GIANT PANCREATIC PSEUDOCYST: A RARE CASE REPORT WITH REVIEW OF LITERATURE

[1]Archana C Buch, [2]Sakshi Garg*, [3]Arpana Dharwadkar, [4]Shirish S Chandanwale

1. Professor, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research Center, DPU, Pune-411018.
2. Resident of Pathology, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research Center, DPU, Pune-411018.
3. Professor, Department of Pathology Dr. D.Y. Patil Medical College, Hospital and Research Center, DPU, Pune-411018.
4. Professor, Department of Pathology Dr. D.Y. Patil Medical College, Hospital and Research Center, DPU, Pune-411018.

Corresponding author:
Sakshi Garg,
Resident of Pathology, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research Center, DPU, Pune-411018
Email- garg93sakshi@gmail.com
ORCID ID-0000-0002-0682-4540

ABSTRACT

Giant pancreatic pseudocysts are rare and usually occur as a complication of chronic pancreatitis. A pseudocyst greater than 10 cms in diameter is termed as a giant cyst. Here we present a case of giant pancreatic pseudocyst with a unique presentation along with review of literature. Take home message: Giant pancreatic pseudocyst is rare. The treatment and prognosis depend on size, duration and presentation. Early detection and treatment prevent complications and improves prognosis.

Keywords: Pancreatic cyst, non-neoplastic, Giant, Chronic pancreatitis.

INTRODUCTION

Pancreatic pseudocyst is a localised collection of fluid, surrounded by a thick fibrous tissue lacking the lining epithelium.[1] The overall incidence reported is 0.5 to 1 per 100,000 persons/ year. It occurs 5-10% in patients with acute pancreatitis and in almost 50% in chronic pancreatitis. 3-8% cases are post-traumatic.[2]

Pancreatic pseudocysts represent more than 75% of cystic lesions of pancreas. This can be single or multiple and vary from small to large. The larger cysts are more likely to be symptomatic and cause complications.[2] A pseudocyst with diameter of 10 cms or more is termed as giant which is rare. We present a rare case of giant pancreatic pseudocyst with review of literature.[2]

CASE REPORT

A 40-year-old male presented with complaints of abdominal pain and distension. He was chronic alcoholic and presented with severe abdominal pain radiating to the back.

On clinical examination he was afebrile with a pulse rate of 88 bpm, blood pressure of 160/90 mmHg. He was emaciated, mildly pale but was not icteric. Abdomen was distended and non-tender.

Laboratory investigations showed Hb-8.8 gm%, TLC of 28,700/mm^3 and platelet count of 3,55,000/mm^3, Amylase and lipase levels were 207 U/L and 315 U/L respectively. Liver function test was within normal limits.

