

Dear Doctor,

Greetings from Micro Labs limited. We are happy to bring you “**ENTERON**” which contains latest and interesting news in the field of Gastroenterology.

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Looking forward to your valuable feedback

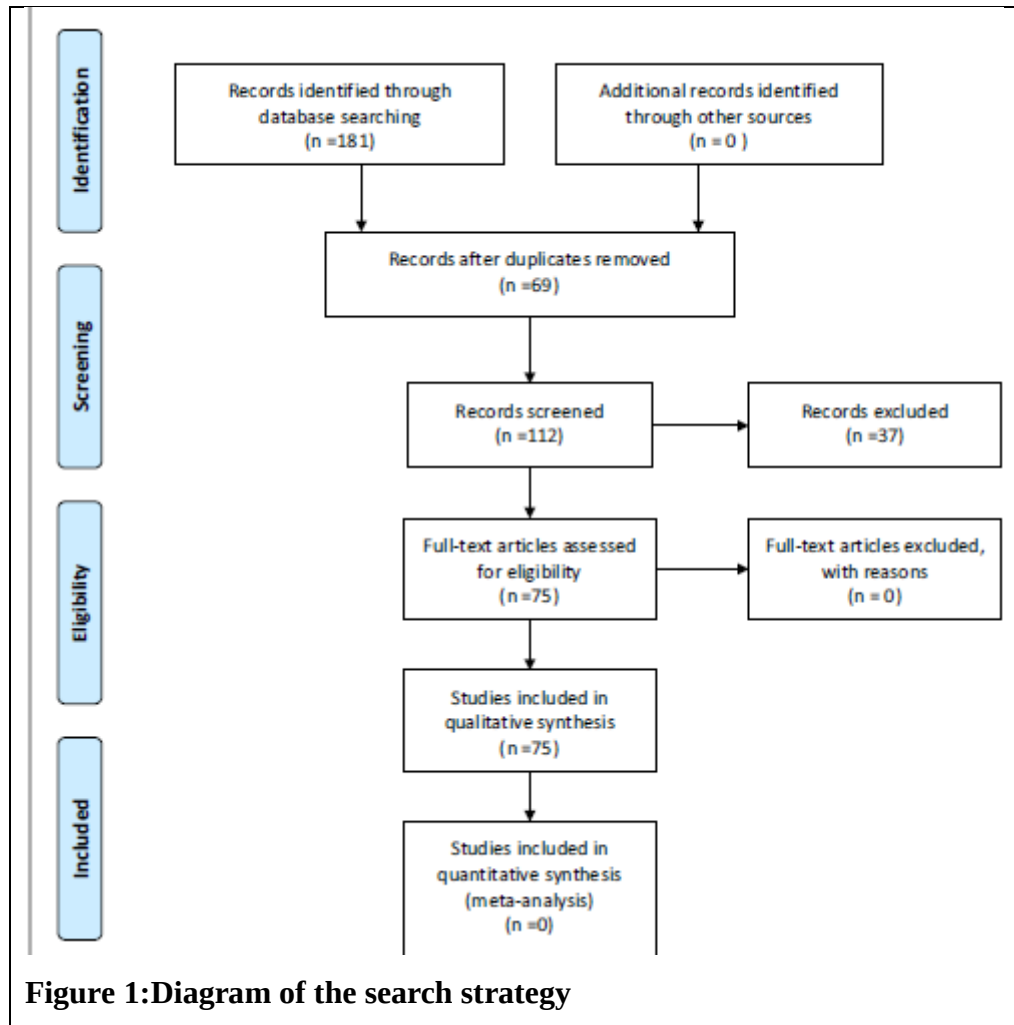
Best Regards,

Medical Team, Micro Labs Ltd

Predisposing factors and the complication rate of spilled gallstones during laparoscopic cholecystectomy

Laparoscopic cholecystectomy has been accepted as a treatment of choice for managing symptomatic cholelithiasis. According to the studies, incidence rate of perforation of gallbladder during laparoscopic cholecystectomy (LC) ranges from 6 to 40% while the incidence rate of spillage of gallstones secondary to perforation is 16%. However, recent studies highlighted the incidence rate of complications of spilled gallstones from 0.04 to 19%.¹ With the increased quality of diagnostic ultrasound and the treatment option of laparoscopic cholecystectomy, gall stones are now detected and consequently operated. Laparoscopic cholecystectomy has become the method of choice because of better patient satisfaction and shorter hospital stay. However, changes in practice from open surgery has led to different problems like biliary tract injuries and intraoperative spillage of stones. biliary tract injuries can be minimised with experience, supervision, and good training, whereas the complication of spilled gall stones is often ignored.²

