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Gallstone Ileus

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1. Summary

Gallstones are hardened deposits of digestive fluid that can form in your gallbladder. Your gallbladder is a small, pear-shaped organ on the right side of your abdomen, just beneath your liver. The gallbladder holds a digestive fluid called bile that's released into your small intestine.

2. Types of Gallstones

Types of gallstones that can form in the gallbladder include:

2.1. Cholesterol Gallstones: The most common type of gallstone, called a cholesterol gallstone, often appears yellow in color. These gallstones are composed mainly of undissolved cholesterol, but may contain other components.

2.2. Pigment Gallstones: These dark brown or black stones form when your bile contains too much bilirubin.

3. Introduction

Complications of gallstones may include:

3.1. Inflammation of the Gallbladder: A gallstone that becomes lodged in the neck of the gallbladder can cause inflammation of the gallbladder (cholecystitis). Cholecystitis can cause severe pain and fever.

3.2. Blockage of the Common Bile Duct: Gallstones can block the tubes (ducts) through which bile flows from your gallbladder or liver to your small intestine. Severe pain, jaundice and bile duct infection can result.

3.3. Blockage of the Pancreatic Duct: The pancreatic duct is a tube that runs from the pancreas and connects to the common bile duct just before entering the duodenum. Pancreatic juices, which aid in digestion, flow through the pancreatic duct. A gallstone can cause a blockage in the pancreatic duct, which can lead to inflammation of the pancreas (pancreatitis). Pancreatitis causes intense, constant abdominal pain and usually requires hospitalization.

3.4. Gallbladder Cancer: People with a history of gallstones have an increased risk of gallbladder cancer. But gallbladder cancer is very rare, so even though the risk of cancer is elevated, the likelihood of gallbladder cancer is still very small [1].

Very rare complication is so called gallstone ileus. It occurs in 0,3-0,5% in all patients with gallstones and is one of the rarest causes of gallstone ileus, occurring in about less than 0,1% of all mechanical obstruction cases and 1-4% of non-strangulating mechanical small bowel obstructions. It's a mechanical bowel obstruction and is a complication of cholelithiasis. Among symptoms are abdominal pain, distention, nausea, vomiting, and constipation as the gallstone travels through the gastrointestinal tract. Etiology of gallstone needs to be identified to define the surgical intervention to use to extract the stone. This condition is managed with not only surgical team, but it has to be collaboration among the interprofessional team to enhance the are of patient with this condition. Many of patients have other comorbidities like cardiac and lung disease, which also needs to be considered. In some cases, bowel resection may be required. Gallstone ileus continue to be associated with relatively high raes of morbidity and mortality [2]. The diagnosis is usually made three to eight days after symptoms, and a correct preoperative diagnosis is reported in 30-70% of all cases.

4. Diagnostics

There is usually alteration of hepatic enzymes. Ultrasound can be used to demonstrate fistulas, pneumobilia, impacted gallstones, and residual cholelithiasis or choledocholithiasis, but difficulties of locating stones and distortion by bowel gas make ultrasound suboptimal. CT scanning is a better entity and has a sesnsitivity of 93%. Although the treatment and management of gallstone ileus are still under controversy, the main therapeutic goal is the extraction of the offending stone. An open procedure is the „gold standard"to treat this condition. Gallstone ileus is best managed by an interprofessional team that includes a radiologist, a gastroenterologist, and a general surgeon (Figures 1-4).

