CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 75 (2020) 140–142

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

A case report- retroperitoneal bronchogenic cyst in relation to the hindgut

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ARTICLE INFO

Article history:
Received 8 July 2020
Received in revised form 15 August 2020
Accepted 5 September 2020
Available online 12 September 2020

Keywords:
Bronchogenic cyst
Retroperitoneal bronchogenic cyst
Psoas cyst
Retroperitoneal cyst
Case report

ABSTRACT

INTRODUCTION: Bronchogenic cysts are developmental anomalies which occur as an abnormal budding of the primitive foregut or tracheobronchial tree. Bronchogenic cysts arise most often in the mediastinum. They can occur in many atypical locations. A retroperitoneal location is exceptionally unusual.
PRESENTATION OF CASE: We present the case of a 46-year-old male with complaints of dyspeptic symptoms, who, on routine evaluation was found to have a mass in the Left iliac fossa. The patient's past medical and surgical history is unremarkable and had no history of trauma. The patient's clinical examination was unremarkable except for mild tenderness in the Left iliac fossa. Routine Pre-operative Blood investigations were within normal limits. Computed Tomography showed 4 × 3.4 cm lesion on the anterior surface of the left psoas muscle just abutting the left ureter. A colonoscopy done revealed normal study. The tumour was excised in-toto through a retroperitoneal approach.
DISCUSSION: Bronchogenic cysts are rare primitive foregut derived developmental aberrations in early embryonic life, typically occurring in the mediastinum. They arise from an abnormal budding of the tracheobronchial anlage of the primitive foregut between the 3rd and 7th weeks of development. Retroperitoneal bronchogenic cysts occur almost equally in men and women. CT and MRI are found to be ideal imaging modalities Surgical resection of these lesions is recommended. Laparoscopic surgery is preferred. Only one case of a retroperitoneal bronchogenic cyst associated with the development of adenocarcinoma has been reported.
CONCLUSION: The differential can be kept in mind when incidentally detected cysts are found during diagnostic imaging for other symptoms.

1. Introduction

Bronchogenic cysts are developmental anomalies which occur as an abnormal budding of the primitive foregut or tracheobronchial tree. Bronchogenic cysts arise most often in the mediastinum just posterior to the carina or main stem bronchus, however, they can occur in many atypical locations, ranging from the neck to the spinal dura mater, to below the diaphragm. Migration may occur if budding is complete.

A retroperitoneal location is exceptionally unusual, accounting for about 0.03% of all tumours [1] first reported in 1953 by Miller et al. [2].

In adults, over half of all bronchogenic cysts are found incidentally during workup for an unrelated problem or during screening.

We present a case where the cyst was in relation to the hindgut.

The work has been reported in line with the SCARE criteria [3].

2. Case presentation

We present the case of a 46-year-old male with complaints of dyspeptic symptoms, who, on routine evaluation was found to have a mass in the Left iliac fossa. The patient's past medical and surgical history is unremarkable and had no history of trauma.

The patient's clinical examination was unremarkable except for mild tenderness in the Left iliac fossa.

Routine Pre-operative Blood investigations were within normal limits.

A contrast enhanced Computed Tomography showed 4 × 3.4 cm solid spherical lesion on the anterior surface of the left psoas muscle at the Lumbar 5-Sacral 1 vertebral level, just abutting the left ureter. There was no evidence of ascites/pleural effusion or bony destruction. A colonoscopy done revealed normal study up to the descending colon.

The tumour was excised in-toto through a retroperitoneal approach. The postoperative course was uneventful and the

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https://doi.org/10.1016/j.ijscr.2020.09.038

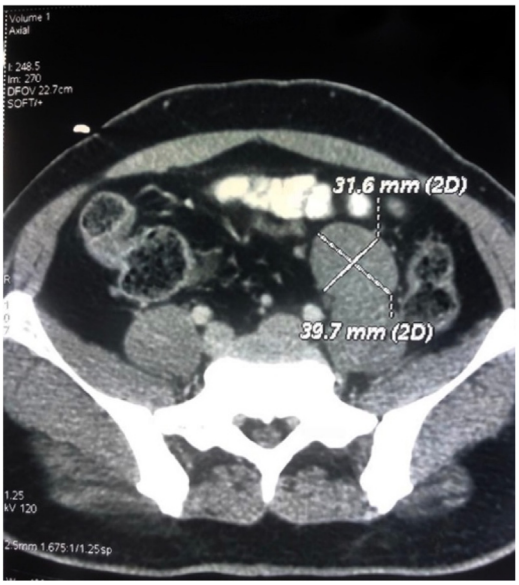

Fig. 1. CECT image showing solid mass.

