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Case Report

Uncommon but Need-To-Know Benign Biliary Complications of Cholelithiasis

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Abstract

Cholelithiasis is a prevalent pathology that is the origin of a group of benign biliary tract diseases among which acute cholecystitis, choledocholithiasis, acute cholangitis and acute biliary pancreatitis are the most frequent. However, there are uncommon benign biliary tract diseases derived from cholelithiasis that need to be known and suspected in order to obtain an early diagnosis and treatment, such as Mirizzi and Bouveret syndromes. We present a brief review of both entities from two clinical cases of patients recently admitted to our unit.

Keywords: Mirizzi syndrome; Bouveret syndrome; Cholelithiasis; Colecistoduodenal fistula; NMR; ERCP; Cholelithiasis; Gastroscopy; Lithotripsy

Mirizzi Syndrome

Clinical case

Woman of 23 years with no medical history of interest with 3 years episodic clinic of epigastralgia, nausea and vomiting, which yields with habitual analgesics. In the last episode it associates dysthermic sensation and fever with annoyance to palpation in right hypochondria. Blood test showed total bilirubin 1' 6mg/dl, GOT 180U/L and GPT 226u/L. Abdominal ultrasound detected proximal intra and extrahepatic bile duct dilatation with gallbladder occupied by large lithiasis, without being able to assess the common bile duct with these techniques. Cholangio-MRI was performed and observed that the lithiasis compresses the common hepatic duct, being normal the common hepatic duct caliber, findings compatible with Mirizzi syndrome (Figure 1).

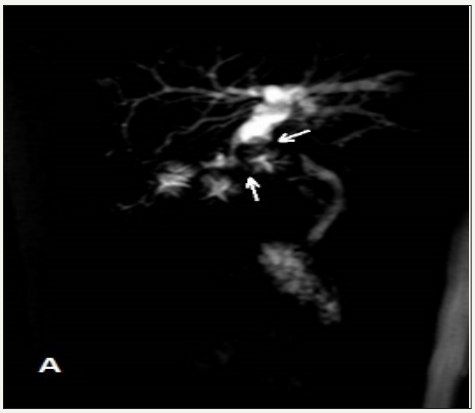

Figure 1: Image of the Cholangio-MRI with image defect due to cholelythiasis, causing a stenosis of the common hepatic duct with retrograde dilatation of the biliary tract.

In the face of the clinical suspicion of acute cholangitis, ultrasound endoscopy was done and showed a compression of hepatic bile duct and microlithiasis located in the common bile duct. ERCP with sphincterotomy was performed, exceeding stenosis easily extracting thick, purulent bile and microlithiasis (Figure 2). A 12cm long and 10 French diameter plastic biliary stent was placed, to ensure the biliary draining until definitive surgery.

Three weeks later, surgery was performed, initially laparoscopic, observing inflammatory plastron on gallbladder and hepatic bile duct, with cholelithiasis and colecistocoledocal fistula, so it is converted to laparotomy. After gallblader and fistular resection, an hepaticoyeyunostomy was performed due to direct reconstruction of the bile duct were surgically impossible. Histology does not show malignancy.

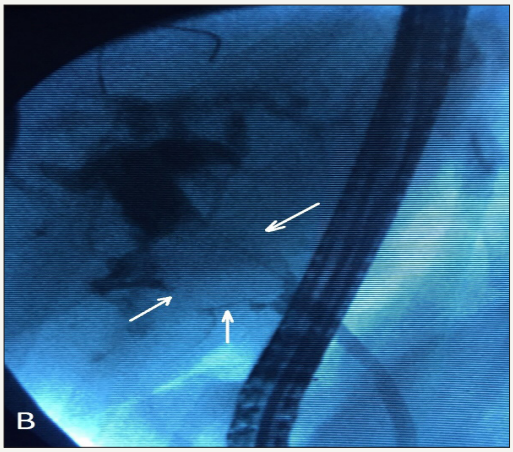

Figure 2: ERCP cholangiography that shows a cholelithiasis that compresses the hepatic bile duct.

