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IMAGES IN SURGERY

Retroperitoneal Bronchogenic Cyst Originating from Diaphragmatic Crura

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Abstract Bronchogenic cyst is a benign lesion which is commonly seen in the posterior mediastinum. Diaphragmatic origin in retroperitoneum is an unusual location for a bronchogenic cyst. Cross-sectional imaging modalities describe the origin and content of the cyst evidently. Magnetic resonance (MR) images of a 42-year-old male patient who attended ER with back pain revealed a huge retroperitoneal complicated bronchogenic cyst arising from the diaphragm and surrounding the abdominal aorta anteriorly. Bronchogenic cysts in the retroperitoneum rarely originate from the diaphragm and should be kept in mind in the differential diagnoses of abdominal cystic lesions. MR imaging (MRI) is superior to other imaging techniques such as computerized tomography (CT) in detecting the origin and content of these cystic lesions.

Keywords Bronchogenic cyst · Retroperitoneal space · Magnetic resonance imaging · Diaphragm

Case Summary

A 42-year-old male presenting with back pain attended to emergency service. Computed tomography (CT) revealed a retroperitoneal hypodense lesion located anterior to aorta with a CT number of 20 Hounsfield units. Contrast-enhanced abdominal magnetic resonance imaging (MRI) showed a 9×6×

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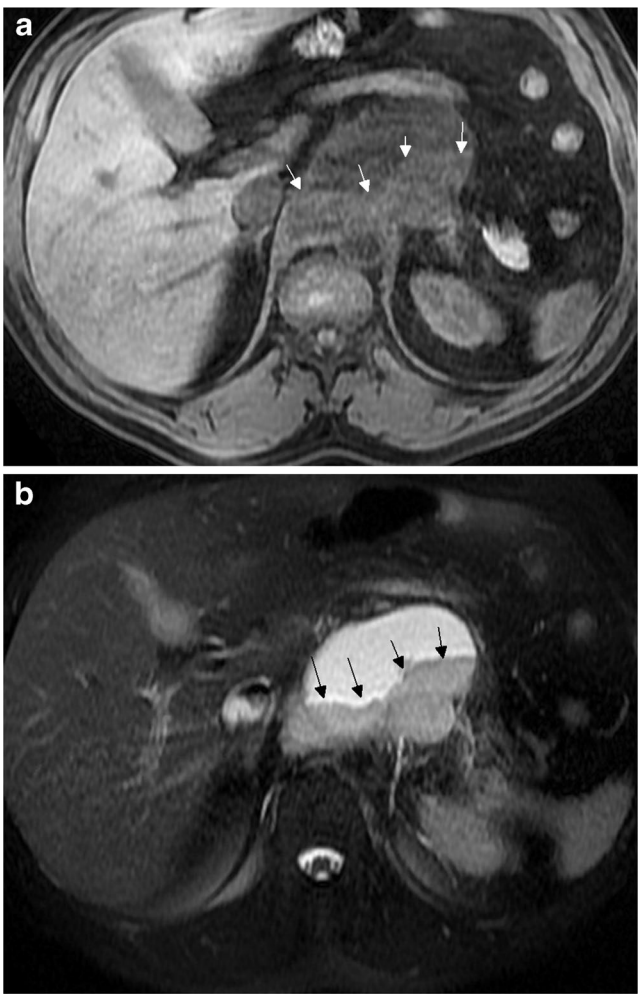

Fig. 1 Axial fat suppression-spoiled gradient echo T1-weighted precontrast image (**a**) shows rather hyperintense component (*white arrows*) inside the cyst. Single-shot fast spin echo T2-weighted image with fat saturation (**b**) shows that it corresponds to a fluid-fluid level (*black arrows*) regarding methemoglobin, mucin, or protein content of the cyst

