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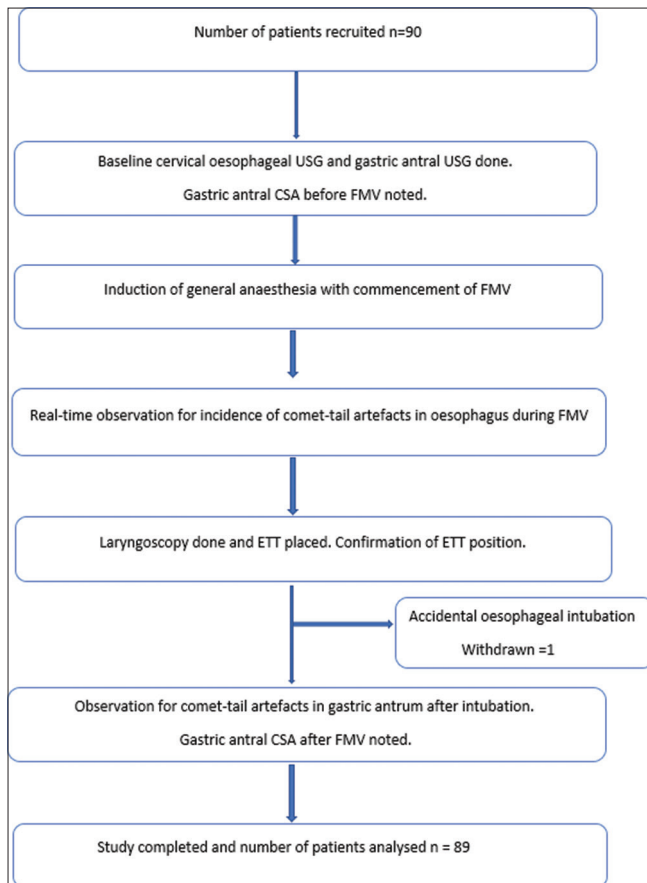
**Comparison of real-time cervical oesophageal ultrasonography and gastric antral ultrasonography to detect gastric insufflation during face-mask ventilation under general anaesthesia-Aprospective observational study.**

***EmayahTenzing, Vasudevan A***

Department of Anaesthesiology and Critical Care, JIPMER, Puducherry.

**Background and Aims:** Face mask ventilation (FMV) is life saving. It is paramount to maintain oxygenation and ventilation. But FMV is avoided in rapid sequence induction (RSI), for fear of gastric insufflation. Gastric insufflation predisposes the patient to pulmonary aspiration. But the current methods available to detect gastric insufflation are not reliable markers. These include epigastric auscultation for insufflated gases, insertion of nasogastric tube to aspirate and measure the gases, and gastric antral cross-sectional area (CSA) measurement. Each of the above have their own limitations. So, reliable markers denoting gastric insufflation can prevent pulmonary aspiration and can enable “safe” FMV. Real-time transcutaneous ultrasonography (USG) of cervical oesophagus during FMV was done to look for comet-tail artefacts (acoustic shadows created by entrainment of gases into digestive tract). The aim of this study was to compare real-time upper cervical USG with gastric antral USG to detect gastric insufflation during FMV under general anaesthesia.

**Methods:**



**Results:** Ninety patients were recruited. One case of accidental intubation was withdrawn. Remaining 89 patients were analysed. There was an increased incidence of comet-tail artefacts in the oesophagus when compared to gastric

antrum. This difference was statistically significant as analysed by Mcnemar test. The lowest peak airway pressure at which comet-tail artefacts appeared in oesophagus was 21.47 (SD-2.86) cm H2O.

**Conclusion:** Cervical oesophageal USG is better than gastric antral USG in identifying insufflation of gas into digestive tract. Limiting the airway pressures to < 20 cm H<sub>2</sub>O would be safer in providing safe FMV without cricoid pressure. Real-time USG monitoring of oesophagus in the neck for comet-tail artefacts is useful in early identification of early gastrooesophageal insufflation.

**Key Words:** artefacts; insufflation; masks; ventilation; ultrasonography

**References:**

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