Research Protocol

NCT: Not Assigned Yet

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Following approval from the institutional ethics committee, adult patients undergoing cholecystectomies, appendectomies, and urgent intestinal obstruction surgeries will be enrolled. Patients under the age of 18, pregnant individuals, those with a history of bariatric surgery, esophageal pathology, or non-acute mechanical gastric emptying obstruction will be excluded. Informed consent will be obtained. Prior to anesthesia induction, gastric content will be assessed by an experienced operator. A Sonosite Edge II ultrasound system with a low-frequency convex transducer (2-5 MHz) will be used for this purpose. Standardized ultrasound windows, as described in previous studies (Van de Putte, et al), will be obtained. The patient will be placed in the dorsal decubitus position to visualize the gastric antrum, aorta, superior mesenteric artery, inferior vena cava, liver, and pancreas. If solid or thick liquid gastric content is observed, patients will be immediately classified as having a full stomach. If no content is visualized or clear liquid is evident, the patient will be placed in the right lateral decubitus position. A scan will be performed from the left subcostal border to the right, sequentially visualizing the body, antrum, and pylorus. The characteristic 5-layered structure of the gastric wall will be identified: hyperechoic serosa, hypoechoic muscularis propia, hyperechoic submucosa, hypoechoic muscularis mucosa, and hyperechoic air-mucosa interface. If clear liquids are visualized, the volume will be quantified using the formula derived from the study by Perlas, et al (2013), which considers the cross-sectional area in the right dorsal decubitus position and the patient's age: Vol (mL) = 27.0 + 14.6 x CSA (cm2) – 1.28 x age (years) *CSA: cross-sectional área. Volumes greater than 1.5 mL/kg will be considered as a full stomach. In cases of procedure intolerance due to discomfort or non-cooperation, the examination will be terminated, and the patient will be excluded from the study. Patient demographic data, surgical pathology and severity, comorbidities, fasting hours, measured gastric content, type of anesthesia, qSOFA score, and occurrence of adverse events such as desaturation, regurgitation, or aspiration will be recorded anonymously. The sample size calculation used the method for estimating a proportion. A prevalence of 17% based on previous pilot studies(9), with a confidence interval of 5% and a confidence level of 95%, resulted in a total of 217 patients to be recruited. Accounting for a 10% loss, a final total of 242 patients will be included. Continuous data will be presented as mean ± standard deviation or median and interquartile range, as appropriate. Group comparisons will be performed using Student's t-test for independent samples or the Mann-Whitney U-test, depending on the distribution. Categorical data will be presented as absolute counts and corresponding percentages. Differences will be analyzed using Fisher's exact test or the Chi-square test. For association analysis, univariate and multivariate linear or logistic regressions will be conducted, as appropriate. A significance level of 0.05 will be considered, along with a corresponding 95% confidence interval. All calculations will be performed using statistical software.