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IMAGING PATHOLOGICAL CORRELATION

Primary Retroperitoneal Mucinous Cystadenoma in a 52-year-old Man

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ABSTRACT

A case of primary retroperitoneal mucinous cystadenoma in a male patient is presented. The pathogenesis and computed tomographic imaging features of this rare lesion are briefly discussed. Although it is difficult to make an accurate preoperative diagnosis and to predict the malignant potential of this tumour, imaging is helpful to delineate the lesion and to provide useful information for preoperative assessment.

Key Words: *Cystadenoma, mucinous; Male; Retroperitoneal neoplasms; Tomography, X-ray computed*

CLINICAL DETAILS

A 52-year-old man presented with a mass in the left buttock that had been slowly enlarging for the previous few months. On physical examination, the abdomen was soft but distended. Rectal examination showed a huge left-sided cystic mass. The mass was tense and the rectum was displaced to the right. Contrast computed tomography (CT) revealed a large well-defined cystic mass (about 15-20 Hounsfield units) in the lower abdomen. The mass extended down to the left ischio-anal fossa in the perineal region and the left buttock (Figure 1). There were foci of calcification in the wall of the lesion (Figure 2). The preoperative diagnosis of this unusual cystic lesion included lymphangioma and cystic teratoma. A giant posterior pelvic tumour that contained a gelatin-like substance was found perioperatively, and the lesion was excised. Pathological examination of the cyst wall showed areas of haemorrhage and yellow discoloration at the inner wall. Histological examination revealed that the cyst was lined by a layer of mucin-secreting columnar cells with scattered goblet cells, and that the lumen was filled with mucin (Figure 3). The patient developed pelvic fluid collection after surgery, but this was treated by CT-guided drainage. He then made a full recovery.

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DISCUSSION

Primary retroperitoneal mucinous cystadenoma is a rare tumour.[1] It is mostly found in female patients, and its occurrence in male patients has been mentioned in only one previous report.[2] The histogenesis of this cystic tumour is not clear. The fact that it mostly occurs in female patients and its resemblance to ovarian mucinous cystadenoma suggest that it arises from heterotopic ovarian tissue. However, this theory does not explain why it also occurs in males. A more plausible explanation of the histogenesis of the lesion is that it arises from the metaplasia of invaginated multipotential mesothelium.

The clinical presentation of primary retroperitoneal mucinous cystadenoma depends on its size and location. A symptomatic lesion is usually large and causes abdominal distension and discomfort. Nevertheless, mucinous cystadenoma could also be asymptomatic and detected incidentally by imaging methods such as ultrasonography, CT, and magnetic resonance imaging (MRI). The tumour is demonstrated as either a unilocular or a multilocular cystic lesion. Major differential diagnoses include lymphangioma, cystic teratoma, lymphocoele, urinoma, cystic mesothelioma, and cystic lesion of parasitic origin. Ultrasonography is readily available and good at showing the cystic nature of the lesion. However, it may not fully delineate the extent of the lesion if it is large. Both CT and MRI are comparable in objectively assessing the extent of cystadenoma before surgery. Although CT is the more

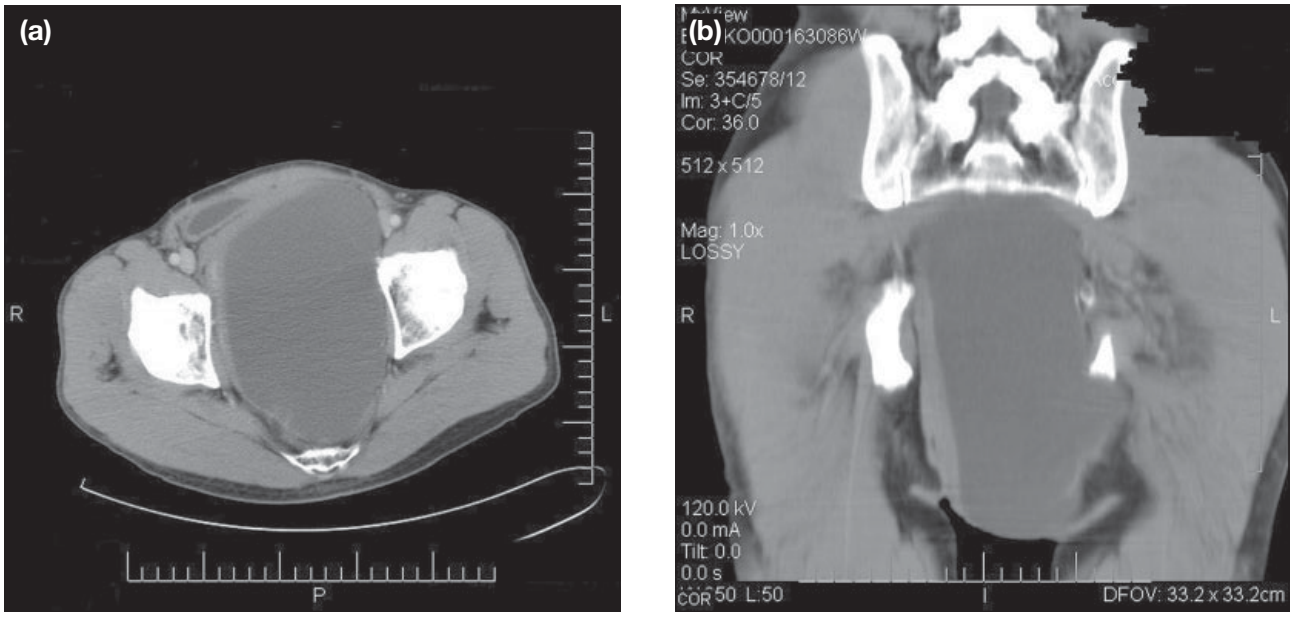

Figure 1. Postcontrast computed tomograms: (a) axial and (b) coronal reconstruction showing a well-defined cystic lesion.

