ORIGINAL ARTICLE

Pancreatic Pseudocyst in Ile-Ife Revisited: 5 More Cases

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ABSTRACT

Background: *Pancreatic pseudocyst is a major health problem in the developed countries and its incidence is noted to be getting higher among the Caucasians as a result of better diagnostic techniques. This retrospective study was done to review the cases of pancreatic pseudocyst seen between 1991 and 1999 at the Obafemi Awolowo University Teaching Hospitals, Ile-Ife, Nigeria. The 5 cases seen over this period of study were used to illustrate its rarity.*

Method: *The case notes of the patients managed for pancreatic pseudocyst during the period under review were studied and analysed to evaluate the different modes of presentation, investigations done and the modes of treatment.*

Results: *The age range of the patients varied between 23 and 70 years with three of them being male while two were female. The most common presenting symptom and sign were abdominal pain and abdominal mass. Abdominal ultrasonography, chest X-ray, upper gastrointestinal endoscopy and laboratory blood tests were the investigative procedures carried out. The treatment modalities were either conservative or surgical (operative).One patient had spontaneous resolution of the pseudocyst, 2 had external drainage while the remaining 2 had cystogastrostomy.Two of the patients responded well to treatment and were being followed up in the Surgical Out Patient Clinic, one died within 24 hours of surgery while the other developed diabetes mellitus 3 months post surgery and was referred to the physicians for follow-up.*

Conclusion: *Though pancreatic pseudocyst remains uncommon in Nigeria, ultrasonography can play an essential role in assisting diagnosis while successful management of this condition is still possible in the absence of current endoscopic techniques of drainage.*

KEYWORDS: *Pancreatic pseudocyst; pancreas; ultrasound; Ile-Ife.*

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INTRODUCTION

Pancreatitis and its complication,pancreatic pseudocysts are uncommon clinical entities encountered in surgical practice inNigeria[1-3]. Pancreatic pseudocysts usually follow acute pancreatitis or trauma with the commonest aetiologic factor being alcoholism[4]. They can present in various ways and many times with non-specific clinical features making the risk of misdiagnosis very high especially in our environment. Patients that present with clinical features suggestive of pancreatic pseudocysts are further evaluated by carrying out such investigations like serum amylase, barium meal, ultrasonography, endoscopy and even computerized tomography.

The natural history of this disease condition has become clearer with the advent of ultrasonography (USS) and computerized tomography (CT)[5].

As noted in the literature, the management of pancreatic pseudocysts demands a good understanding of the natural history and an appreciation of the strength and weaknesses of the treatment options available[6]. However, no single technique offers the desired combination of 100% success and no complication[7].

This paper reports the cases treated in this hospital during the period of study to highlight the continual rarity and the possibility of diagnosing this disease problem with the aid of strong clinical suspicion and USS. The methods of treatment utilized are also discussed.

MATERIALS AND METHODS

The case notes of all patients admitted and treated for pancreatic pseudocyst in our hospital between 1991 and 1999 were retrieved and studied. The vital data retrieved from the case notes included age, sex, presenting symptoms and signs, any history of

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alcohol ingestion or trauma, preoperative investigations carried out and their results. Other data extracted from the case notes were the mode of treatment i.e. conservative or surgical, type of surgery, operative findings and follow up. These were analysed and discussed.

RESULTS

Five patients were managed during the period under review. The ages of the patients ranged from 23 to70years. Three patients were male while two were female. Table I illustrates the presenting symptoms and signs of the individual patients. All the patients presented with abdominal pain and abdominal mass. The pain was localized to the epigastrium, dull aching in character while the mass was commonly palpable tender and localized to the epigastrium and the left hypochondrium. Significant weight loss was recorded in 3 of the patients while 2 patients had nausea and vomiting. Ascites was demonstrated by shifting dullness in 2 patients. Three patients had fever. Only one of our patients, the youngest, had a history of trauma to the abdomen. Two patients had history of significant alcohol consumption.

The preoperative investigations carried out are in Table II. Three patients had moderate to severe anaemia with otherwise normal blood film. Leukocyte counts were all within normal range. The serum electrolyte and urea levels were also normal. Serum amylase could not be estimated in any of the patients because of lack of reagent. Upper gastrointestinal endoscopy done in two of the patients demonstrated extrinsic compression of the stomach by the pseudocyst. Chest X-ray was done in all the patients. The findings were normal in 3 patients while two of the patients had pleural effusion, which was bilateral in one of them and unilateral in the other. Barium meal was not done in any of the patients because the fluoroscopy machine was faulty at the particular times during which these cases presented. Abdominal ultrasonography done in all patients but one revealed well-circumscribed unilocular sonolucent masses of different sizes posterior to the stomach.

