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Original Research Paper

General Surgery

COMPLICATED PSEUDO CYTS AND THEIR MANAGEMENT: SURGICAL INDICATIONS AND PROGNOSIS: A CASE SERIES

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ABSTRACT Pseudocysts are formed after acute as well as chronic pancreatitis but more common after acute exacerbations of chronic pancreatitis than acute pancreatitis. The prevalence of pancreatic pseudocysts in acute pancreatitis has been reported to range from 6% to 18.5% . The prevalence of pancreatic pseudocysts in chronic pancreatitis range 20% to 40% . The incidence of pseudocyst is low ranging from 1.6 to 4.5% or 0.5 to 1 per 100000 adults per year. Pseudocysts are known for resolution and complications too. but when pseudo cysts gets complicated like abscess , rupture etc. it results in increased moprtality and morbidity of the patients. Here in this article we describe our experience of predicting and treating our patients with complicated pseuodo cyts .

KEYWORDS : Ultra Sound Abdomen, Contrast Enhanced Computerized Tomography, Saio , Common Bile Duct, Portal Hypertension.

INTRODUCTION:

Pseudocysts are formed after acute as well as chronic pancreatitis but more common after acute exacerbations of chronic pancreatitis than acute pancreatitis. There is lack of data containing randomized case-control studies, but numerous case series and reports indicate that pancreatic injury leads to pseudo cyst formation. The prevalence of pancreatic pseudocysts in acute pancreatitis has been reported to range from 6% to 18.5% [3, 4]. The prevalence of pancreatic pseudocysts in chronic pancreatitis range 20% to 40% [5}. The incidence of pseudocyst is low ranging from 1.6 to 4.5% or 0.5 to 1 per 100000 adults per year [7, 8]. Most of pseudocysts goes uncomplicated and resolves over a period of time. But only when these pseudo cysts becomes complicated they pose problems. It is difficult to diagnose but it definitely important to diagnose and treat complicated pseudocysts at an appropriate time to reduce mortality and morbidity. Here we focus on the discussion and conclusion of diagnosing cases of complicated pseudocysts and their management.

CASE REPORT:

CASE 1 : 28 Year, old male , with 2nd attack of mild acute pancreatitis, presented with persistent pain after 1 week, inability to tolerate feeds even after 1 week of conservative management. P/A : Abdomen is distended with sluggish bowel sounds. Erect x ray showed paralytic ileus. Cbc, lft were mildly deranged. Cect abdomen repeat showed presence two complex pseudo cysts with thick internal septations, at the splenic hilum, pelvic cavity.

Explorative laparotomy was done which showed small bowel obstruction secondary to infected pelvic pseudocyst. 750 ml of pus was drained. Anterior wall of pseudocyst was formed by bladder, posteriorly by sacrum. Patient was discharged after 4 weeks with uneventful recovery.

CASE2: 38 Year old male with acute pancreatitis treated conservatively for 3 weeks with symptom resolution to recur back on 4th week with a sudden (3 days) onset of epigastic mass of 20 *25cms to cause intolerable abdominal pain , dyspnoea, hematemesis and deep jaundice. Cect abdomen showed huge pseudocyst of 30 cms with pus inside with PHT with CBD compression. Explorative Laparotomy showed large infected pseudocyst causing compression over CBD and Portal Vein to cause jaundice and PHT. External drainage was done. Post op bilirubin levels kept on raising from 10 to 18 mg/dl. Pepeat CT showed one more 5cm infected pseudocyst over the head of pancreas. USG guided aspiration of relieved the pressure over CBD which led to reduction of bilirubin to 3mg/dl post operatively.

CASE3: 42 yr old with new episode of acute pancreatitis with persistent low grade fever, persistent abdominal pain, raised TLC after 2 weeks of conservative management presented with sudden onset of abdominal pain. Fever, abdominal distension, jaundice with a hemodynamic stability. USG and CECT showed free fluid with internal sepatations. Explorative laparotomy showed pseudocyst of the tail of pancreas with damaged anterior wall with pyoperitoneum. External drainage was done and discharged after 4 wks of hospital therapy.

CASE4: 47yr old male with deep jaundice with new onset of hematemesis with previiiiousss attack of pancreatitis 2 months ago, with a soft, non tender abdomen without any organomegaly. USG and CECT showed multiple pseudocysts of 5 to 3 cms each present all over the pancreas with compression of the CBD and PORTAL VEIN producing PHT and CBD dilatation. Explorative laparotomy with roux-y drainage of non infected pseudocysts were done with uneventful recovery.