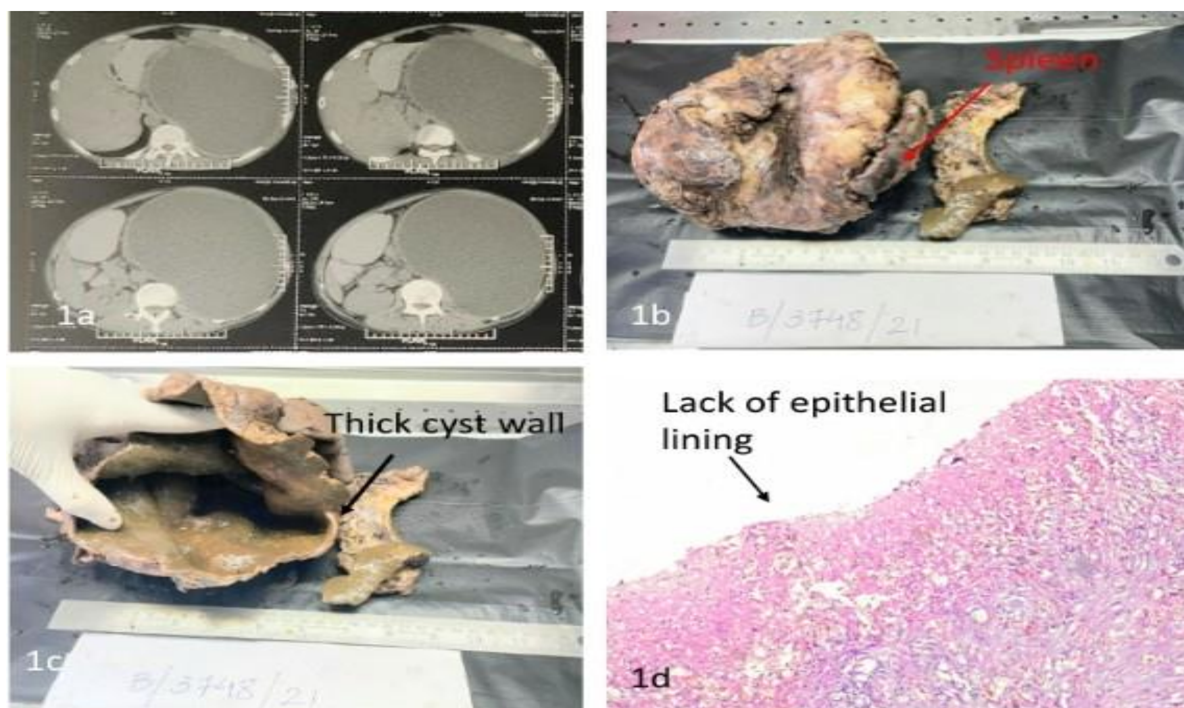
Chest X-ray was normal. Ultrasonography of abdomen showed a large cystic lesion measuring 30 X 28 cms in the epigastric region. A reniform structure of 10 X 15 cms was noted within it suspected to be floating left kidney. Spleen, pancreas, and left kidney were not visualised.

Endoscopic ultrasound guided drainage of fluid was done as a therapeutic procedure. A retroperitoneal mass was visualised, and 4.5 litres of fluid was drained and sent for cytological examination. Grossly fluid was thick and brownish. Microscopy showed predominantly lymphocytes against a haemorrhagic background. No malignant cells were seen. Biochemical analysis of fluid revealed protein- 3.07 gm%, sugar- 60.5 gm%, amylase- 3,840 U/L and creatinine- 1.07 mg/dl.

CT scan of abdomen and pelvis (Figure-1a) showed a large well defined thick walled, non-enhancing, hypodense lesion measuring 29 X 18 cms, encasing and compressing left kidney. It caused marked mass effect on abdominal contents with displacement of bowel loops in right abdominal cavity. The spleen was compressed antero- superiorly and pancreas towards the right side. The collection measured 21 X 15 X 30 cms.

Patient underwent cyst excision with distal pancreatectomy, splenectomy, and left nephrectomy. The excised specimen was sent for histopathological examination.

On gross examination the specimen was cut opened, received in two tissue pieces measuring 17 X 6 X 9 cms and 14 X 7.5 cms in dimensions. Externally it was grey unilocular thick-walled cyst with a slightly rough inner lining, covered by yellowish green necrotic material. No papillae were noted. Spleen was identified measuring 6 X 5 cms (Figures-1b and 1c). Kidney appeared to be entirely covered by the cyst wall and was 10 X 5 cms in size. Multiple sections studied showed fibro collagenous cyst wall with areas of haemorrhage and inflammatory cells. Lining epithelium was not seen in the sections studied (Figure-1d). Fibrotic areas were noted. Splenic and renal parenchyma were unremarkable. Final diagnosis was given as giant pseudocyst of pancreas. The post-operative period was uneventful. The patient was given 0.5 ml IM Pneumococcal 13-valent conjugate vaccine on 14th day post-splenectomy.