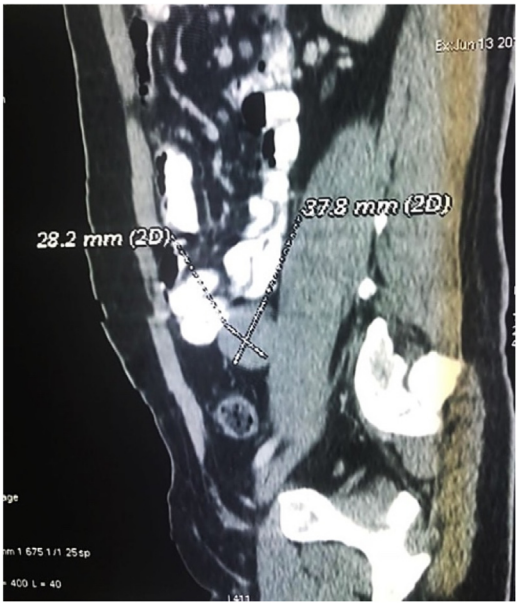

Fig. 2. CECT image With moderate contrast enhancement.

Histopathological Examination showed a bronchogenic cyst (Figs. 1–5).

3. Discussion

Bronchogenic cysts are rare primitive foregut derived developmental aberrations in early embryonic life, typically occurring in the mediastinum. They arise from an abnormal budding of the tracheobronchial anlage of the primitive foregut between the 3rd and 7th weeks of development. When attachment to the primitive foregut persists, the cyst is usually associated with the tracheobronchial tree or the oesophagus. If complete separation occurs, the cyst may occur in other unusual locations, presumably by migration.

Sumiyoshi described that, a lack in the closure of the pericardioperitoneal channel can take place promoting the migration of

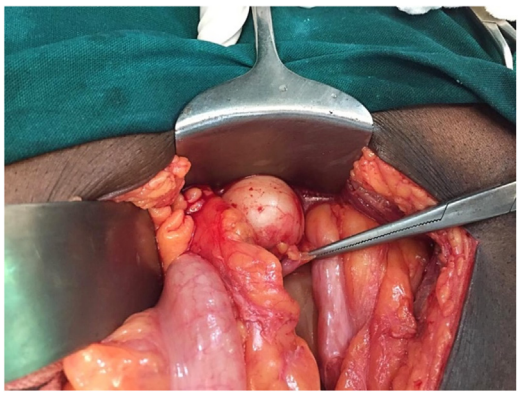

Fig. 3. Intraoperative image of the cyst.

Fig. 4. Cyst excised in toto.

elements of the tracheobronchial tree to the abdominal cavity justifying the presence of bronchogenic cysts below the diaphragm.

Many distant locations have been reported, such as skin [4–6], left ventricle [7] Intra-abdominal [8]. Of the retroperitoneally described bronchial cysts, the localization in 80% of the published cases is to the left of midline and close to the distal pancreas, spleen and left adrenal gland. Retroperitoneal bronchogenic cysts occur almost equally in men and women, mostly (82% of cases) on the left side of the retroperitoneal region [9].

Bronchogenic cysts occur in a wide age range with the youngest affected patient, whose diagnosis was made prenatally at 25 weeks of gestation, operated at 3 months of age [10]. The oldest patient affected was 59 years old [10].

They are mostly asymptomatic. Due to continued epithelial secretion, these lesions have a tendency to become larger as the patients get older. When they become symptomatic, it is usually due to secondary complications.

CT and MRI have been found to be ideal imaging modalities [11].

Histologically, They are almost always lined at least partially by ciliated cuboidal to pseudostratified columnar epithelium, and often filled with mucus. Bronchial components such as cartilage, smooth muscle, elastic fibres, fibrous tissue and seromucinous glands may all be present in the wall.

Surgical resection of these lesions is recommended in order to alleviate any symptoms, to prevent complications such as compression, infection, haemorrhage and future malignant transformation and to establish a definite diagnosis. Laparoscopic surgery has become a more common daily practice for surgeons, and therefore, may serve as a less destructive diagnostic and treatment method for retroperitoneal cystic masses.

Malignant degeneration in bronchogenic cysts is rare and most of the reported cases were located in the thoracic cavity [12].

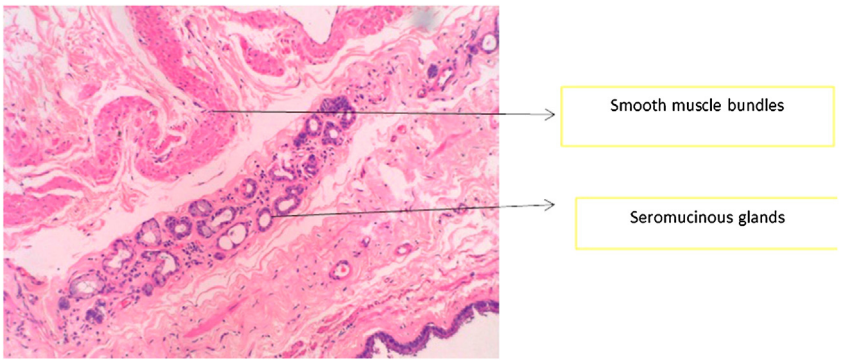

Fig. 5. Microscopic image showing smooth muscle bundles.