Gavriilidis P aimed to investigate the predisposing factors and the complication rate of spilled gallstones during laparoscopic cholecystectomy. Embase, Pubmed, Medline, Google scholar and Cochrane library were systematically searched and articles were collected. Out of 181 articles, 75 were selected including 85 patients. Of 85 patients, 38% were men and 62% women. Of which, 27% reported the incident of spillage of the gallstones during the operation. Time of onset of symptoms differed widely from the second postoperative day to 15 years later. Of 85 patients, 10 were asymptomatic and diagnosed with spilled gallstones incidentally, while other presented with complications of severe morbidity and almost, 87% of the patients required treatment with surgical intervention and 12% with US $\pm$ CT scan guidance drainage. One perioperative death was observed



rate of

Although incidence spilled gallstones complications differs, majority of the patients shows severe morbidity and required surgical interventions. That is why, urgent standardisation of the management of spilled gallstones is necessary. Surgeons should be documenting all the cases of spilled stones in the operative notes. Also, General physicians and patients should be informed about the incidence, this will help to resolve diagnostic dilemmas in the future.

Conclusions: Symptomatic patients with lost gallstones shows severe morbidity complications and most of them requires major surgical procedures. Therefore, standardisation of the management of spilled gallstones is necessary.

Reference

1. Gavriilidis P, Catena F, de'Angelis G, de'Angelis N. Consequences of the spilled gallstones during laparoscopic cholecystectomy: a systematic review. World Journal of Emergency Surgery. 2022 Dec;17(1):1-5.
2. Sathesh-Kumar T, Saklani AP, Vinayagam R, Blackett RL. Spilled gall stones during laparoscopic cholecystectomy: a review of the literature. Postgraduate medical journal. 2004 Feb 1;80(940):77-9.

Diagnostic Validity and Reliability of Ultrasound in children with Appendicitis

To diagnose appendicitis, ultrasound is the commonly used technique. According to the studies, ultrasound has a sensitivity around 71.2% to 99% and specificity around 91.3% to 98.2%. As ultrasound is cost-effective, it has been cited as the first diagnostic method in children with appendicitis. Though CT scan shows more accurate diagnostic information about acute appendicitis than ultrasound but CT scan increases the radiation risk especially in children. That is why, CT scan has placed the second diagnostic modality after ultrasound. The risks of radiation on children are reported to be almost ten times compared to adults.¹ Due to Zero radiation, quick, more efficient and easy excess makes ultrasound one of leading choice of diagnosis in appendicitis in children as compared to CT or MR. Symptoms and clinical signs of appendicitis are not uniform, and has to depend on diagnostic imaging for more precise diagnosis. However, Ultrasound is regarded as the best method for initially imaging a patient with suspected acute appendicitis, by the American College of Radiology (ACR). Also in 2010, Dutch Society of Surgeons recommended the routine use of ultrasound and/or computed tomography (CT) for the diagnosis of acute appendicitis.²

This study aimed to determine the reliability of ultrasound in acute appendicitis. To conduct this study, 111 appendectomy children in a six- months period has been extracted when they used the ultrasound prior to surgery. Details of the patients such as demographic data, medical history and findings of appendicitis, even during the surgery, have been recorded using designed questionnaire. Results of ultrasound have been compared with surgical results (considered as the gold standard). SPSS software has used for analysing each of the ultrasound findings. Other parameters such as sensitivity index, specificity, positive and negative predictive value, accuracy and area under the ROC curve were also calculated. Based on the result of ultrasound before surgery, 64% of patients with purulent appendicitis showed direct sonographic signs of appendicitis, 9.9% showed indirect signs, 5.4% revealed complicated signs, 6.3% had mesenteric lymphadenopathy and 14.4% showed negative in ultrasound. According to the final diagnosis after surgery, 94.6% had appendicitis and 5.4% were negative for appendicitis. Significant relationship was observed between the ultrasound results before surgery and the final diagnosis after surgery for patients.

