

CASE REPORT

Extension of pancreatic pseudocyst into psoas muscle in a setting of acute pancreatitis

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SUMMARY

Pancreatic pseudocysts are known to extend beyond the confines of the pancreatic bed due to the digestive nature of enzyme rich pancreatic fluid. Extension of a pseudocyst beyond the retroperitoneum, along the retrofascial plane within the psoas muscle is, however, unusual, with only a handful of cases described in the literature. We report a case of a 28-year-old man who presented with right lumbar pain and painful ipsilateral hip extension. Imaging findings revealed extension of the pseudocyst into psoas along with features of acute pancreatitis. The pseudocyst was drained percutaneously under image guidance, which led to resolution of symptoms.

BACKGROUND

Pseudocyst formation is a known sequelae of acute as well as chronic pancreatitis resulting from pancreatic duct leakage with surrounding rim of granulation tissue. Pseudocysts are complicated by bleeding, rupture, mass effect, secondary infection and fistula formation. Owing to the destructive nature of pancreatic enzymes, a pseudocyst may extend anywhere from the neck and mediastinum to the groin. However, extension of the pseudocyst beyond the retroperitoneum, through the retrofascial plane into the psoas muscle, as highlighted in our case, is rare. We thus exemplify that a sound knowledge of the expansive extension of a pancreatic pseudocyst should be kept in mind, since it can pose a diagnostic and therapeutic challenge.

CASE PRESENTATION

A 28-year man presented with a 1 week history of pain in the right lumbar region radiating to the thigh. He was a known case of alcohol-induced pancreatitis and had recurrent episodes of abdominal pain, nausea and vomiting, with the latest episode about a week prior, which was managed conservatively. At the time of presentation, the patient was cachexic and febrile, with tachycardia (92/min), and he was tachypnoeic (32/min). On examination, severe tenderness was elicited in the right lumbar region on deep palpation and there was restriction of extension at the ipsilateral hip joint.

INVESTIGATIONS

Laboratory examination revealed elevated total leucocyte count ($18\,200/\text{mm}^3$) with a predominance of neutrophils. Serum amylase was 820 IU/L (normal reference value 25–125 IU/L) and serum lipase level was 1102 U/L (normal reference value

40–290 U/L). On ultrasonography, the pancreas was bulky and oedematous. The right psoas was bulky with anechoic collection within. The collection had a few mobile echoes and showed through transmission. These findings were confirmed on CT of the abdomen, which showed hypoattenuating fluid collections in the retrofascial plane on the right side extending throughout the length of the psoas muscle (figures 1 and 2).

DIFFERENTIAL DIAGNOSIS

Differentials of psoas extension of a pseudocyst include a primary or secondary psoas abscess or psoas infiltration of a primary retroperitoneal tumour. Spread of infection from gastrointestinal disease (eg, appendicitis, perforated colonic cancer and diverticular disease) is the most common source of a secondary psoas muscle fluid collection. A detailed clinical history and laboratory investigation of the aspirated fluid will help in differentiating it from a pseudocyst.



Figure 1 Axial sections of contrast-enhanced CT of the abdomen show hypoattenuating fluid collections within the right psoas muscle (white arrowheads). Note the peripancreatic inflammation and peripancreatic fluid collections (white arrows) suggestive of background pancreatitis.



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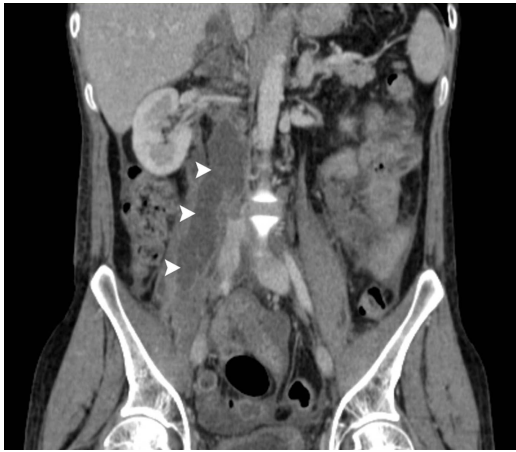


Figure 2 Contrast-enhanced CT of the abdomen in coronal reformation reveals extension of the pancreatic pseudocyst along the length of the right psoas muscle (white arrowheads).

