And Meta-Analysis

Scott Z. Mu MD MHS[1], Moamena El-Matbouly MD[2], Alan A. Saber MD MS[2]

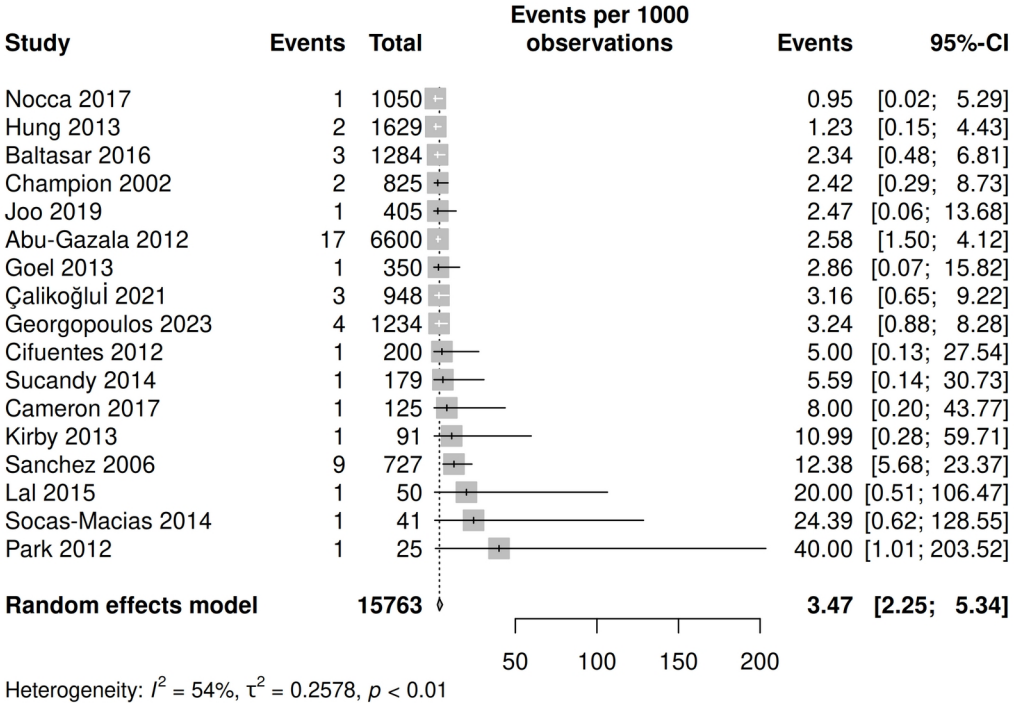
[1] Rutgers New Jersey Medical School, Newark, NJ, [2] Newark Beth Israel Medical Center, Newark, NJ

Introduction:

Various tubes are routinely inserted into the alimentary tract during bariatric surgery, but these devices can cause harm if they are incorrectly used. Stapling, suturing, transection, and gastrointestinal perforation are all recognized risks of intraluminal tube use. We aimed to synthesize the previously published experiences of tube complications to better understand the risks and consequences and also propose our own recommendations for improving safety and eliminating harm.

Methods:

- Systematic review of intraluminal tube complications in bariatric surgery
- Included abstracts, case reports, case series, cohort studies, surveys and reviews in PubMed, Web of Science and Embase
- Extracted type of operation, type of tube, whether the complication was identified intraoperatively, and Clavien-Dindo classification of complication
- Meta-analysis of the proportion experiencing an intraoperative complication from intraluminal tubes in bariatric surgery to estimate its incidence.
- Proposed a perioperative safety checklist to be used during bariatric operations requiring intraluminal tubes



Conclusion:

Intraoperative complications from intraluminal tubes during bariatric surgery uncommonly occur but are a preventable source of morbidity and mortality. Surgical teams should be familiar with their use, be able to identify complications intraoperatively, and employ safety checks in order to prevent these devices from harming patients.

Results:

- Screened 1090 reports, identifying 55 unique articles describing 93 cases of intraluminal tube complications
- **Most common complication was tube stapling (57%)**, followed by gastrointestinal perforation (24%)
- Tube complications were identified intraoperatively in 72% of cases
- 58% of cases did not require reintervention, 9.1% underwent postoperative endoscopy, 17% underwent reoperation
- 6.1% postoperative mortality
- Estimated incidence of an intraluminal tube complication during bariatric surgery was **3.47 events per 1000 cases** (95% CI: 2.25 to 5.34), pooled from 15,763 patients across 17 studies
- Our proposed perioperative tube safety checklist includes a preoperative briefing with the anesthesia team regarding tube insertion and removal, using a single intraluminal tube (for both gastric decompression and sleeve sizing), considering the use of a lighted calibration tube, and only introducing the tube under direct laparoscopic visualization.