Diagnostic criteria of ultrasound results before surgery in order to determine the appendicitis in children undergoing surgery has been revealed by different factors including sensitivity (83.8%) specificity (100%), positive predictive value (100%), negative predictive value (83%) and accuracy (92.3%),

Sensitivity	Specificity	Accuracy	Negative predictive value	Positive predictive value	Curve area ROC	p-value
83.8%	100%	84.7%	83%	100%	0.919	< 0.001

Figure 2: Determination of diagnostic value and sensitivity value, specificity, positive and negative predictive value, accuracy and curve area under the ROC for Preoperative ultrasound results in the diagnosis of appendicitis in children under surgery

Conclusion: This study concluded that Ultrasound before surgery is the useful method to determine the children appendicitis

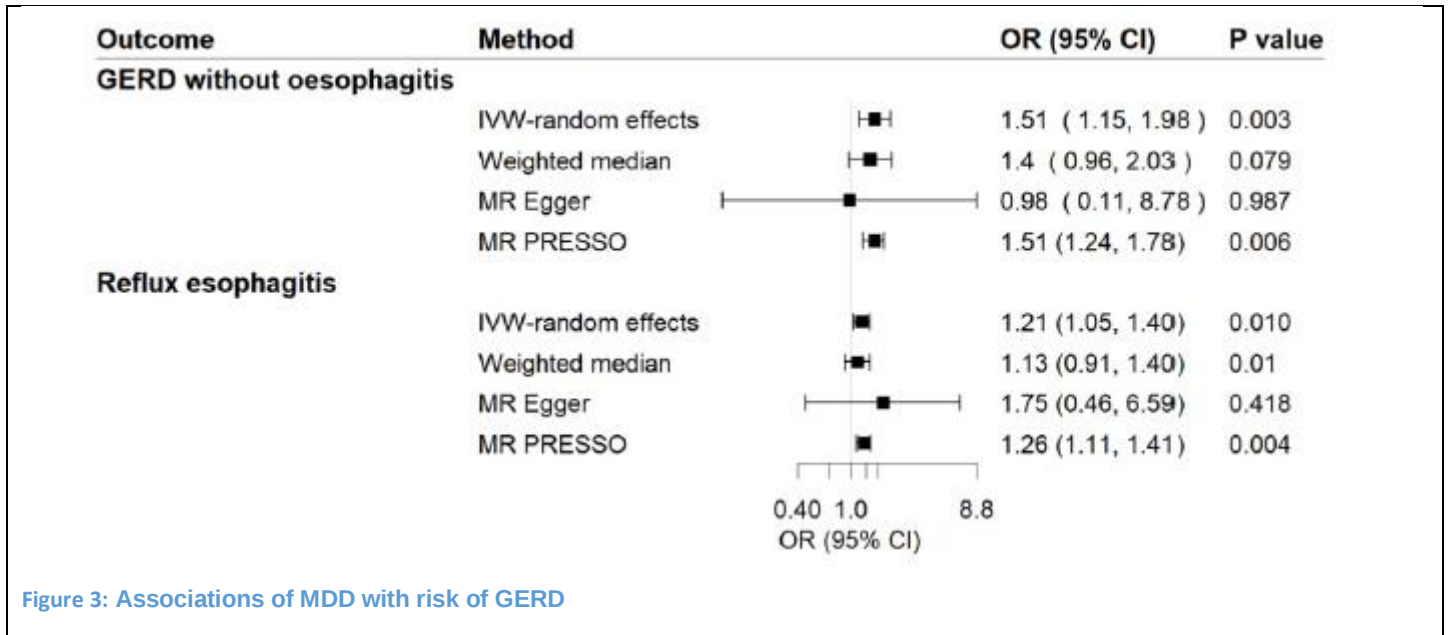
References

1. Mohajerzadeh L, Khalili M, Harati M. Reliability of Ultrasound for diagnosis of appendicitis in children. Iranian Journal of Pediatric Surgery. 2022;8(2):133-43.
2. Khan U, Kitar M, Krichen I, Maazoun K, Ali Althobaiti R, Khalif M, Adwani M. To determine validity of ultrasound in predicting acute appendicitis among children keeping histopathology as gold standard. Ann Med Surg (Lond). 2018 Dec 18;38:22-27