TREATMENT

Ultrasound-guided percutaneous aspiration of the collection was carried out and the biochemical analysis of the fluid revealed an elevated lipase (7800 U/L) and amylase (10 220 IU/L). A diagnosis of psoas extension of pancreatic pseudocyst was thus established.

The patient was discharged on resolution of the collection on serial imaging.

He has been asked to follow-up on a regular basis.

OUTCOME AND FOLLOW-UP

The drainage was successful in our patient. At 2 months follow-up, the patient is symptom free with no further attacks of pancreatitis.

DISCUSSION

Pancreatic pseudocysts are known complications of pancreatitis.¹ While an estimated prevalence of around 5–16% is seen in acute pancreatitis, the figure for chronic pancreatitis is 30–40%.¹ Disruption of the ductal system in pancreatitis causes enzyme rich succus to seep into the peripancreatic tissue, which gets walled off by granulation tissue, thus forming a pseudocyst.^{1 2} Though generally confined to the lesser sac, there have been reports describing extension of the pseudocyst to the neck, mediastinum, inguinal region, scrotum, pleura, liver and spleen. The extension beyond the retroperitoneum and into the psoas muscle is extremely rare, with a few cases described in the literature.^{1–5}

Pancreatico-psoas fistulas more commonly affect the right psoas muscle. They are seen predominantly as a complication of chronic pancreatitis;¹ only two cases have followed an attack of severe acute pancreatitis¹ (as seen in our case). Review of the previously published cases (including the current case) reveals painful inguinal swelling as the most common symptom. Other presenting complaints in decreasing order of frequency include thigh mass, symptoms mimicking incarcerated inguinal hernia, hip pain and pain in the upper abdomen, lumbar region and back.^{1 3–11}

Management of pancreatic pseudocysts is largely conservative. More than 50% undergo spontaneous resolution.¹² Thus, the size of a pseudocyst is not an absolute criterion for its drainage. Intervention is indicated only if the patient becomes symptomatic.¹² Symptomatic pseudocysts (infection, pain, compression of adjacent structures) are best managed by imaging-guided percutaneous aspiration.^{10 12} The procedure combines benefits of drainage

of pancreatic secretions along with the advantage of being minimally invasive. Percutaneous drainage led to successful management of pancreatico-psoas fistulae in 7 of 12 (including the current case) reported cases.^{1 3–11} Non-availability of a window (on imaging) to negotiate a pigtail catheter is a contraindication for external drainage procedures. In such a scenario, endoscopic or internal drainage is a viable option.^{10 12} However, expertise on the part of the endoscopist is an absolute must. Pre-requisites for endoscopic procedure (cystogastrostomy, cystoduodenostomy or cystojejunostomy) include a mature cyst wall, a distance of 1 cm or less between the stomach or small intestine and the pseudocyst, and an absence of intervening major vessel in the path of stent placement.^{1 3 10 12} Drainage procedures are a failure in cases of obstruction of duct proximal to the site of disruption. An obstructed duct decompresses itself via the site of disruption and hence leads to persistence of the fistula.¹² Refractory cases may be amenable to surgical intervention with laparoscopic approach being preferred over an open one.^{1 5 12}

Learning points

- ▶ Pancreatic pseudocysts are common complications of chronic, and less so of acute, pancreatitis.
- ▶ The remarkable property of pancreatic enzymes to dissect the fascial planes accounts for atypical locations of pancreatic pseudocysts. Psoas extension of a pancreatic pseudocyst is rare. Nevertheless, such an extension should be included in the list of unusual sites of pancreatic pseudocysts.
- ▶ Radiological imaging, in the form of CT, is the investigation of choice in assessing the location and extent of a pseudocyst.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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