Discussion

Mirizzi syndrome is caused by extrinsic compression of the biliary duct (hepatic bile duct or common bile duct) by an embedded lithyasis in the gallbladder neck or in the cystic duct [1]. It appears in 0 ' 7-1 ' 4% of patients during cholecystectomy and in the 0 ' 05-2 ' 7% of what they present cholelithiasis [2,3]. It is divided into type I, when there is extínseca compression of the bile duct by lithiasis, and type II, when there is cholecistocoledocal fistula added [4]. Types III to V were subsequently added, depending on the size of the fistula [5]. Our patient appeared to be a type I, although intraoperatively it was diagnosed as type II. The gallbladder cancer incidence is greater than in patients with cholelithiasis without this complication (27% versus 2%, respectively) [6]. The most characteristic clinical features are abdominal pain and jaundice, but there are not always presents. The hepatic function blood usually is abnormal [6].

To achieve a correct diagnosis is essential to avoid complications during the surgery, being occasionally the diagnosis performed during surgery [6]. Although abdominal ultrasound has limitations it is postulated as the first exploration and can guide the diagnosis. For its definitive diagnosis, ERCP [7] has been used, especially in type II Mirizzi, although it is now preferred to use Cholangio-MRI, since it has similar results [6,8]. ERCP is reserved for those situations, such as our patients, in which drainage of the bile duct is desired. The usefulness of the CT scan is not well defined, being able to assess the presence of cistocoledocal fistula or gallbladder cancer [6]. There is no data on ulstrasound endoscopy, but we believe it helps diagnosis, as well as detects small choledocholithiasis, avoiding unnecessary ERCP. In our patient was the technique that detected these small lithiasis, setting the indication of ERCP.

The treatment of choice is cholecystectomy but may be hampered by the anatomical variability and adhesions due to the maintained inflammation. There is controversy about conducting open or laparoscopic cholecystectomy in type I Mirizzi, with similar results [6]. In type II surgery is usually surgery is more complex, using alternatives techniques such as subtotal cholecystectomy, choledochoplastia with gallbladder tissue or hepaticoyeyunostomy with Roux-en-Y anastomosis [6,8-10]. ERCP is therapeutic tool as well. Its main indication is the decompression of the biliary duct until a cholecystectomy is performed, especially if it is not immediate as we do in our patient [6,9-11]. The lithotripsy or laser techniques guided with ERCP are becaming a new treatment with promising results [12,13].

Bouveret Syndrome

Clinical case

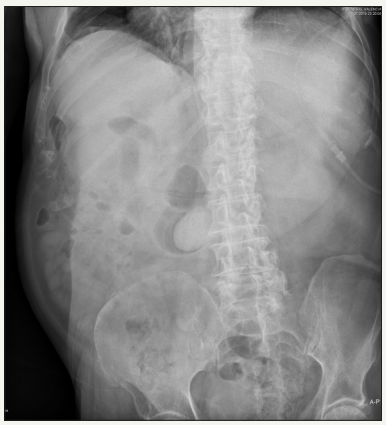

Figure 3: Abdominal X-ray with gastric dilatation and lithiasis located at the duodenum.

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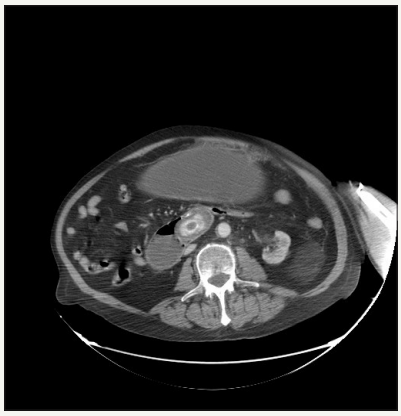

Figure 4: CT-scan confirmes the duodenal obstruction by 4 cm lithiasis.

