CASE REPORT

Multiloculated mesothelial cyst presenting as a malignant mimic

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SUMMARY

A 46-year-old woman was referred for a second opinion regarding an intra-abdominal mass discovered on imaging performed for abdominal pain and distension. The tumour appeared to involve the small bowel, left colon and mesentery and was initially thought to be consistent with an infiltrative tumour or loculated mucinous ascites. Due to the unusual appearance of the tumour and suspicion for an omental-based mass, a laparoscopic resection was recommended to the patient. Intraoperatively, the tumour was found to be a multiloculated, benign appearing, omental cyst without involvement of the bowel and was completely resected laparoscopically. Pathology demonstrated a multiloculated peritoneal mesothelial cyst.

BACKGROUND

Benign mesothelial cysts are uncommonly encountered and often present with long-standing and non-specific symptoms and ambiguous imaging findings. These lesions present a risk of recurrence if not completely excised. The imaging appearance can be consistent with more ominous lesions, but laparoscopic exploration is appropriate and should be considered, with conversion to an open resection if technically or oncologically warranted.

CASE PRESENTATION

A 46-year-old female presented with left lower quadrant pain, intermittent nausea and abdominal fullness for several months. She denied weight loss, fevers and chills. Her medical history was significant for nephrolithiasis and three caesarean sections. Abdominal examination revealed mild abdominal tenderness, fullness, but no discrete mass.

INVESTIGATIONS

CT demonstrated a 20×7×5 cm tumour insinuated between loops of small bowel, left colon, and

Figure 2 Laparoscopic view of the multicystic tumour involving the majority of the left abdomen.

mesentery (figure 1). A colonoscopy was performed and was normal. Laboratory investigation including a complete blood count and metabolic panel was within normal limits.

DIFFERENTIAL DIAGNOSIS

The initial impression was an infiltrative tumour or loculated mucinous ascites. The patient was recommended at another institution to undergo an open resection of the mass and she presented to our clinic for a second opinion. Based on our review of the imaging, we suspected an omental-based tumour and offered a laparoscopic exploration with resection of the mass and involved structures if oncologically appropriate based on intraoperative findings. The patient was counselled regarding the possibility of open resection.

Figure 1 Axial and coronal CT images.

Figure 3 Histological H&E stained slides at (A) 40× and (B) 200× magnification. Immunohistochemical stains for (C) calretinin and (D) CK 5/6.

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TREATMENT

Laparoscopy was performed with a 10mm trocar at the supraumbilical location and two 5mm trocars in the right abdomen. The mass was immediately evident in the left abdomen as a multiloculated, macrocystic tumour extending from the splenic flexure to the pelvis (figure 2). The tumour was mobile with pelvic adhesions and attachments to the greater omentum without involvement of the colon, small bowel, or mesentery. A Soncision device (Medtronic, Minneapolis, Minnesota, USA) was used to release the pelvic adhesions and excise the tumour with a margin of omentum. Given the unknown histology of the tumour, the supraumbilical port site was extended to a 10cm midline incision to extract the specimen without spillage. The patient's postoperative course was uneventful and she was discharged home on postoperative day 2. She was evaluated in the office for routine postoperative follow-up 2 weeks after surgery and had complete resolution of her symptoms. She continues to be symptom free at 6 months.

OUTCOME AND FOLLOW-UP

The gross specimen measured 32×15×5 cm in aggregate and contained cysts of varying sizes containing thin clear fluid. Histopathological examination revealed a multiloculated peritoneal mesothelial cyst (figure 3A,B). The cyst lining showed positive immunohistochemical staining for keratin marker Cam 5.2 and negative for endothelial marker CD31. Additionally, the epithelial lining was diffusely positive for calretinin (figure 3C) and there was cytoplasmic positivity for CK5/6 (figure 3D), confirming mesothelial differentiation.

DISCUSSION

The radiographic appearance of the lesion in this patient raised concern for a malignant tumour or pseudomyxoma peritonei. However, on careful review of her imaging, it appeared to be an omental-based lesion which was confirmed by laparoscopic exploration.