Only one case of a retroperitoneal bronchogenic cyst associated with the development of an adenocarcinoma has been reported [13].

4. Conclusion

Bronchogenic cysts are rare and usually occur in relation to the foregut in the retroperitoneum. We present a case which was in relation to the hindgut which has not been presented till now, as far as our review of literature showed.

The differential can be kept in mind when incidentally detected cysts are found during diagnostic imaging for other symptoms.

Declaration of Competing Interest

The authors report no declarations of interest.

Source of funding

None.

Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Conception and design of study: Jayanthan Bhaskar Subramanian, Suprajha K.S, Selvakumar Selvarangam.

Acquisition of data: Jayanthan Bhaskar Subramanian, Suprajha K.S, Selvakumar Selvarangam.

Analysis and/or interpretation of data: Jayanthan Bhaskar Subramanian, Suprajha K.S, Selvakumar Selvarangam.

Drafting the manuscript: Jayanthan Bhaskar Subramanian, Suprajha K.S.

Revising the manuscript critically for important intellectual content: Jayanthan Bhaskar Subramanian, Selvakumar Selvarangam.

Approval of the version of the manuscript to be published: Jayanthan Bhaskar Subramanian, Suprajha K.S, Selvakumar Selvarangam.

Registration of research studies

NA.

Guarantor

Jayanthan Bhaskar Subramanian, Suprajha K.S, Selvakumar Selvarangam.

Provenance and peer review

Not commissioned, externally peer-reviewed.

References

[1] H. Menke, H.D. Roher, H. Gabbert, F. Schweden, Bronchogenic cyst: a rare cause of a retroperitoneal mass, Eur. J. Surg. 163 (4) (1997) 311–314.
[2] R.F. Miller, M. Graub, E.T. Pashuck, Bronchogenic cysts; anomalies resulting from maldevelopment of the primitive foregut and midgut, Am. J. Roentgenol. Radium Ther. Nucl. Med. 70 (1953) 771–785.
[3] R.A. Agha, M.R. Borrelli, R. Farwana, K. Koshy, A. Fowler, D.P. Orgill, For the SCARE Group, The SCARE 2018 statement: updating consensus Surgical CAse REport (SCARE) guidelines, Int. J. Surg. 60 (2018) 132–136.
[4] I.L. Calb, E. Haas, M.G. Lewandowski, L. Maler, Cutaneous bronchogenic cyst: an unusual localization and review of the literature, Br. J. Dermatol. 143 (2000) 1353–1355.
[5] A. Khaled, M. Sfia, B. Fazaa, et al., Multiple cutaneous bronchogenic cysts located on the neck and the scalp. A case report, Acta Dermatovenerol. Alp. Panonica Adriat. 17 (2008) 69–71.
[6] N.R. Kim, H.H. Kim, Y.L. Suh, Cutaneous bronchogenic cyst of the abdominal wall, Pathol. Int. 51 (2001) 970–973.
[7] X. Wei, A. Omo, T. Pan, et al., Left ventricular bronchogenic cyst, Ann. Thorac. Surg. 81 (2006) e13–5.
[8] R. Diaz Nieto, A. Naranjo Torres, M. Gomez Alvarez, et al., Intraabdominal bronchogenic cyst, J. Gastrointest. Surg. 14 (2010) 756–758.
[9] J.M. Chung, M.J. Jung, W. Lee, S. Choi, Retroperitoneal bronchogenic cyst presenting as adrenal tumor in adult successfully treated with retroperitoneal laparoscopic surgery, Urology 73 (2009) 442.e13–442.e15.
[10] P. Bagolan, E. Bilancioni, A. Nahom, A. Trucchi, A. Inserra, M. Neri, V. Spina, C. Giorlandino, Prenatal diagnosis of a bronchogenic cyst in an unusual site, Ultrasound Obstet. Gynecol. 15 (2000) 66–68.
[11] R. Murakami, M. Machida, Y. Kobayashi, et al., Retroperitoneal bronchogenic cyst: CT and MR imaging, Abdom. Imaging 25 (2000) 444–447.
[12] K. Govaerts, P. Van Eyken, G. Verswijvel, K. Van der Speeten, A bronchogenic cyst, presenting as a retroperitoneal cystic mass, Rare Tumors 4 (1) (2012) e13, http://dx.doi.org/10.4081/rt.2012.e13.
[13] S.M. Sullivan, S. Okada, M. Kudo, Y. Ebihara, A retroperitoneal bronchogenic cyst with malignant change, Pathol. Int. 49 (1999) 338–341.