Figures-1a-1d: Contrast enhanced CT showing a large well defined thick-walled hypodense cystic lesion measuring 29 X 18 cms (1a). A large cystic mass measuring 17 X 6 X 9 cms encircling kidney (1b). Thick cyst wall covered with greenish necrotic material (1c). Fibro collagenous cyst wall devoid of epithelial lining (H and E,400X) (1d).

Since giant pseudocysts are rare, we performed a literature search using pubmed and google scholar search engines. The records of the search were tabulated in Table-1

S.No	**Author**	**Year**	**Age**	**Gender**	**Presentation**	**Size** (cms)	**Case No.**	**Treatment**
1	Gorska Z et al	1986	29	Female	AD	>10	1	Surgical removal
2	Seki H et al	1998	41	Male	AP, N , V	>10	1	Thoracotomy
3	Yang CC et al	1999	15	Male	NA	10 X 6	2	Endoscopic cyst drainage
			44	Male		18 X 9		
4	Oria A et al	2000	Mean age-35.9 yrs	7- Male	NA	>10	10	Video assisted pancreatic necrostomy
				3-Female				

5	Hagopian EJ et al	2000	45	Male	AD, AP	>10	1	Laproscopic internal drainage by Roux-en-Y cyst-jejunal anastmosis
6	Smadja C et al	2003	NA	NA	NA	Mean diameter= >15	3	Cystogastrostomy
7	Golash V et al	2004	60	Female	AD, AP	>10	1	Cystogastrostomy
8	Yamaguchi T et al	2007	72	Male	AD, Jaundice	22	1	Total pancreatectomy with pseudocyst resection
9	Syed Aslam Shah et al	2012	56	Male	AP	25 X 17	1	Cystogastrostomy
10	De Socio GV et al	2012	48	Male	HIV+, AD	21	1	Percutaneous drainage
11	Wang GC et al	2015	65	Male	AP, AD	25.7 X 15.3 X 10.9	1	Cystogastrostomy
12	Karim et al	2016	70	Male	AD, jaundice	22 X 20 X 19	1	Excision of cyst
13	Kumar A et al	2016	50	Male	AP	18 X 10 X 9	1	ERCP guided sphincterectomy
14	Beuran M et al	2016	37	Female	AP, AD	23 X 15 X 12	1	Cystogastrostomy
15	Pasternak A et al	2016	33	Female	AP, AD	10.3 X 9.6 X 9.3	1	Open retrogastric cystogastrostomy
16	Alhassan S et al	2017	68	Male	AP	25 X 20 X 14	1	Laprotomy with pseudocyst debridement and cholecystectomy
17	Alsayid M et al	2018	48	Female	AP, AD, N	>10	1	NA

18	Udeshika WAE et al	2018	27	Female	AD	30 X 15 X 14	1	Fluid drainage
19	Igwe PO et al	2020	22	Female	AD, AP	20 X 18	3	Cystogastrostomy
			65	Female	AD	>10		
			11	Male	AP and V	12 X 10		
20	Nelson et al	2020	16	NA	AP, AD breathlessness,	35 X 15 X 14	1	Exploratory laparotomy with Roux-en-Y pancreaticojejunostomy
21	Page D et al	2020	69	Male	Fever, AD	>10	1	Percutaneous drainage
22	Hunandez AM et al	2020	53	Male	AP, N & V.	13.7 X 13.7 X 19	1	NA
23	Irwan et al	2020	16	Female	AP, AD	20	1	Longitudinal panctreatico-jejunostomy
24	Alonso V et al	2021	13	Male	AP	17 X 8.6 X 8	1	Laprotomy
25	Overton-Hennessy et al	2021	46	Female	AP	15 X 15 X 15		Cystogastrostomy
26	Alzeerelhouseini HIA et al	2021	NA	NA	AP	>10	2	Endoscopic removal
27	Lu B et al	2021	81	Female	AD. AP	>10	1	Nephroscopic drainage
28	Alzeerelhouseini HIA et al	2021	55	Male	AD, AP	>10	1	Endoscopic cystogastrostomy
29	Evola G et al	2021	52	Female	AD, AP, N & V	>10	1	Pancreatic resection
30	Riwai MI et al	2021	16	Female	AD, AP	20	1	Pancreatico-jejunostomy
31	Moratal M et al	2021	31	Male	AP	16 X 17 X 24	1	Percutaneous drainage
32	Laha I et al	2021	37	Male	AD, AP	>10	1	Exploratory laprotomy
33	Alberta SD et al	2021	14	Male	AD	18 X 15	1	Laprotomy
34	Suresh G et al	2021	55	Male	AD, N, V	17 X 20	1	Cystojejunostomy
35	Barrios AN et al	2021	68	Male	AD	>10	1	Cystojejunostomy