CASE5: 38yr old male with infected distal pancreatic pseudocyst, for whom external drainage has been done with uneventful recovery and discharge. Presented after his treatment for left leg fracture with sudden onset of epigastric mass with pus pointing out with low grade fever and malaise. CECT confirmed a large infected head pesudocyst with communication with infected distal pancreatic pseudocyst. Explorative laparotomy showed communicated infected pseudocyst which was drained externally.

DISCUSSION:

The first description of pseudopancreatic cyst dates back almost two and half centuries to 1761 A.D. by Cannon et al. [1]. The management of cystic changes of the pancreas is an old problem.

Eugene Opie, at the beginning of twentieth century, was the first to distinguish true pancreatic cysts, which are, by definition, lined by epithelium, from pseudocysts, which are surrounded by a wall composed of collagen and granulation tissue.

More than two centuries after the first description, some clear consensus and guidelines were evolved in the Atlanta classification of 1993 [2].

The Atlanta classification consists of four distinct disease entities: Acute fluid collections that develop early in the course of acute pancreatitis and do not yet have a cyst wall; Acute pancreatic pseudocysts, which arise as sequelae of acute pancreatitis or trauma, and whose wall consists of granulation tissue and extracellular matrix; Chronic pancreatic pseudocysts, which arise as sequelae of chronic pancreatitis and are likewise surrounded by a wall;

Pancreatic abscesses, which are intraabdominal collections of pus immediately adjacent to the pancreas, without any large areas of necrosis.

Acute fluid collections, pancreatic pseudocysts, and pancreatic abscesses can be distinguished from one another by the history, imaging studies of the wall of the abnormality and its contents, and, if necessary, a needle aspiration of the content [2].

Pancreatic pseudocyst develops in both acute and chronic pancreatitis. It is an entity likely to either remain asymptomatic or develop devastating complications. Despite being diagnosed easily, treatment exercise is still at crossroads whether in the form of internal or external drainage or endoscopic, laparoscopic, or open intervention with a good radiological guidance. The therapeutic dilemma whether to treat a patient with a pancreatic pseudocyst, as well as when and with what technique, is a difficult one.

D'Egidio and Schein, in 1991, described a classification of pancreatic pseudocyst based on the underlying etiology of pancreatitis (acute or chronic), the pancreatic ductal anatomy, and the presence of communication between the cyst and the pancreatic duct and defined three distinct types 2 International Journal of Inflammation of pseudocysts [9].

Type I, or acute "postnecrotic" pseudocysts that occur after an episode of acute pancreatitis and are associated with normal duct anatomy, rarely communicates with the pancreatic duct. Type II, also postnecrotic pseudocysts, which occurs after an episode of acute-on-chronic pancreatitis (the pancreatic duct is diseased but not strictured, and there is often a duct-pseudocyst communication). Type III, defined as "retention" pseudocysts, occurs with chronic pancreatitis and is uniformly associated with duct stricture and pseudocyst duct communication.

Another classification, based entirely on pancreatic duct anatomy, was proposed by Nealon and Walser [10].

Type I: normal duct/no communication with the cyst. Type II: normal duct with duct-cyst communication. Type III: otherwise normal duct with stricture and no duct-cyst communication.

Type IV: otherwise normal duct with stricture and duct-cyst communication.

Type V: otherwise normal duct with complete cutoff. Type VI: chronic pancreatitis and no duct-cyst communication.

Type VII: chronic pancreatitis with duct-cyst communication [10].

COMPLICATIONS:

Pancreatic pseudocyst needs close followup to early detect the most dreadful complications, which may be devastating if it remain unrecognized for long.

Infection: Infection occurs either spontaneously or after therapeutic or diagnostic manipulations. While infected pseudocyst can initially be treated with conservative means, a majority of patients will require intervention. Traditionally, surgery has been the preferred modality but endoscopic treatment is gaining acceptance. An external drainage may be necessary in selected situations such as when there is evidence of gross sepsis and the patient is too unstable to undergo surgical or endoscopic drainage .

Hemorrhage: Hemorrhage can greatly complicate the course of a pseudocyst and can be devastating . The morbidity and mortality is very high because it can appear without warning and is usually due to erosion of a major vessel in the vicinity of the pseudocyst. If not recognized immediately, life of the patient may be jeopardized. Interventional radiology can play an invaluable role both in locating the source of bleeding and in embolisation of the bleeding vessel [7]. Without prior information of the bleeding point, surgical exploration can be hazardous and challenging.

