Ultrasound-guided endoscopic transgastric drainage of a post-traumatic pancreatic pseudocyst in a child

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ABSTRACT

Despite of a number of techniques in the armentarium of the paediatric surgeon, the management of pancreatic pseudocysts remains a challenge. We report on a case of a 5-year-old child with a post-traumatic pancreatic pseudocyst who was successfully treated with endoscopic ultrasound-guided transgastric approach. Endoscopic ultrasound-guided transgastric drainage of a pancreatic pseudocyst is effective and safe in children.

Key words: Pseudocyst, pancreas, ultrasound

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INTRODUCTION

Pancreatic pseudocysts (PPC) are not common in children and usually are secondary to blunt abdominal trauma.[1] Their management still remains a challenge for the paediatric surgeon. Traditionally the management of PPC is carried out by surgical procedures such as cyst gastrostomy or enterostomy.[2] Other modalities include percutaneous drainage under US guidance[3] and laparoscopic approach.[4] Endoscopic cystogastrostomy, either ultrasound-guided or no, is a relatively new technique in the treatment of PPC. On reviewing the literature, we could find 11 cases till now.[5-12]

We report a case of post-traumatic pseudocyst successfully treated with endoscopic ultrasound-guided transgastric drainage.

CASE REPORT

A 5-year-old boy was admitted in Emergency Department after an accidentally injury to the abdomen in the bed. On examination, the upper abdomen was mild distended and tender with guarding. His vital signs were normal and standard serum tests showed blood amylase 1194 mg/dl, lipase 5954 mg/dl and normal liver function test. An ultrasound examination of the abdomen with attention to the right upper quadrant revealed the presence of loculated fluid collection in the hilum of the liver measuring 2 x 5cm [Figure 1]. Management of the child included nil per mouth, total parental nutrition poor in lipids, antibiotics and rest. The patient had an uneventful course and discharged from the hospital on the day 15 with normal amylase levels and a normal ultrasound. After one and a half month, the patient was readmitted in the hospital with the complain of pain in the epigastrium. Serum tests showed blood amylase level of 830 mg/d, lipase 3610 mg/dl and urine amylase



Figure 1: Ultrasound showing a PPC in the hilum of the live measuring 2 x 5 cm

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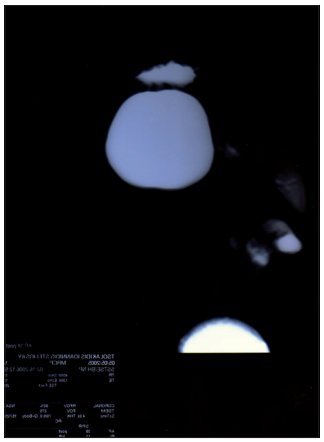


Figure 2: Magnetic resonance cholangiopagreatography (MRCP) showing a pancreatic cyst in the attachment with the choledochal duct, the stomach and the duodenum

2718 mg/dl. An ultrasound showed a fluid collection in the lesser sac measuring 6 cm. A magnetic resonance cholangiopagreatography (MRCP) showed a pancreatic cyst in the attachment with the choledochal duct, the stomach and the duodenum [Figure 2]. On the fourth day of hospitalization, endoscopic transgastric drainage of the cyst was decided under general anaesthesia. Under general anaesthesia, a flexible gastroscopy was performed. The PPC was visualized under Doppler ultrasound guidance and a puncture was performed in the posterior wall of the stomach by using a diathermy needle knife in the most prominent site of the bulge. A guide wire was then inserted through the needle into the pseudocyst cavity and the knife was withdrawn. A double pigtail 8Fr stent was inserted into the cyst cavity over the guide wire. The cyst resolved almost immediately. Postoperative period was uneventful and the patient was discharged on the day 3. The stent was removed after 3 months of endoscopic procedure. Patient is doing well at 24 months follow-up without any recurrence and follow-up with ultrasound revealed pancreas to be normal.

DISCUSSION

A PPC is usually a complication of blunt abdominal trauma in 56% of cases in children.[10] Many of them will resolve spontaneously with conservative treatment. The size of the cyst is a good predictor of outcome: cysts less than 4 cm in size will resolve in 90% of cases, while those with size greater than 6 cm have only 20% to be resolved.

The current management for PPCs in children is predicated on adult techniques and includes open, percutaneous, laparoscopic and endoscopic drainage. Surgical cystogastrostomy is the standard method of treatment for PPC,[13] with short hospitalization and low risk of recurrence. Percutaneous drainage is a less invasive method frequently performed in the past, but there is a risk of a pancreato-cutaneous fistula,[9] which may require a major reconstructive operation. Thus, percutaneous drainage is reserved for immature or infected cysts and unstable patients[9] Laparoscopic approach is an alternative new technique to open cystogastrostomy for the minimally invasive management of PPCs in the paediatric population. However, only three cases are referred in the literature,[4,14,15] and therefore, more studies are needed to establish their effectiveness.

Endoscopic transmural drainage of PPC began in 1980 and most reports are referred to the adults.[10] The most important prerequisites for successful outcome include a cyst situated in direct apposition to either the stomach or duodenum, a visible bulge in the gastrointestinal lumen and a cyst wall less than 1 cm thick.[9] The complications of endoscopic drainage of PPCs include recurrence, stent occlusion, stent dislodgment, technical failure to drain the cyst, bleeding, gallbladder puncture, intestinal perforation, infection, stent leak and recurrence of PPC.[10,16] It is important to stent all the cystenterostomies to avoid recurrence[9] and use a double pigtail stent to avoid dislodgment.[11]

This case shows that endoscopic ultrasound-guided transgastric drainage of PPC is an effective and safe approach in children.

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