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Case Report

Meckel's gallstone ileus

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Introduction

A 72-year-old male presented in our clinic with jaundice, dark urine, steatorrhea and unexplained weight loss. The patient had a medical history of ischaemic stroke, a melanoma and was known to have cholecystolithiasis. A computed tomography (CT) of the abdomen was performed, which showed aerobilia, distended small bowels and a gallstone impacted in the ileum. At surgery a gallstone was impacted in the ileum, at the neck of a Meckels diverticulum. The stone was removed and the patient had a good recovery. The impaction of a gallstone at the neck of a Meckels diverticulum is rare.

Keywords: Gallstone; Ileus; Computed tomography; Meckels diverticulum

Introduction

An uncommon cause of an ileus is obstruction by a gallstone. Gallstones cause 1-4 % of all mechanical ileus [1]. Of all non-strangulation ileus the gallstone accounts for up to 25% of all cases in patients over 65 years old [2]. This condition occurs when an inflamed gallbladder adheres to an adjacent bowel forming a biliary-enteric fistula. Usually a biliary-duodenal fistula occurs, which can allow gallstones to enter the gastrointestinal tract [3]. In rare cases the gallstone can erode through the gallbladder wall and large intestine wall and cause obstruction [4]. There have even been cases of a gallstone ileus developing after an Endoscopic retrograde cholangiopancreatography (ERCP), where the gallstone escaped the gallbladder through the common bile duct into the duodenum. In most of these cases the gallstone impacts in the terminal ileum [5]. However, we describe a case of a gallstone impacting at the neck of a Meckel's diverticulum.

Case presentation/case report

A 72 year old man was seen at our hospital with a history of 1 week of jaundice, dark urine, steatorrhea and 3 weeks of unexplained weight loss. He had a history of ischemic stroke and a melanoma 10 years earlier. His lab results showed a total bilirubin of 93 $\mu\text{mol/l}$ and a direct bilirubin of 81 $\mu\text{mol/l}$. In the differential diagnosis a malignancy was one of the possibilities, therefore a computed tomography of the abdomen was performed, which showed gallbladder stones, the largest of the stones measured 2,9 cms. There also was an irregular gallbladder wall, suggestive for cholecystitis or carcinoma. An MRI of the abdomen was performed to see if there are intra-hepatic gallstones. The MRI showed post-cholecystitis signs as well as signs of a gallbladder wall perforation and intra-ductal stones. The surgeons decided not to perform surgery since the patient had no more symptoms afterwards and had comorbidities. A CT-abdomen 2 months later showed no growth of the lesion and the suspicion of a carcinoma was dropped.

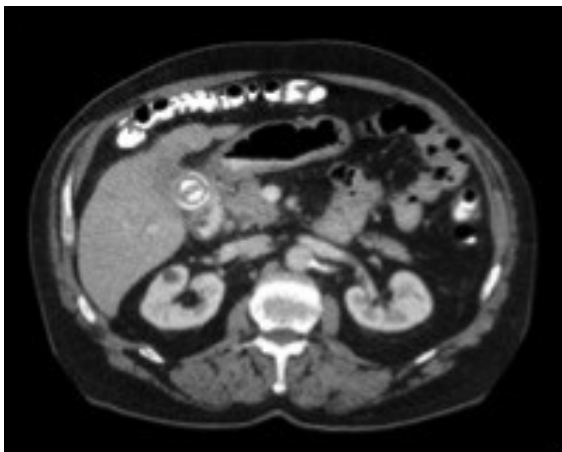


Figure 1. Axial CECT of the abdomen shows a large gallstone in the gallbladder.



Figure 2. Coronal CECT of the abdomen shows a large gallstone in the gallbladder.

Three weeks later, our patient reported to the emergency department with complaints of vomiting and jaundice, which had developed in four days. Physical examination revealed a distended abdomen without signs of peritonitis. Supine abdominal radiography showed distended small intestines. At this moment our differential consisted of obstruction either by extrinsic bowel lesion (e.g mass) or luminal occlusion (e.g a gallstone).

A CT-abdomen showed an obstructive ileus with a large gallstone present in the ileum. This was the same gallstone that was still in the gallbladder on the previous CT.

A laparotomy was undertaken as preferred by the operating surgeon. Milking of the gallstone towards the ileocecal valve immediately failed. It was found to be stuck in the neck of an inflamed and constricted-anti mesenteric diverticulum, which

was located about 12 inches from the ileocecal valve, unmistakably a Meckel's diverticulum. The stone was removed through an enterotomy at the diverticulum, after which a resection of the diverticulum was performed. During the procedure the right upper abdomen was not inspected for the fistula, as it would have no clinical consequences or significance.

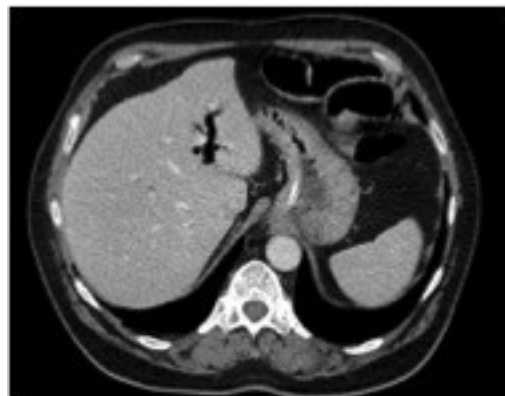


Figure 3. Axial CECT of the abdomen shows aerobilia.

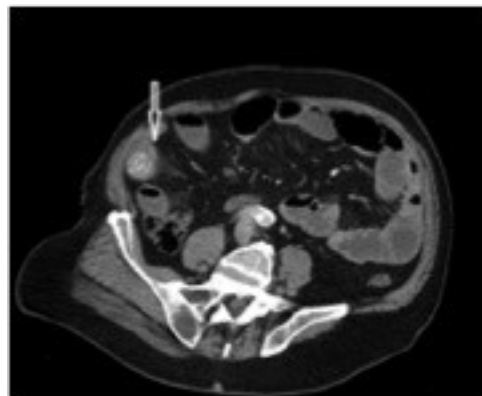


Figure 4. Axial CECT of the abdomen showing distended small bowels and a small configuration next to the gallstone originating from the small bowel (white arrow). This configuration was the Meckels diverticulum.



Figure 5. Reconstructed plane CECT of the abdomen showing the small configuration next to the gallstone originating from the small bowel (white arrow). This configuration was the Meckels diverticulum.

The postoperative recovery was uneventful and the patient was discharged in good clinical condition. It was decided not to perform a cholecystectomy in an elective setting. Pathology showed a diverticulum that was 1,5 cm wide and 2 cm deep with small intestinal mucosal cells, which could be in line with a Meckel's diverticulum.

Discussion

We found another case of a gallstone being impacted at the neck of a Meckel's diverticulum. This case was described by Y. Nakamoto et al. in 1998 [6].

They described a gallstone of 5 centimeters being impacted at the neck of a Meckel's diverticulum in the distal ileum.

Another case of a gallstone impacted at a Meckel's diverticulum was described by Maclean et al. in 2013. They described a case in which the gallstone impacted at a Meckel's diverticulum caused a perforation and peritonitis [7].

A minimal invasive laparoscopic approach for a gallstone ileus and resections of a Meckel's diverticulum have been described with acceptable conversion rates [3,7-10]. In conclusion, the impaction of a gallstone at the neck of a Meckel's diverticulum is extremely rare and has only been described a couple of times before. No other case has been described resembling our case.

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