Evaluation of Association between Major Depressive Disorder and Gastroesophageal Reflux Disease

Since few years, major depressive disorder (MDD) has been recognized as a serious concern. Burden of major depressive disorder has been increasing disease affecting approximately 264 million people worldwide. major depressive disorder has a high heritability of about 35%, while the age-of-onset of depression is not time-specific but throughout a person's lifespan. On the other hand, Gastroesophageal reflux disease (GERD) is a f chronic disorder common in both children and adults, which manifests common phenotypes including reflux esophagitis and gastroesophageal reflux disease without esophagitis. According to researches, around 20% of the population were affected by GERD by 2005. However, most of the observational studies have highlighted the Bidirectional associations between MDD and GERD indicating that people with MDD may be at increased risk of GERD through unhealthy lifestyle and physiological dysfunction, such as collapse of the lower oesophageal sphincter. On the other hand, there is a chance that GERD may increase the risk of MDD by affecting the central nervous system through chronic mucosal inflammation.¹ Though studies have reported the association between GERD and MDD, but the direction of the effect is still unclear. Understanding the direction of the association between GERD and MDD is really important as it may affect the approach to manage patients diagnosed with both diseases.²

Miao Y etal aimed to explore the causal relationships between major depressive disorder and gastroesophageal reflux disease. To conduct this study, 31 and 24 single-nucleotide polymorphisms without linkage disequilibrium were selected from relevant genome-wide association studies, at the genome-wide significance Level. Genetic data were collected for major depressive disorder (173,005 individuals), gastroesophageal reflux disease (385,276 individuals), gastroesophageal reflux disease without esophagitis (463,010 individuals) and reflux esophagitis (383,916 individuals) from meta-analysis study of genome-wide association studies were collected



Positive association between Genetic liability to major depressive disorder and gastroesophageal reflux disease and its subtypes were found. Per one-unit increase in log transformed odds ratio of major depressive disorder, odds ratio was 1.31 for gastroesophageal reflux disease, 1.51 for gastroesophageal reflux disease without esophagitis, and 1.21 for reflux esophagitis. According to Reverse-direction analysis, genetic liability to gastroesophageal reflux disease was linked to increased risk of major depressive disorder. It was also found that Per one-unit increase in log-transformed odds ratio of gastroesophageal reflux disease, odds ratio of major depressive disorder was 1.28.

Conclusions: This study highlighted a bidirectional causal relationship between major depressive disorder and gastroesophageal reflux disease

References

1. Miao Y, Yuan S, Li Y, Chen J, Li X, Larsson SC, Zhang Q. Bidirectional Association between Major Depressive Disorder and Gastroesophageal Reflux Disease: Mendelian Randomization Study. *Genes (Basel)*. 2022 Nov 2;13(11):2010
2. Kim SY, Kim HJ, Lim H, Kong IG, Kim M, Choi HG. Bidirectional association between gastroesophageal reflux disease and depression: Two different nested case-control studies using a national sample cohort. *Sci Rep*. 2018 Aug 6;8(1):11748

Utility of both trans catheter arterial embolization and surgery approaches in a gastric ulcer-induced Splenic Artery Pseudoaneurysm: A Case Report

Upper gastrointestinal bleeding is one of the common medical emergency with a mortality rate of 2–10%. Upper gastrointestinal bleeding has two different etiologies: variceal and non-variceal bleeding and the management and patient outcomes in both cases differ. Peptic ulcer disease is the most common cause of acute non-variceal Upper gastrointestinal bleeding with approximately 50% of all cases attributed to Peptic ulcer disease. Peptic ulcer-induced splenic artery pseudoaneurysm is the rare complication of Peptic ulcer disease that can lead to massive Upper gastrointestinal bleeding. For massive uncontrolled Upper gastrointestinal bleeding, Transcatheter arterial embolization (TAE) or surgical intervention are necessary. However, there is a controversy between surgery and TAE, as patients with Upper gastrointestinal bleeding are often at high risk and are poor surgical candidates. According to studies, TAE can save high-risk patients. But the efficacy and safety of TAE in Upper gastrointestinal bleeding is lower than that in lower gastrointestinal bleeding or biliary haemorrhage, because the complex collateral circulation in the upper gastrointestinal tract can inhibit efficient embolization