Splenic Infarction And Thrombosis: Complications of pseudocyst include massive haemorrhage into thepseudocyst, sepsis with splenic infarction, and splenic vein thrombosis. The diagnosis of intrasplenic pseudocyst, based on clinical findings alone, is difficult to arrive at but should be suggested by the presence of a mass in the left upper quadrant. Sonography and computerized axial tomography may be particularly helpful in confirming splenic involvement. Selective celiac arteriography should be performed whenever splenic involvement is suggested in order to confirm the diagnosis and to search for pseudoaneurysm formation. Urgent surgical intervention is usually warranted in view of the high incidence of serious complications and the propensity toward rapid clinical deterioration. Resection of the pseudocyst by splenectomy and distal pancreatectomy is the treatment of choice [8].

Rupture: rupture of a pseudocyst can have either a favourable or an unfavourable outcome, and this depends on whether it ruptures into the gastrointestinal tract, into the general peritoneal cavity, or into the vascular system. Rupture into the gastrointestinal tract either results in no symptoms or leads to malaena or hematemesis that usually requires urgent measures. Rupture into the general peritoneal cavity results in features of peritonitis and occasionally haemorrhagic shock. Emergent surgical exploration is usually required. While an internal drainage should always be aimed for, usually a thorough abdominal lavage and external drainage are all that can be achieved safely .

Biliary Complications: biliary complications occur due to a large cyst in the pancreatic head region obstructing the common bile duct and resulting in obstructive jaundice. Therapeutic endoscopy with short-term biliary stenting is valuable in this situation. It can be retained until either the pseudocyst resolves or is treated by intervention [5].

Portal Hypertension: portal hypertension can result from compression or obstruction of the splenic vein/portal vein either by the cyst alone or by the cyst in conjunction with underlying chronic pancreatitis. In this situation, surgery appears to be the only treatment modality available, and an appropriate surgical procedure can effectively treat this form of portal hypertension [4].

Gastric Outlet Obstruction: pseudocysts around the head of

the pancreas are likely to cause gastric outlet obstruction. Once the features of gastric outlet obstruction develop, it needs certainly intervention and decompression or drainage of the cyst.

Diagnostic techniques :

A variety of diagnostic tools including CT scanning, transcutaneous and endoscopic ultrasound, ERCP and cyst aspiration, chemistry and cytology are used for the diagnostics of pancreatic pseudocysts. According to the Atlanta classification a pseudocyst is characterized by presence of a defined wall of fibrous or granulomatous tissue whereas the acute fluid collection lacks that boundary. However, a late pancreatic necrosis may also have a partly organized encapsulated morphology and differentiation becomes more difficult [2]. On CT imaging the capsule or wall of a pseudocyst shows evidence of contrast enhancement. A necrosis, particularly an infected one, can be presumed by non-enhancing zones or a heterogeneous pancreas seen on CT. However, the final diagnosis should correlate with the clinical condition of the patient [8]. In conclusion, employing imaging techniques, pseudocyst characteristics like size, location, wall thickness and septa can be detected. However, approximately 10% of pancreatic pseudocysts can have ill-defined features that overlap with the characteristics of cystic tumours [9].

Treatment:

Pancreatic pseudocysts show a wide variety of clinical presentations ranging from completely asymptomatic lesions to multiple pseudocysts with pancreatic and bile duct obstruction. The latter may require immediate endoscopic or surgical intervention to prevent secondary complications. Indications for immediate or elective interventions are summarized in Table I [2]. The management of pseudocysts also depends on the aetiology. Cystic pancreatic lesions, arising after an episode of acute pancreatitis, may resolve without treatment over a period of 46 weeks, whereas in chronic pancreatitis spontaneous pseudocyst resolution occurs rarely as maturation of the cyst wall is already complete [11]. The probability of spontaneous resolution ranges widely from 8% to 85% [3], depending on the aetiology, the localization and, predominantly, the size.

According to Warshaw and Rattner, a pseudocyst is unlikely to resolve spontaneously if:

it persists for more than 6 weeks, b) chronic pancreatitis is evident, c) there is a pancreatic duct anomaly (except for acommunication with the pseudocyst) or d) the pseudocyst is surrounded by a thick wall [4]. Studying 92 patients with chronic alcoholic pancreatitis, Gouyon and co-workers reported a spontaneous regression rate of 25.7%. However, pseudocysts /4 cm and those localized extrapancreatically were found to represent predictive factors for persistent symptoms and/or complications [4].

Surgery : Despite recent developments in minimally invasive techniques and further progress in CT- and ultrasound-guided therapy, surgical drainage is still a principal method in the management of pancreatic pseudocysts.

