A case of gossypiboma mimicking intrahepatic cholangiocarcinoma

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ABSTRACT

INTRODUCTION A gossypiboma refers to a cotton-based foreign body left inadvertently in the human body following a surgical procedure. Although a rare event, they tend to be found in the abdomen but few are known to be intrahepatic.

CASE HISTORY We report the case of a 44 year-old man who presented with recurrent episodes of jaundice and cholangitis, on a background of a right hepatectomy for hydatid cyst excision 20 years previously. This case was discussed at our hepatobiliary multidisciplinary team meetings on several occasions and a presumed diagnosis of intrahepatic cholangiocarcinoma was made. Biopsies of the mass had purely shown inflammation and remained inconclusive. It was decided that the patient should undergo a complete extended right hepatectomy with resection and reconstruction of the left branch of the portal vein. On attempting to obtain intraoperative frozen section specimens prior to resection, open excision revealed two large swabs encased in a calcified cavity. Removal of the swabs resulted in resolution of the mass and obstructive symptoms.

CONCLUSIONS Gossypiboma should be a rare differential diagnosis in all patients following a laparotomy presenting with obstructive symptoms, particularly in countries where strict surgical protocols may not be in place. This case also highlights the need to perform an intraoperative biopsy in any uncertain case of a liver lesion as we have shown that an extensive operation with its increased morbidity can occasionally be avoided.

KEYWORDS

Gossypiboma – Cholangiocarcinoma – Hydatid disease – Liver resection

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A gossypiboma (or textiloma) refers to a cotton-based foreign body left inadvertently in the human body following a surgical procedure. It is a rare event, with reported incidences of 1 in 1,000 to 1,500 in intra-abdominal open surgery and 1 in 3,000 in all surgical interventions.¹

With the advent of perioperative protocols, gossypibomas are a preventable occurrence. Gossypiboma has been classified as a 'never event' in the UK. The National Patient Safety Agency reported 86 cases during 2011 and 2012 but owing to its nature, there will be gross underreporting.²

Unsurprisingly, most gossypibomas are found in the abdomen. However, there are only eight cases with liver involvement reported in the literature, of which only two were intrahepatic.^{3,4}

We report the case of a patient who presented with recurrent episodes of jaundice and cholangitis, on a background of a right hepatectomy for hydatid cyst excision 20 years previously. This case was discussed at our hepatobiliary multidisciplinary team meetings on several occasions and a presumed diagnosis of intrahepatic cholangiocarcinoma was made.

Case History

A 44-year-old Algerian man was referred to our hepatobiliary department for consideration of a cholecystectomy after

recurrent episodes of jaundice and cholangitis. Having been diagnosed with a hydatid cyst of the liver at the age of 20 (in 1993), he had undergone an open right hepatectomy. He had no other medical history and made an uneventful postoperative recovery. He moved to the UK in 1998.

The patient presented elsewhere in September 2010 with epigastric pain, vomiting and jaundice. Computed tomography (CT) of the abdomen at this time showed a 6.5cm × 6.3cm × 5.6cm calcified lesion in segment 4 of the liver with a collection overlying it (Fig 1). There was noted common bile duct dilation and a suspected worm in the duct. A diagnosis of hydatid cyst recurrence was made.

When the patient was referred to our department in 2011, repeat CT noted no change in the lesion and a resolving collection. He was entirely asymptomatic at this point and annual review was arranged.

On further CT in 2012, it was noted that the mass had increased in size and there was marked biliary dilation. Furthermore, there was a new extrahepatic soft tissue abnormality. The patient's liver function had deteriorated, suggesting the presence of an intrahepatic cholangiocarcinoma.

Subsequent endoscopic retrograde cholangiopancreatography showed compression of the ducts at the liver hilum, suspicious of neoplastic change. Stent insertion failed. As a result, percutaneous transhepatic cholangiography (PTC)

Figure 1 Contrast enhanced abdominal computed tomography showing a solid lesion (arrow) in segment 4 of the liver close to the common bile duct and remnant right lobe of liver

Figure 2 The distorted core biopsy needles after attempting to sample the mass

was performed and a drain inserted in order to decompress the biliary tree. Biopsies taken at the time showed inflammation only.

After further multidisciplinary team discussion, a decision was made to perform a complete extended right hepatectomy with resection and reconstruction of the left branch of the portal vein. Laparotomy revealed an atrophic right lobe of the liver with a large, hard, irregular mass on the inferior aspect of segment 4. Given the previous inconclusive biopsy results, the senior surgeon (LRJ) decided to perform an intraoperative frozen section prior to resection.

On attempting to biopsy the mass, two needles bent on insertion owing to the hard surrounding calcified wall (Fig 2). An excision biopsy was then performed, which revealed 2 large intact swabs from the patient's previous surgery 20 years ago (Fig 3).

On removal of the swabs, the mass lesion disappeared completely and it was clear that the intrahepatic part of the bile duct had been completely severed at his initial operation. Over the years, a track had developed connecting the proximal with the distal part of the intrahepatic bile duct at the border of the packed surgical swabs. Our radiologist had managed to bridge this with an internal and external

Figure 3 Removal of the two retained surgical swabs from the cavity in the right lobe of the liver

Figure 4 Cavity following removal of retained swabs, with the percutaneous transhepatic cholangiography catheter still running through the cavity (arrow)

PTC. After removal of the swabs, the PTC catheter was seen running through the cavity into the hepatic duct and distal common bile duct (Fig 4). A cystojejunostomy was fashioned with a Roux-en-Y loop to cover the remaining cavity in order to prevent any bile leakage into the abdomen. Following surgery, the patient made a good recovery and CT a month later confirmed resolution of the hepatic mass with the PTC catheter removed.

Discussion

A literature review by Wan *et al* identified 254 gossypiboma cases documented over a 45-year period.⁵ The authors noted that the majority of gossypibomas were found in the abdomen (56%), pelvis (18%) and thorax (11%). They occur more in emergency cases, where swab counts may be neglected, and where patients are obese.⁶

The presenting symptoms of a gossypiboma can include mild abdominal discomfort, a palpable mass, pyrexia

secondary to infection⁷ or, as in this case, a pseudotumoural picture.⁸ Hepatic gossypibomas reported in the literature have been associated with causing jaundice and bile duct obstruction.⁹

Our patient had multiple investigations, all of which failed to diagnose the gossypiboma. CT can help confirm a diagnosis but there needs to be a high index of suspicion.⁹ Typical CT findings are of a thin or thick-walled mass, with a spongiform pattern and trapped gas bubbles.¹⁰ Magnetic resonance imaging may show varying signal intensity with a whorled appearance surrounded by a thick capsule, indicative of a gossypiboma. CT is the technique of choice for detecting gossypibomas.¹¹

With hepatic gossypibomas other factors need to be considered such as compression of the biliary tree, portal vein and impact on liver function. It is important that such complications are addressed and managed during surgery. In this case, the residual cavity created by the gossypiboma could be a source of bile leakage and the senior surgeon took the initiative to create a hepaticojejunostomy over the cavity, thereby minimising further morbidity and the need for future surgical intervention.

Conclusions

Gossypibomas in the abdomen can often create adhesions and become encapsulated, as in our case.⁷ Transmural

migration of gossypibomas within the intestinal lumen¹ have been reported in the literature but few have been described to be found encapsulated within the liver.

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