TRAUMATIC PANCREATIC PSEUDOCYSTS IN CHILDREN

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MJAFI 1999; 55 : 353-355

KEY WORDS : Pancreatic pseudocyst; Paediatric trauma

Introduction

Hidden by its retroperitoneal location, pancreas has in the past been a somewhat mysterious organ. The rapid development of noninvasive imaging has led to cysts of the pancreas to be recognized with increasing frequency. Unlike in the adults pseudocysts of the pancreas are rarely encountered in children. Most commonly, pancreatic pseudocysts in children are due to trauma and not the sequel of acute pancreatitis. Two cases of pancreatic pseudocysts in children treated by internal drainage are reported.

Case Report

Case No-1

A three-year-old boy was admitted with upper abdominal pain, vomiting and anorexia of 10 day's duration. According to the mother the child was not keeping well for the previous one month with vague symptoms and listlessness following a fall from the cycle. On examination the child had normal milestones, was well nourished, afebrile but irritable. There was a 10-cm by 10-cm globular lump in the epigastrium. It was firm, tender with smooth surface, ill-defined margins and was immobile. Laboratory investigations including serum amylase were within normal limits. Ultrasonography showed a large cystic structure measuring 8.1 cm x 8.0 cm in the region of the left lobe of the liver and it was reported

as a left lobe liver abscess (Fig 1). Laparotomy, however revealed a large, thick walled pancreatic pseudocyst occupying the lesser sac, projecting well beyond the lesser curvature and abutting on to the liver. A posterior cyst-gastrostomy with a stoma of 2.50 cm was done. He had an uneventful post-operative recovery. Repeat ultrasonography done four weeks later showed complete resolution of the pseudocyst (Fig 2).

Case No 2.

A two-year-old boy presented with history of upper abdominal pain, vomiting, diarrhoea, anorexia and fever of three week's duration following trauma to the abdomen due to fall on to a rock. The child was under treatment for gastroenteritis and was referred to the surgeon for lump in the abdomen. He was emaciated, dehydrated and febrile. There was a 10 cm by 10 cm, firm, globular, tender lump in the epigastrium. Ultrasonography showed a 9.1-cm x 8.1-cm cystic mass located behind the stomach (Fig 3). Upper GI contrast studies were omitted since patient was taken up for surgery without delay. Laparotomy confirmed the presence of a large pancreatic pseudocyst in the lesser sac. A posterior cyst-gastrostomy with a 2.50-cm stoma was performed. Patient had a stormy post-operative period but recovered completely.

Discussion

Pancreatic pseudocysts are by far the commonest cysts of the pancreas constituting 70 percent of all pancreatic cysts. Blunt trauma of the abdomen is the cause of pseudocyst formation in the majority of cases

Fig. 1 : Ultrasonograph of upper abdomen showing large hypoechoic area in front of the pancreas in case no. 1.

Fig. 2 : Ultrasonograph of upper abdomen after cyst-gastrostomy in case no. 1

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Fig. 3: Ultrasonography of upper abdomen showing large hypoechoic area in front of the pancreas in case no. 2

in children [1]. Both cases in our series were a sequel of trauma. Pancreatitis is an uncommon cause of pseudocyst in children [1]. Posttraumatic pseudocysts tend to occur in the body and tail reflecting the fact that most ductal injuries occur in the body of the pancreas as it crosses the vertebral column [2]. However, in children pseudocysts form commonly due to injury to the gland substance rather than the ducts. Pancreatic pseudocysts occurring after acute pancreatitis can be located anywhere between mediastinum and scrotum because of the necrotizing effect of pancreatic enzymes. In case of traumatic pancreatic pseudocysts trauma is often trivial and not reported by the patient or parent,

Forty years ago it was believed that pancreatic pseudocysts rarely resolved spontaneously. Today, with the advent of imaging techniques it is known that 42 to 57 percent of pseudocysts may resolve without surgical intervention [1,3]. Traumatic pseudocysts that follow peripheral duct injury may resolve spontaneously whereas those associated with distal injuries can be treated by percutaneous aspiration. However, proximal ductal injuries require internal drainage [4]. ERCP is being done increasingly to define the anatomy of duct injuries and thereby lay down an algorithm for management of traumatic pseudocysts [5].

Complications may occur in as many as 25% of cases of pseudocysts during conservative management

in children and therefore, children should undergo internal drainage earlier than in adults (3 to 4 weeks vs 6 weeks) [1]. In our cases surgery was done promptly as conservative management involves prolonged hospital stay and total parenteral nutrition whereas internal drainage is safe, effective and inexpensive.

Cyst-gastrostomy, first performed by Juarz in 1931 continues to be a popular and highly effective form of internal drainage in children as was done in our cases [6,7]. The need for a large stoma to prevent premature closure and meticulous haemostasis of the suture line to ward off post-operative haemorrhage needs to be emphasized.

However, cyst-gastrostomy is not the appropriate surgery for giant pseudocysts because it fails to provide dependent drainage for a large cyst cavity [8].

Lately, stomatostatin, and its long acting analogue, octreotide have proved useful in the treatment of pancreatic pseudocysts in children [9]. Percutaneous catheter drainage using a pig-tail catheter under ultrasound or CT guidance is being increasingly used for external drainage of pseudocysts in children with good results [10]. However, if a large duct has been demonstrated to be disrupted, internal drainage is indicated. Moreover, catheter drainage may require repeated punctures resulting in infection of the cyst and prolonged hospitalization.

In our view, cyst-gastrostomy is a safe and effective operation for pancreatic pseudocysts in children as it avoids the high cost of prolonged hospital stay, chances of complications and recurrence entailed by conservative management and percutaneous catheter drainage.

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