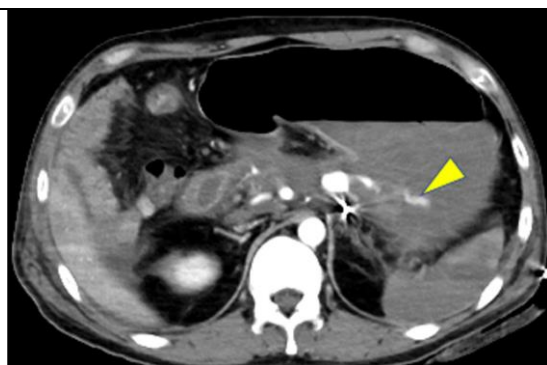
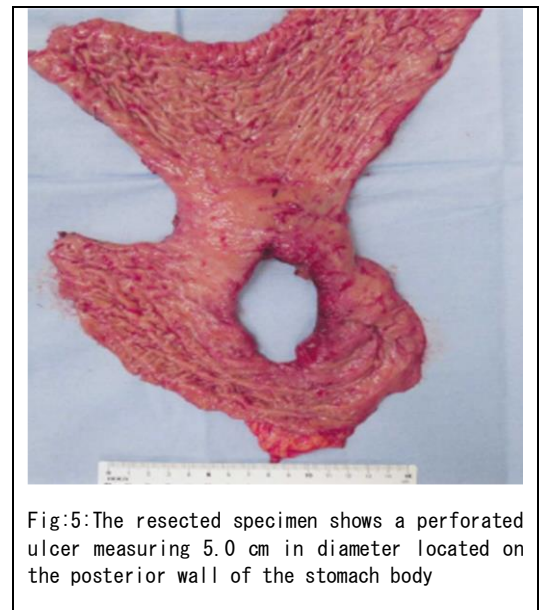


Figure 4: A second dynamic CT shows extravasation from the SAP into

An alcoholic 33-year-old male with a 2-week history of hematemesis was presented with pallor and impaired consciousness. On examination, body temperature was 35.9 °C, heart rate was 120 beats per minute in sinus tachycardia, blood pressure was 84/34 mmHg, respiratory rate was 26 breaths per minute, and oxygen saturation was 100% on 10 L of oxygen. Computed tomography showed a massive, enhanced fluid collection in the stomach. Patient underwent urgent upper gastrointestinal endoscopy, massive fresh blood pooling was seen in the stomach and a gastric ulcer was located in the upper posterior wall of the gastric body. No active bleeding was observed and endoscopy was completed without cauterization. On day 2, patient experienced massive rebleeding, hematemesis, and sudden onset of haemorrhagic shock. Blood tests showed fatal anemia (haemoglobin 0.7 g/dL),

patient was managed immediately with massive blood transfusions and catecholamine administration. Preparation with transfusion was inadequate to conduct a laparotomy procedure, for which emergency angiography and TAE were performed.

Celiac angiography showed extravasation from a splenic artery pseudoaneurysm. Although TAE accomplished a temporary cessation of bleeding, rebleeding was seen the next morning. First, CT imaging was found to be negative, but second CT showed extravasation from splenic artery pseudoaneurysm into the stomach.(fig:4) Later, emergency laparotomy was conducted. Intraoperatively, stomach was filled with blood clots, bleeding ulcer on the upper posterior wall of the stomach body was perforated, with a hole measuring 5.0 cm in diameter (Fig. 5). Splenic artery pseudoaneurysm was identified as the source of bleeding. Ligation of the splenic artery proximal was done to the gastric ulcer perforation where the splenic artery pseudoaneurysm was evident. On postoperative day 7, contrast-enhanced CT revealed partial splenic infarction without intra-abdominal abscess or other abnormal findings. On day 15, patient was treated conservatively and discharged from the hospital.



This Case Report concluded that during SA ligation and gastrectomy, it is important to consider the circulation of the spleen and residual stomach. TAE and laparotomy were used in this patient to save the life of the patient with massive hemorrhage under limited circumstances.

Reference

1. Shidahara H, Fujikuni N, Tanabe K, Abe T, Nishihara K, Noriyuki T, Nakahara M. Massive bleeding from gastric ulcer-induced splenic artery pseudoaneurysm successfully treated with transcatheter arterial embolization and surgery: a case report. Surgical Case Reports. 2022 Dec;8(1):1-8.



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