It traditionally includes internal and external drainage and excision.

A surgical approach can be indicated in patients with:

- complicated pseudocysts, i.e. infected and necrotic pseudocysts;
- pseudocysts associated with pancreatic duct stricture and a dilated pancreatic duct;
- suspected cystic neoplasia;
- coexistence of pseudocysts and bile duct stenosis; and
- complications such as compression of the stomach or the duodenum, perforation and haemorrhage due to erosion of arteries or pseudoaneurysms [5].

Timing of surgical intervention depends on maturation of the cyst wall. In chronic pancreatitis pseudocysts can be treated without any delay under the assumption that maturation of the cyst wall has already taken place and can thus withstand sutures, whereas optimal timing in acute or traumatic pseudocysts is more difficult [6]. Surgical internal drainage is the method of choice for uncomplicated mature pseudocysts.

Depending on the topographic anatomy, pseudocystogastrostomy is done for cysts directly adherent to the posterior wall of the stomach. Small (B/4 cm) pseudocysts in the head and the uncinate process of the pancreas are eligible for pseudocystoduodenostomy and can be performed for all other cysts including extremely large (/15 cm) cysts [3]. There is controversy as to whether pseudocystogastrostomy are equivalent in their outcome: pseudocystogastrostomy has been reported to be simple, quick and less prone to infections, but tends to be associated with more frequent upper gastrointestinal bleedings. Pseudocystojejunostomy seems to be more popular and results are somewhat better than for pseudocystogastrostomy [12]. Newell et al. [3] found no significant difference in cyst recurrence, morbidity or mortality between cystogastrostomy and cystojejunostomy but the duration of the operation and blood loss were less after cystogastrostomy.

External drainage is indicated for immature cysts with infected contents and for ruptured cysts. It hardly ever applies to patients with chronic pancreatitis unless the pancreatic cyst has developed after a superimposed attack of necrotizing pancreatitis [3].

CONCLUSION:

Pancreatic pseudocysts are a known complication of acute and chronic pancreatitis. Chronic pseudocysts over 8 weeks are less likely to resolve spontaneously and, as the risk of complications increases with time, treatment of large pseudocysts (/5 cm) should not be postponed. Introduction of new and sensitive imaging techniques permits the detection of more pancreatic cystic lesions with better evaluation of adjacent structures.

Surgery is the traditional modality for treating pancreatic pseudocysts, with high success rates and low morbidity and mortality, and it still plays an important role in therapy.

IMAGES:

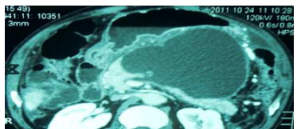

Figure 1:Complexpseudocyst

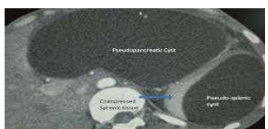

Figure 2 : Large pseudocyst

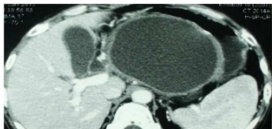

Figure 3: Thick capsule of pseudocyst

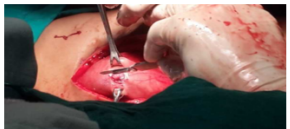

Figure 4: intraoppicture

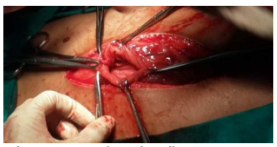

Figure 5: - opened anterio wall

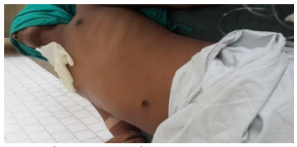

Figure 6: pre op picture .

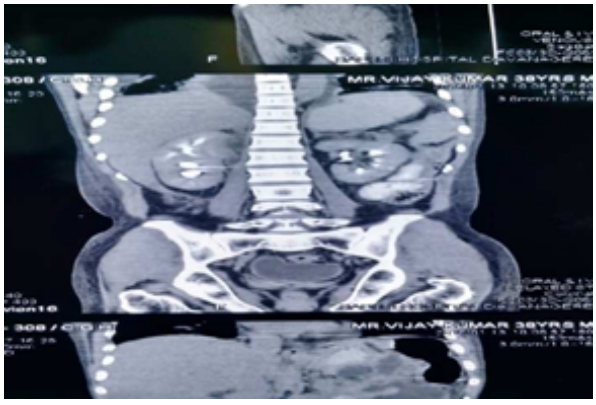

Figure 7: cect showing pelvic pseudo cyst.

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