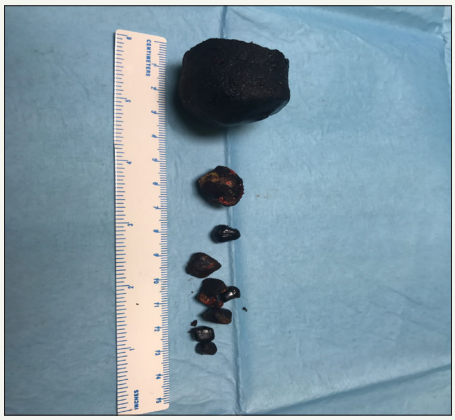

Figure 5: Multiple duodenal ithiasis extracted after surgery.

80-year-old male with recent hospital admission by cholelithiasis complicated with choledocholithiasis solved by ERCP spyncterotomy. The patiente was waiting at home for a delayed cholecystectomy. Two months later he was admitted again two by repeated postprandial vomiting. The abdominal X-ray showed a gastric dilatation with a lithiasis image located at the duodenum (Figure 3). The CT scan confirmed the presence of a 4cm lithiasis in duodenal bulb that occludes the duodenal lumen compatible with Bouveret syndrome (Figure 4). Gastroscopy was performed by observing a large-size lithiasis at the duodenal bulb, which protrudes through pylorus and cannot be extracted or mobilized. Finally, the patient was surgically intervened appreciating cholecystoduodenal fistula with the presence of several lithiasis in bulb and duodenum, which were extracted (Figure 5).

Discussion

Bouveret syndrome is a gallstone ileus cause and is produced by migration of lithiasis from gallbladder to duodenum through a fistula. It must be suspected in patients with cholelithiasis who present recurrent postprandial vomiting, because, as we appreciate in our patient, lithiasis can be embedded in the duodenum causing an obstructive ileus. Increased life expectancy, surgical delay and conservative management of gallstone pathology in elderly patients with impotant comorbidities will probably increase the incidence of this entity. Besides this group of patients have a high surgical risk. If Bouveret syndrome is suspected, an abdominal X-ray could achieve the diagnosis as seen in our patient but can be confirmed with CT scan or gastroscopy. The CT scan and the Cholangio-MRI usually helps to bring to the diagnosis of the cholecystoduodenal fistula, although sometimes they are only appreciated during the surgery as happens in our patient [14-17].

Surgery is the treatment of choice [16,17], but there are published clinical cases in which the obstructive gallstone ileum was solved by endoscopic techniques [18-21]. However, other papers have attempted to endoscopically extract the lithiasis without success [17,22]. In our case, endoscopy failed to extract or mobilize lithiasis, probably because it was attached to the region of the fistula. Even if lithiasis can be extracted by endoscopy, 91% of patients with Bouveret syndrome will end up requiring surgery [17]. After reviewing the bibliography, we observed that probably in multiple or large lithiasis (>2'5cm), the gastroscopy success rate is low. Furthermore, it is not always possible to appreciate lithiasis, it is not exempt from risks such as distal bowel section gallstone ileum and endoscopy does not solve the colecistoduodenal fistula, so we consider that the treatment of choice should be surgery [12,16,17]. However, endoscopic extraction may be considered as the first option in selected patients with few and small lithiasis or with high surgical risk. The addition of lithotripsy may increase the success rate [16,17,19,21], although this technique is not widely available.

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Conclusion

Mirizzi and Bouveret syndromes are uncommon but well-known entities that must be present in the differential diagnosis of benign pathology of the bile duct, since the clinical suspicion helps its early diagnosis. Since the treatment of both is eminently surgical and associated with complications, early diagnosis and treatment is required. It is also important to avoid, as far as possible, surgical delays of cholecystectomy since it increases the risk of presenting these pathologies.

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