Table III summarizes the surgical management and the operative findings. Only one of the patients had spontaneous resolution which was diagnosed by cessation of symptoms and signs and negative follow-up ultrasound findings. He was discharged home after two weeks on admission. The remaining 4 patients had surgical intervention. Two of these had cystogastrostomy - Jurasz procedure while the other 2 had external drainage of the cysts. The cysts mostly involved the body and tail of the pancreas and were unilocular except in one case. Cystic contents ranged from 400 to 2500cc. One of the two patients that had external drainage of the pseudocyst had a recollection of the fluid and re-presented in the hospital seven weeks postoperatively; the other one died 24hours postoperatively. Out of the two patients who had cystogastrostomy, one developed features of diabetes mellitus three months postoperatively and was thereafter referred to the physicians for follow-up; the other patient was discharged to the surgical outpatient department and is doing well.

Table I. Patients' presenting symptoms and signs against age and sex.

Patient's serial number	Age (years)	Sex	Abdominal pain	Abdominal mass	Nausea/ vomiting	Fever	Weight loss	Ascites
1	56	Female	+	+	+	+	-	-
2	48	Male	+	+	-	+	+	+
3	70	Male	+	+	-	-	+	+
4	55	Male	+	+	+	+	-	-
5	23	Female	+	+	-	-	-	-

+ implies 'present' - implies 'not present'

Table II. Preoperative Investigations

Patient's serial number	PCV (%)	WBC count/cm^3	Chest X-ray	Abdominal Ultrasound	Upper GI Endoscopy	Serum Electrolytes & Urea
1	28	5500	Normal	+	-	Normal
2	31	8200	Bilateral pleural effusions	+	+	Normal
3	28	6900	Unilateral pleural effusion	+	-	Normal
4	29	5400	Normal	-	+	Normal
5	34	4300	Normal	+	-	Normal

+ implies 'done' - implies 'not done'

Table III. Patient's treatment and outcome

Patient's serial number	Age (years)	Sex	Treatment option	Outcome
1	56	Female	Conservative management	Did well
2	48	Male	External drainage	Died 24 hours postop.
3	70	Male	External drainage	Cyst recollected
4	55	Male	Cystogastrostomy	Developed diabetes mellitus
5	34	Female	Cystogastrostomy	Did well

DISCUSSION

Pancreatic pseudocysts are localized collections of amylase-rich pancreatic secretions enclosed in a wall of fibrous or granulation tissue without an epithelial lining. This occurs as a result of pancreatic inflammation and ductal disruption[8]. They usually collect in the lesser sac but sometimes between the leaves of the lesser or greater omentum, between loops of intestine and rarely in the chest or pelvis. The pseudocysts may be unilocular or multilocular and may or may not communicate with the main pancreatic duct [9]. Pancreatic pseudocysts occur in 20-40% of cases of chronic pancreatitis whereas in 5-10% of cases of acute pancreatitis[10]. Alcohol, biliary disease, blunt abdominal trauma and viruses are known to induce pancreatitis, which may progress to chronicity. Akinola[3] in his previous report from this centre noted that the incidence of pancreatic pseudocysts has remained virtually the same in Nigeria over the years as is the case in this centre. He also predicted an increase in pancreatitis and pancreatic pseudocyst in Nigeria as a result of increase in alcohol consumption. However, this prediction has not materialised considering treating only 5 cases for pancreatic pseudocysts at this centre over a period of 10 years. Blunt abdominal trauma is an aetiologic agent for pancreatic pseudocyst especially in children [11, 12]. In a study carried out on ten children treated for pancreatic pseudocysts in Nigeria, four of the cysts were traumatic in origin while the cause of the others was obscure. Trauma causes ductal disruption and intraparenchymal haematoma with consequent seepage of pancreatic secretion and pseudocyst formation[13]. The youngest patient in this study happened to be the patient with the history of blunt abdominal trauma from domestic violence. Despite the high incidence of vehicular accidents in this country, the incidence of pancreatic pseudocyst remains low. This implies that other factors seem to be at work in determining the incidence.

The evaluation of pancreatic pseudocystic lesions entails a risk of misdiagnosis with many of the symptoms being non specific[13]. This may result in significant delay of diagnosis. Eighty to one hundred percent of patients in most series present with

abdominal pain[3, 14]. In this study all the patients presented with abdominal pain and abdominal mass. Among the non specific symptoms in the reviewed cases are nausea, vomiting and fever. Two (40%) of the patients had some significant weight loss. Pleural effusion demonstrated in two patients was associated with some degree of ascites. Some earlier workers have documented pleural effusions in patients with pancreatic pseudocyst though in the absence of ascites[14,15].According to Lankisch *et al* [15], patients who had acute pancreatitis with pleural effusion often had pancreatic pseudocyst and had a higher mortality rate than patients without this complication not minding the size or location of the effusion. In this study, the patients with pleural effusion did not do well. The patient who had bilateral pleural effusion died while the one with unilateral effusion had a recollection of the pseudocyst following external drainage. This will support the suggestion by Lankisch *et al* [15] that pleural effusions are indicative of severe acute pancreatitis and are a negative prognostic parameter for the course of the disease.