Figure 1: Native RTG with detailed concrement – status ileosus

Figure 2: Perioperative finding of ileus

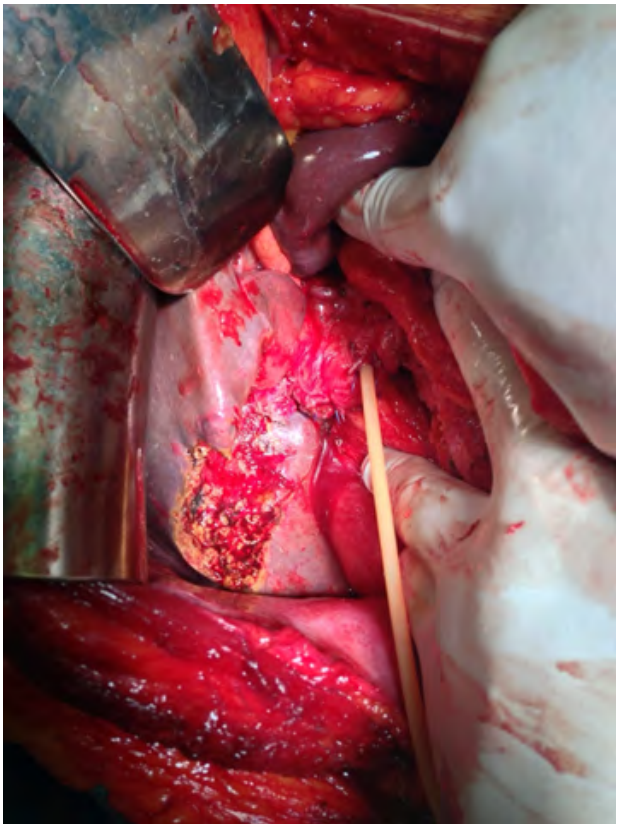

Figure 3: Cholecystectomy, revision, Kher drainage

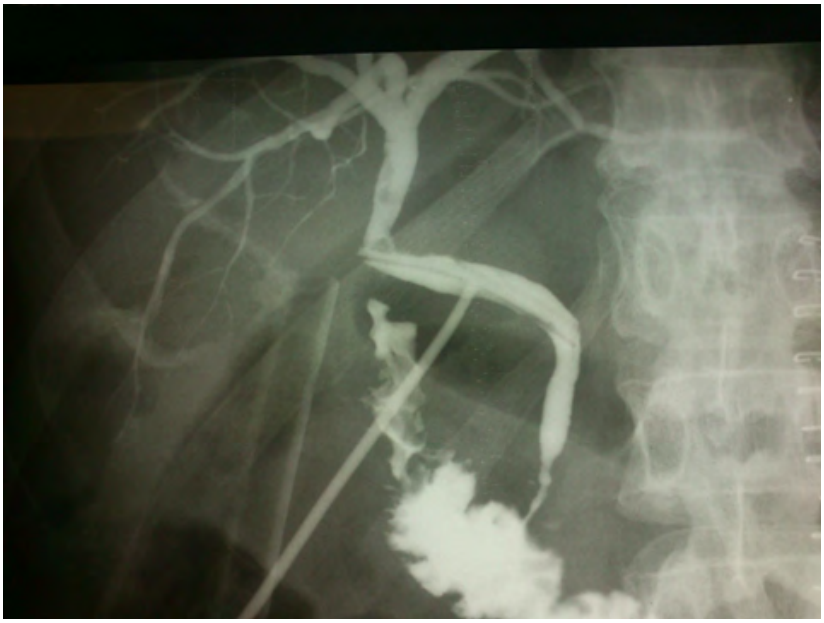

Figure 4: Perioperative cholangography

5. Case Report

56-year-old patient with 8-year anamnesis accidentally found solitary concrement in gallbladder approximately 2x3centimetres. Because until that time she didn't show any symptoms and practitioner told her that small stones are more dangerous because they can cause obstruction, icterus eventually pancreatitis. Approximately after 4 years she comes to examination with symptoms of chronical cholecystitis, but she refused according to information from her practitioner, surgical treatment. She comes with this complication with accute exacerbation few more times. She is suggested surgery but refuses. last time admitted with symptoms of nausea, vomiting and clinical RTG and CT findings of status ileosus. She complied with surgery, but didn't understand that her complications are because of her long-time problems with gallbladder. After applying naso-gastric sound and decompression of gastrointestinal tract, using peroral contrast through naso-gastric

sound followed with CT diagnostis and native RTG of abdomen. CT showed placement of obstruction but concrement wasn't contrast, more information was given by RTG. Patient overcomes surgical treatment, which goal was entero-lithotomy with extraction of concrement 4x5 centimeters, and renewal of passage through bowel. According to high comorbidity of patients in these cases, this surgery should be first stage, right before treatment second stage cholecystectomy with fistula closure. But in this case these stages had to be done in one procedure, because in revision of gallblader and choledochus, we found cholecystoduodenal fistula and enormously dilated choledochus. There was done antegrade cholecystectomy with duodenal fistula closure, choledochotomy of its dilatation and extraction of high amount of small concrements and sludge. Cholecystoduodenal fistula was the bypass of the bile leak to the bowel that is why she didn't show symptoms of icterus. After choledochotomy there was Kher drainage and there was perioperative cholangiography to assure that bile ducts are passable. Patient went through surgery without complications, Kher drainage extracted 10 days after 12 and 24 clamation without elevating of hepatal enzymes.

6. Discussion

There should be worries that patient listens to the first words of practitioners without understanding the possibility of other complications. The truth is that complications are more usual in small concrements which can be done endoscopically, papilosphyncterotomy and extraction of concrements and in second stage surgical cholecystectomy. There should be cautions that big concrement causes decubites of mucosa, chronical cholecystitis with attacks of accute exacerbation and leads to gallbladder duodenal fistula and releasing the concrement into the small intestine.

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