Case Reports and Images in Surgery

Case Report

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Bronchogenic cyst - A rare differential diagnosis of retroperitoneal masses and tumours of the adrenal gland

Simon Gloger[1]*, Stathis Philippou[2], Matthias Bollow[3] and Burkhard Ubrig[1]

[1]Center for Minimally Invasive and Robotic Urology, Augusta Bochum, Witten-Herdecke University, Germany

[2]Department of Pathology and Cytology, Augusta Bochum, Germany

[3]Department of Radiology, Augusta Bochum, Germany

Abstract

Bronchogenic cysts are rare masses with a low potential for malignant degeneration. We report the case of a 27-year-old patient with the incidental diagnosis of an asymptomatic retroperitoneal mass in the upper left quadrant adjacent to the left adrenal gland. The tumour was completely resected laparoscopically. Histopathology showed respiratory epithelium and smooth muscle tissue filled with mucous material consistent with a bronchogenic cyst.

Abbreviations: MRI: magnetic resonance imaging; CT: computed tomography; PCR: polymerase chain reaction.

Introduction

Bronchogenic cysts are the result of aberrations during organogenesis. They may occur in every location along the embryonic foregut and arise from an abnormal branching of the tracheobronchial tube [1,2]. Being a rare condition, bronchogenic cysts have been reported mainly in case reports. They will be found in the mediastinum, posterior of the carina or intrapulmonally. If completely separated from the lung bud they have also been found in the skin, intrapericardially or intradiaphragmatically [3]. Only very few case reports have described bronchogenic cysts caudal of the diaphragma in the retroperitoneum [3,4]. According to the literature bronchogenic cysts occur mostly unilocularly [1].

Case report

A 27-year-old female patient was admitted to our hospital with paraesthesia in her left leg and unintentional loss of weight. As an incidental finding abdominal MRI showed a cystic mass of 54x28 mm, partitioned into septa, in the upper left retroperitoneum. It was not clearly separable from the left adrenal gland. Initially we interpreted the mass as a tumor of the left adrenal. Laboratory serum tests showed no evidence for phaeochromocytoma or extragonadal germ cell tumor. We performed laparoscopic transperitoneal exploration. Intraoperatively the lesion presented as cystic mass, that could be detached from its surrounding tissue and was completely excised. The postoperative course was uneventful, and the patient was dismissed on day three after surgery.

Microbiological analysis revealed no bacteriae. PCR and eight weeks of incubation were negative for mycobacteriae tuberculosis. On histopathological analysis a ciliated pseudostratified columnar epithelium and smooth muscle tissue were seen, confirming the diagnosis of a bronchogenic cyst. No further cystic lesions were found on additional thoracic CT scan.

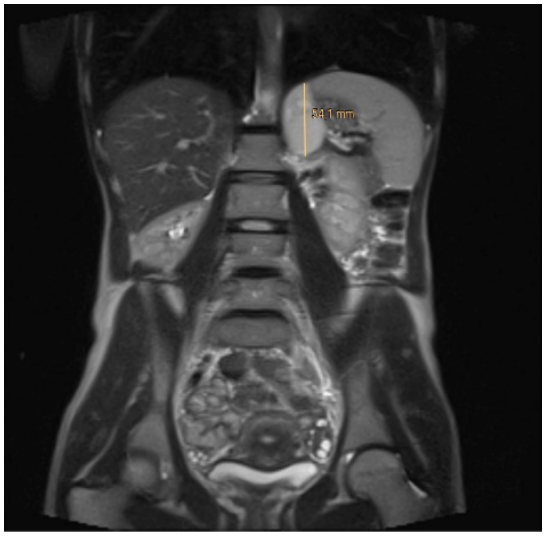

Figure 1. Preoperative MRI

Follow-up examinations revealed that the patient was symptom-free after surgery. However, it is questionable that the initial symptoms were caused by the bronchogenic cyst.

Discussion

Symptoms in conjunction with bronchogenic cysts within the thoracic cavity have been reported to be cough, pain, dyspnea [2].

Correspondence to: Simon Gloger, Augusta Hospital Bochum, Center for Minimally Invasive and Robotic Urology, Witten/Herdecke University, Germany, Tel: +49 234 517 2649; E-mail: simongloger@googlemail.com

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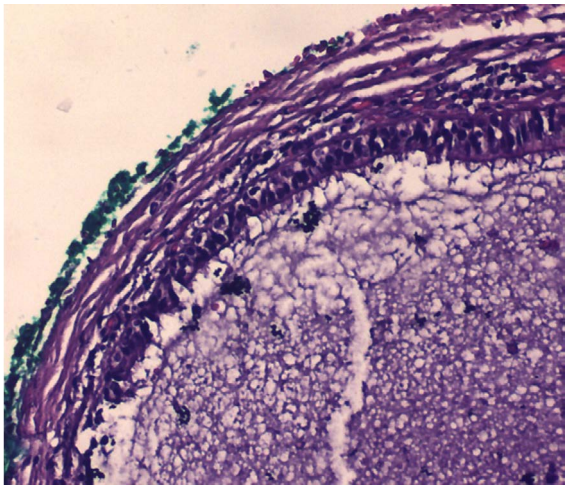

Figure 2. Representative histology of the bronchogenic cyst (10-fold)

Nevertheless, most bronchogenic cysts seem to remain asymptomatic. If symptoms occur, these seem to be produced by complications such as superinfection, hemorrhage or spontaneous perforation due to growth with increasing age [4]. Retroperitoneal bronchogenic cysts have rarely been reported and also seem to remain mostly asymptomatic as well. Occasionally, they have been reported to cause phaeochromocytoma-like symptoms or an early feeling of satiety by compression of the adjacent adrenal glands or the stomach [5-7]. Our patient was asymptomatic.

Bronchogenic cysts are generally benign, only a few reports of malignancy exist [4,8-9]. Malignant degeneration into bronchioloalveolar carcinoma or adenocarcinoma occuring mostly intrathoracally has been reported [10-12]. Due to their rarety a precise risk for malignancy in the retroperitoneum cannot be stated. In our patient no signs of malignancy were found.

In the differential diagnosis of incidental retroperitoneal masses, a broad variety of causes has to be taken into account. Benign masses such as cysts of other origins (enterogenous, urothelial or undifferentiated cysts), benign adrenal tumors such as phaeochromocytoma, hematoma, lymphocele or tuberculoma have to be taken into account. Neoplasms comprise teratoma, extragonadal germ cell tumor, upper pole kidney tumors, malignant phaeochromocytoma, adrenal carcinoma and others [4,13]. CT scan or MRI will not always lead to an unambiguous diagnosis, because bronchogenic cysts can have differing histological and radiologic aspects [14-16].

Needle aspiration will not always result in a clear diagnosis, the material will probably just reveal mucous material [2].

Therapeutically surgery and excision in toto should be performed on suspicion of a bronchogenic cyst [4,17]. Usually, they enlarge over time and the risk of complications will increase. Resection will result in a clear diagnosis [17]. The surgical approach is determined by the location and the characteristics of the cysts. In this case report we used transperitoneal laparoscopic excision.

Conclusion

Bronchogenic cysts of the retroperitoneum are rare, mostly benign and mainly asymptomatic. Surgery with complete excision will lead to a clear diagnosis and should be performed due to the fact that bronchogenic cysts enlarge with over time and the risk of developing hemorrhage, superinfection and spontaneous perforation increases with tumor growth.

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