Mesothelial inclusion cysts have been reported arising from the mesentery or pelvis.^{1 2} These lesions are characterised by flattened, cuboidal or columnar lining cells with fibrous walls and lack of smooth muscle.¹ Immunohistochemical staining is positive for keratin and negative for CD31, in contrast to lymphatic cysts.^{1 3} There is debate in the literature as to whether these lesions represent a neoplastic process or a reactive process to surgery or endometriosis and have been called benign cystic mesotheliomas.²⁻⁴ Patients are typically reproductive age women and commonly have a history of prior surgery or endometriosis.^{2 3 5} Most lesions follow a benign course, although there have been reports of infection, haemorrhage, rupture, recurrence, and malignancy.^{2 6 7}

In adults, these lesions often present with abdominal pain or compressive symptoms as with our patient.^{1 2} Surgical resection is recommended due to the inability to differentiate benign mesothelial cysts from lymphangiomas and malignant mesothelial lesions or detect concurrent malignancy or degeneration based on imaging alone.¹ The reported recurrence rate is highly variable, but overall, repeat resection appears to be a viable option.⁶

Complete en bloc resection of mesothelial cysts should be undertaken since the majority of these lesions are benign and surgical resection is curative. Laparoscopic resection is an accepted approach^{6 8} and remains our preferred approach due to decreased length of stay and more expeditious recovery. The appropriateness of the laparoscopic approach relies on careful patient selection and the surgeon should be prepared to convert to an open approach if required from an oncological or technical standpoint.

Patient's perspective

I had been experiencing intermittent mild abdominal pain on my left side for several months that I decided to chalk up to indigestion as life as a mother of three had me running in different directions and I didn't have time to be concerned with minor aches and pains. Eventually, as everyone's schedule slowed a bit and the pain became more sharp and frequent, I decided to schedule an appointment with my general practitioner to try to figure out the cause. Diverticulitis runs in my family and I had a feeling that may be what I was dealing with. Blood work and imaging were scheduled and I was told a follow-up appointment would likely be scheduled within the next 2 weeks to discuss the results.

I was shocked to receive a call from the doctor's office right after completing the imaging stating that I needed to come back that day to discuss the testing. I was given the news that a large abdominal tumour was found and that I was being referred to a surgical oncologist. I was shocked and scared—how bad is this...is it cancer? A few sleepless nights and then my first appointment with the specialist—he gave me details of what they knew at that point—the size and general shape of the tumour, what organs it was touching, etc. He scheduled additional testing (more blood work, endoscopy, colonoscopy, CT scans) that were completed over the next 2 weeks with normal results. At this point, I was no longer able to eat an average size meal as it would cause great discomfort and I was battling constipation. I met with a second surgeon within the same practice (due to insurance reasons) and discussed next steps. We discussed a couple of options including a biopsy first and then surgery (open resection) or just the surgery. Fearing a potential contamination due to a biopsy I was leaning towards the larger surgery which scared me as much as the tumour. I was not looking forward to having my entire midsection opened up and the long hospital stay and recovery from the surgery itself. I decided it would be prudent to seek a second opinion.

I was grateful Dr Chalikonda was able to work me into his schedule and see me so quickly. My files were sent over in advance of the appointment for him to review. Immediately on meeting Dr Chalikonda I was more at ease. In addition to his calm demeanour and positive assurances, it was clearly apparent he had seen many 'strange' tumours and was confident in his approach to handling mine. He recommended surgery—laparoscopic to start and then based on the results he could determine whether or not the larger more invasive surgery would be required. I was far less apprehensive going into surgery knowing that the doctor was going to do everything necessary to remove the tumour while at the same time doing the minimal amount of 'damage' to the rest of my body.

I am so thankful the tumour was benign and Dr Chalikonda was able to have me back up on my feet in no time.

Learning points

- ▶ Mesothelial cysts are most common in young women and should be excised if suspected.
- ▶ Imaging review by the surgeon is critical to operative planning.
- ▶ Laparoscopy can be considered in oncological surgery and can expedite recovery.

Contributors SC was the primary surgeon who performed the operation and treated the patient, conceptualised the report, provided critical revision and final approval for submission. JSP and LP assisted in treating the patient, performed data collection, drafted the manuscript, provided critical revision and final approval for submission. SEK provided pathologic workup and images, drafted the manuscript, provided critical revision and final approval for submission.

Competing interests None declared.

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