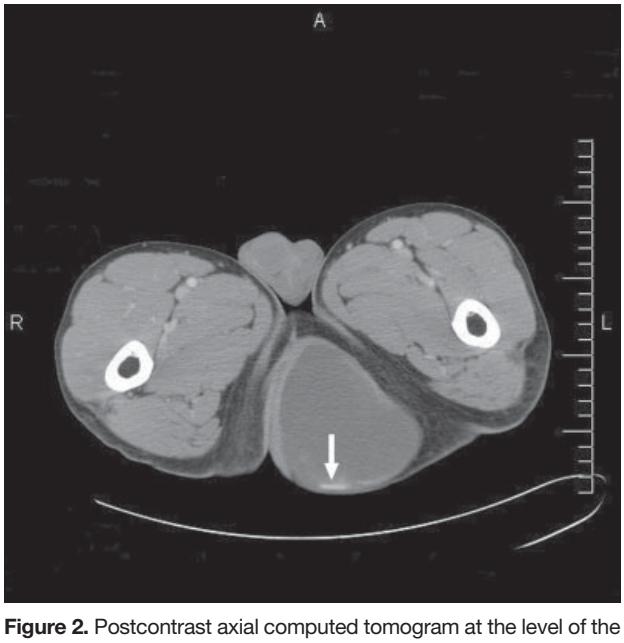

Figure 2. Postcontrast axial computed tomogram at the level of the perineum showing calcification (arrow) of the wall at the posterior aspect of the lesion.

accessible of the 2 methods, it yields poorer soft-tissue resolution and carries a risk of radiation exposure to the patient.

Calcification is an important feature to look for in a cystic lesion. The presence of calcification favours the diagnosis of cystic teratoma and cystadenoma. The tooth-like appearance of calcification helps to give a more definite diagnosis of teratoma. On the other hand, calcification of the wall rather than of the content of the lesion favours the diagnosis of mucinous

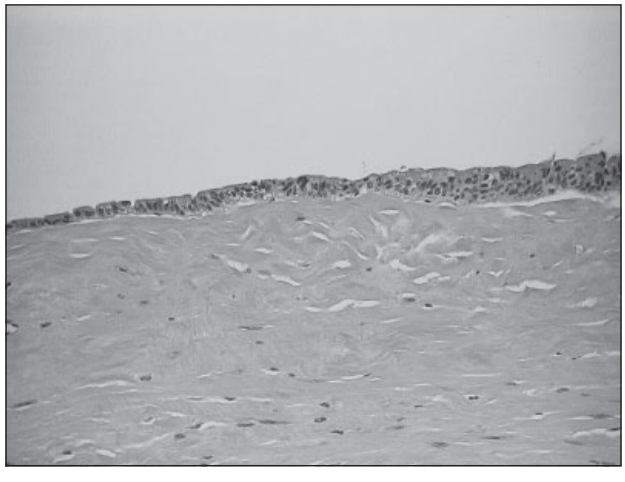

Figure 3. Photomicrograph showing a layer of mucin-secreting columnar cells with scattered goblet cells, and a lumen filled with mucin (haematoxylin and eosin; original magnification, x200).

cystadenoma.[3] In this case, we performed the CT examination with a multislice CT scanner. Postacquisition processing of the scan data, followed by reconstruction of thin sections facilitated coronal and sagittal reformation. This approach helps to improve delineation of the lesion, which could be important in the planning for surgery. Because of MRI's direct multiplanar capability and its better soft-tissue contrast resolution than that of CT, MRI is helpful in assessing the extent and nature of cystic lesions in the pelvis. With in-phase and out-of-phase gradient echo sequences, a tiny focus of fat could be readily demonstrated by MRI. It would be most helpful to differentiate cystic teratoma from other cystic lesions. On MRI, the mucinous cystadenoma may appear hyperintense on T1-weighted images.

Imaging diagnosis of mucinous cystadenoma is difficult in view of its non-specific imaging features and rare occurrence. Moreover, an incorrect diagnosis of cystic lesion arising from a retroperitoneal organ, such as the pancreas or kidney, would be made if the primary mucinous cystadenoma is located in anatomical proximity to these structures.[4] The presence of a similar pelvic cystic lesion in female patients may favour the diagnosis of cystadenoma arising from an ovary, because of its much more common occurrence. The presence of normal ovaries during either MRI or transvaginal ultrasound examination would be helpful in differentiating primary retroperitoneal cystadenoma. However, when the cystic lesion is large, delineation from normal ovaries may be difficult.

Moreover, the serum level of the CA-125 marker may be increased in primary retroperitoneal mucinous cystadenoma.[1] Differentiation of this tumour from ovarian cystic tumour would not be readily achievable clinically. In view of the malignant potential of mucinous cystic tumour, a mucinous cystadenoma should be excised. Even though fine-needle aspiration cytology and measurement of carcinoembryonic antigen levels in the cystic fluid may lead to accurate diagnosis of the lesion,[2] only pathological examination of the whole surgical specimen of the lesion will determine whether there are any malignant foci within the tumour mass.

In conclusion, we present a rare case of primary retroperitoneal mucinous cystadenoma in a male patient. We believe that this report is one of the few detailed accounts of such a tumour in a male patient. Although it is difficult to make an accurate preoperative diagnosis of the tumour, as well as to predict its malignant potential, imaging is helpful to delineate the lesion and to provide useful information for preoperative assessment.

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