37	Saxena P et al	2021	34	Male	AP, AD	- 10.9 X 15 X 14	1	Cystogastrostomy
38	Present case	2021	40	Male	AP, AD	29 X 18	1	Surgical excision

AD= Abdominal distension AP= Abdominal Pain N, V= Nausea, vomiting NA= Not available

DISCUSSION

Pancreatic pseudocysts are the most common non-neoplastic cysts of pancreas. A true cyst is a localised fluid collection surrounded by a capsule lined by an epithelium, whereas a pseudocyst lacks the lining of cells. [1]

When a major pancreatic duct or one of the ductal branches disrupts, there is accumulation of pancreatic secretions in retroperitoneum or peri-pancreatic tissues.[1]

Etiology of pancreatic pseudocyst includes alcohol, biliary tract diseases, trauma or it can be idiopathic. Pancreatic pseudocyst following a case of acute pancreatitis occurs because of the necrosis of peri-pancreatic tissue which causes liquefaction and subsequent organisation. Acute exacerbation of pancreatitis or progressive ductal obstruction can cause pseudocyst formation in chronic pancreatitis.[4]

The clinical presentation of giant pancreatic pseudocyst can range from asymptomatic to major abdominal complications. It can present as abdominal pain, nausea and vomiting, and discomfort caused due to compression of organs.[4]

Complications occur in 10% of pseudocysts and includes bleeding (from splenic artery pseudoaneurysm), infections, rupture, fistula, or compression of adjacent organs.[5]

Treatment modalities are observation and intervention. Key points that need consideration before treatment are size, location and maturation of cyst. Some giant pseudocysts may resolve spontaneously and do not require any surgical management. In case there are any complications or cyst is neoplastic then surgical management is needed.[5]

The review of literature revealed that management of giant pancreatic pseudocyst includes observation, percutaneous drainage and surgical interventions based on clinical presentation. It was mentioned the surgical approach is indicated when complications occur or if cystic neoplasm is suspected. [5]

Since this case had a unique presentation with engulfment of entire left kidney. The plane of resection was unidentifiable on table compromising the spleen and kidney of the patient.

Literature review revealed total 43 cases with different treatment modalities depending on size and presentation. This case was presented to highlight the variation and complexity of management of pseudocyst of pancreas.

REFERENCES

1. Igwe PO, Ray-Offor E, Karibi EN, Okeke UF, Ugwa OC, Jebbin NJ. Giant pseudocyst of the pancreas: A report of three cases. Int J Surg Case Rep. 2020; 77:284–97.

2. Shah SA, Abdullah MT, Kakar AH, Zubair M. Giant pancreatic pseudocyst. J Coll Physicians Surg Pak. 2012;22(5):325–7.

3. Laha I, Sen S, Das AK. An unusual presentation of giant pancreatic pseudocyst in the parietal wall. Ind J Case Rep. 2021;366–8.

4. Udeshika WAE, Herath HMMTB, Dassanayake SUB, Pahalagamage SP, Kulatunga A. A case report of giant pancreatic pseudocyst following acute pancreatitis: experience with endoscopic internal drainage. BMC Res Notes. 2018;11(1).

5. Alhassan S, Umar S, Lega M. One of the largest pancreatic pseudocysts in the literature: A case report. Cureus. 2017;9(7):e1493.