Ultrasonography remains the initial investigation of choice for this disease entity because it is readily available and has a sensitivity of 88% -100%. It helps to define the lesion, its size, shape, location, cystic nature as well as the presence or absence of septae or debris. It is also the most reliable diagnostic method for ascertaining the thickness of the wall of the pseudocyst[8, 15] which appears to be a major factor in determining whether or not the pancreatic pseudocyst is amenable to internal surgical drainage[16]. It is now possible to preoperatively monitor the size of the pseudocyst and decide for conservative management. It should however be noted that though the commonest cause of a sonolucent mass lesion in the epigastrium has been found to be pancreatic pseudocyst[16], 9-13% of cystic lesions of the pancreas are neoplastic[17].

Upper gastrointestinal endoscopy has assumed increasing importance in our centre with the advantage of rapidly excluding intragasric lesion, which may present similarly. It revealed extragastric compression in 2 patients in this study. However, the size of the pseudocyst must be large enough as to cause a retrogastric mass effect.

Three of our patients had moderate to severe anaemia with otherwise normal blood film. The leukocyte counts and the serum electrolytes and urea were all within normal range. Serum amylase could not be estimated in any of the patients because of lack of reagent.

The treatment options available for pancreatic pseudocysts vary from conservative management, surgery, percutaneous drainage and endoscopic drainage. These can be tailored to the needs of individual patient. One patient in this study had spontaneous resolution. This patient's pseudocyst measured 2.2cm by 1.7cm and was located in the tail of the pancreas. Earlier workers have documented that pseudocysts that are less than 5cm in diameter tend to resolve spontaneously [3,18]. Up to 86% spontaneous resolution have been reported in pancreatic pseudocysts that complicate acute pancreatitis[19]. Pancreatic pseudocysts that develop secondary to chronic pancreatitis do not usually resolve spontaneously[10]. However cysts that are larger than 6cm should not be treated conservatively to avoid complications like rupture[20]. This method of treatment must be supported by radiographic follow up in form of ultrasonography and computerized tomography[7, 21]. The resolution in our patient was confirmed by follow up ultrasound and cessation of symptoms.

Surgical procedure for pancreatic pseudocyst can be in form of external or internal drainage. The choice of surgery in our patients was determined by the location of the cyst and the thickness of the cyst wall. Two of our patients had internal drainage inform of cystogastrostomy because they had sufficiently thick cyst wall for the anastomosis. There was no refilling of the cysts. The other 2 patients had external drainage though one of these died within the first 24 hours of treatment. The cause of death was difficult to ascertain because no autopsy was performed. Multiple organ failure initiated by respiratory collapse could have been responsible as this patient also had bilateral pleural effusions. This is however speculative. Other common causes of death following surgery include hemorrhage

from erosion of adjacent vessels by elastase. The other patient that had external drainage had a recollection within seven weeks of the surgery. External drainage therefore seems to be fraught with significant postoperative morbidity and should be discouraged. Moran *et al* [22] in their study of patients with pancreatic pseudocyst concluded that surgery provides definitive management, is safe with little morbidity and low mortality, has low risk of recurrence and allows biopsy of the cyst wall to exclude cystic neoplasm of the pancreas.

Percutaneous drainage which is another method of treating pancreatic pseudocysts is noted to be a safe and inexpensive procedure with low morbidity but associated with high recurrence rate and the risk of drain track infection[23, 24].

Endoscopic drainage is the most recent treatment procedure for pancreatic pseudocyst especially when the cyst bulges into the gastrointestinal lumen [1,8]. It requires careful patient selection and operator expertise[6]. In expert hands, it is said to be associated with 94% initial technical success, 90% cyst resolution, 16% recurrence rate[25]. Since facilities for endoscopic interventions are limited in this subregion, open surgical techniques are still the mainstay of treatment.

CONCLUSION

Pancreatic pseudocyst remains uncommon in Nigeria and many other African countries. Though the number of breweries has increased significantly, alcoholic pancreatitis which is the main predisposing factor to its development in the Western world has not significantly increased the incidence in Nigeria. Abdominal ultrasonography still has a very important place in the diagnosis and management of these patients. Conventional techniques of internal drainage are still favoured. However one hopes that with more training and availability of the necessary equipments, endoscopic drainage may also become more available and be employed when indicated in our community.

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