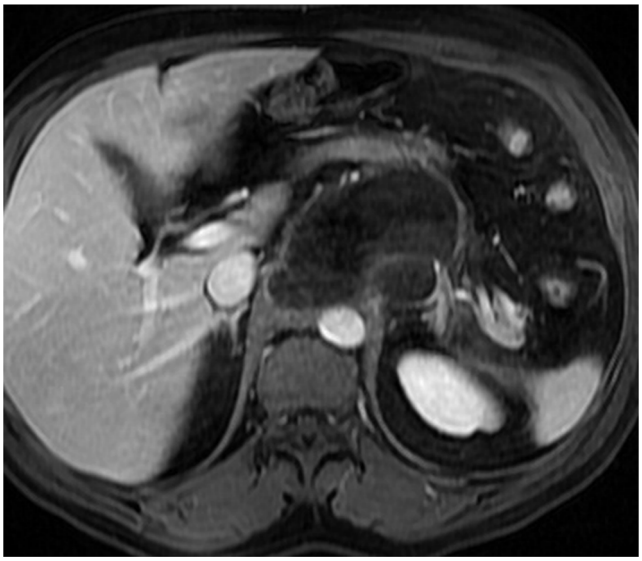

Fig. 2 Axial contrast-enhanced fat suppression-spoiled gradient echo T1-weighted image shows minimal wall enhancement of the cyst

6-cm multilocular cyst arising from the diaphragmatic crura. On fat suppressed T1-weighted precontrast MRI, it had rather hyperintense signal (Fig. 1a) which was appreciated as a fluid-fluid level on fat saturation spin echo T2-weighted images regarding methemoglobin, mucin, or protein content (Fig. 1b). Wall and septa of the cyst were slightly enhanced on a portal phase (Fig. 2). No fat component was seen on fat suppression T1-weighted images. Complicated cyst originating from the diaphragmatic crura was also confirmed surgically. Pathologically, a mucin-containing retroperitoneal bronchogenic cyst was reported.

Discussion

Retroperitoneal bronchogenic cysts can be of varying diameters up to 18 cm and can rarely be seen within the diaphragm [1, 2, 6, 7]. They are usually pure simple cysts but may become complicated with mucus, protein, calcium, or blood products [3]. Complicated cysts have high attenuation on CT and show high signal intensity on unenhanced T1-weighted MRI sequences [4, 6]. A retroperitoneal bronchogenic cyst can mimic an adrenal or a pancreatic lesion and a teratoma or a urothelial cyst radiologically [1, 2, 5, 6]. MRI is superior to CT in the diagnosis and can easily exclude fat-containing lesions like teratomas or dermoid cysts on fat suppression images [4]. Most cases are asymptomatic but can also present with pain or be secondarily infected or compress adjacent organs causing symptoms [1, 2, 4–7]. Surgical excision is the treatment to avoid secondary infection, and no recurrence is expected [6]. Characteristic pseudostratified columnar epithelium, smooth muscle, mucoid material, and cartilage can be identified in histological specimens [1]. Radiologic diagnosis with MRI is of great importance and should be preferred to exclude neoplastic cystic lesions.

References

1. Cai Y, Guo Z, Cai Q, Dai S, Gao W, Niu Y, Li G, Zhang Y (2013) Bronchogenic cysts in retroperitoneal region. Abdom Imaging 38(1): 211–214
2. Haddadin WJ, Reid R, Jindal RM (2001) A retroperitoneal bronchogenic cyst: a rare cause of a mass in the adrenal region. J Clin Pathol 54:801–802
3. Buckley JA, Siegelman ES, Birnbaum BA, Rosato EF (1998) Bronchogenic cyst appearing as a retroperitoneal mass. AJR Am J Roentgenol 171:527–528
4. Murakami R, Machida M, Kobayashi Y, Ogura J, Ichikawa T, Kumazaki T (2000) Retroperitoneal bronchogenic cyst: CT and MR imaging. Abdom Imaging 25:444–447
5. Yang SW, Linton JA, Ryu SJ, Shin DH, Park CS (1999) Retroperitoneal multilocular bronchogenic cyst adjacent to adrenal gland. Yonsei Med J 40:523–526
6. Runge T, Blank A, Schäfer SC, Candinas D, Gloor B, Angst E (2013) Retroperitoneal bronchogenic cyst mimicking a pancreatic or adrenal mass. Case Rep Gastroenterol 7:428–432
7. Subramanian S, Chandra T, Whitehouse J, Suchi M, Arca M, Maheshwari M (2013) Bronchogenic cyst in the intradiaphragmatic location. WMJ 112:262–264