Management of the surgically unfit patient with symptomatic cholecystitis can be fraught with difficulty. We describe the case of one such gentleman in whom percutaneous transhepatic cholecystoscopy was used to completely fragment a large gallbladder calculus through the use of a nephroscope and Swiss lithoclast Master.

Introduction

The management of cholecystolithiasis in the surgically unfit patient through the use of endoscopic techniques can be both technically difficult and be associated with significant complications. We present the case of an elderly gentleman with previous episodes of biliary sepsis who was successfully managed through the use of percutaneous transhepatic cholecystoscopy.

Case Report

A 75 year old male nursing home resident with a history of biliary colic in whom ERCP and stenting was previously performed presented to the emergency department with hypotension, tachycardia and abdominal pain. His past medical history was significant for congestive cardiac failure, atrial fibrillation, hypertension, non-insulin dependant diabetes mellitus, congenital hypoplasias, dementia, depression and osteoarthritis. Physical examination revealed jaundice and right upper quadrant rebound tenderness with guarding and Murphy sign positive. Haematological investigations revealed evidence of infection accompanied by renal and hepatic dysfunction. The patient was diagnosed with septic shock which was biliary in origin. He was admitted to the Intensive Care Unit and managed symptomatically. Targeted hepatobiliary ultrasonound revealed a grossly abnormal gallbladder which was thick-walled and asymmetric.

A large gallstone was visible in the body of the gallbladder with a small amount of pericholecystic fluid. Multiple smaller stones were also visible in the gallbladder with moderate dilatation of the extrahepatic biliary tree, up to 0.8cm with evidence of cholecystolithiasis. The radiographic impression was of severe cholecystitis. Computed tomography revealed a dislodged biliary stent which was now visible in the distal CBD. Endoscopic retrograde cholangiopancreatography was undertaken which confirmed the presence of common bile duct stones. Following replacement of the CBD stent the patient made a good recovery. Due to the patients considerable co-morbidities he was deemed unfit for laparoscopic cholecystectomy, therefore it was necessary to explore alternative treatment options. He was referred to the department of urology for joint management of this complex case. Following an extensive review of the literature, a percutaneous approach to stone extraction was decided upon. This was to be carried out by a multidisciplinary team consisting of members of the departments of urology, interventional radiology and general surgery.

The patient was admitted the day before the procedure. Risk including CBD injury, duodenal perforation and sepsis were explained to the patient. All procedures were carried under sedation. An 18 Fr malecot catheter was placed into the gallbladder over a guidewire by the interventional radiologist. This catheter extended from the skin through the gallbladder and CBD to the duodenum. The patient then underwent percutaneous lithotripsy of the gallbladder calculus and common bile duct stones. The existing tract was dilated to 26Fr permitting the passage of a nephroscope. A 24Fr sheath was then inserted through which the gallbladder calculus was completely fragmented under direct visualisation using a nephroscope and Swiss lithoclast Master. All fragments were removed. The catheter was removed at the end of the procedure. The patient made an excellent post-operative recovery with no complications. He was discharged 5 days following his final procedure. The patient remains asymptomatic and stone free at 6 months follow-up. He will be reviewed in the outpatients department in 6 months.

Figure 1: Diagramatic representation of path of insertion of Malecot catheter

Figure 2: Day 1 post- CBD stone removal. Contrast is seen to flow freely into the duodenum

Discussion

Numerous cases of fluoroscopically guided percutaneous transhepatic cholecystolithotomy have been described in the high-risk surgical patient. Kim et al recently published results on a series of 64 patients with acute calculous cholecystitis who were deemed to have a high surgical risk. These patients underwent percutaneous transhepatic gallstone removal under fluoroscopic guidance without direct visualisation. Successful removal of gallstones was achieved in 94% of patients. Oshahi described the technique of percutaneous transhepatic cholecystic drainage (PTCCD) in a series of 53 patients with acute cholecystitis. In this series, stone removal was successful in 96% of patients. The recurrence rate was 2.5% at a follow-up period of 42 months.

In our case percutaneous transhepatic cholecystoscopic gallstone fragmentation with direct endoscopic visualisation is a safe and effective technique of managing symptomatic gallstones in the surgically unfit patient. Direct visualisation of gallstones through the use of a nephroscope is advantageous in ensuring success and safety of the procedure. However given the multidisciplinary approach required and the cost associated with this procedure other treatment options should be considered prior to embarking on this treatment plan.

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References