

CASE REPORT

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Bronchogenic cyst of the ileal mesentery: a case report and a review of literature

Adolfo Petrina^{1*}, Carlo Boselli¹, Roberto Ciocchi², Piero Covarelli¹, Emilio Eugeni¹, Marco Badolato¹, Luigi Finocchi¹, Stefano Trastulli², Giuseppe Noya¹

Abstract

Introduction: Bronchogenic cyst is a rare clinical entity that occurs due to abnormal development of the foregut; the majority of bronchogenic cysts have been described in the mediastinum and they are rarely found in an extrathoracic location.

Case presentation: We describe the case of an intra-abdominal bronchogenic cyst of the mesentery, incidentally discovered during an emergency laparotomy for a perforated gastric ulcer in a 33-year-old Caucasian man.

Conclusions: Bronchogenic cyst should be considered in the differential diagnosis of subdiaphragmatic masses, even in an intraperitoneal location.

Introduction

The laryngotracheal groove appears at the end of the third week of gestation in the embryonic foregut [1]; the dorsal portion of the foregut elongates to form the esophagus, and the ventral portion ultimately differentiates into the respiratory tract, with ciliated epithelium lining both the fetal esophagus and trachea [1-3]. Bronchogenic cyst and esophageal duplications are clinical malformations due to abnormal development of the foregut.

Bronchogenic cysts form from accessory ventral buds arising from the foregut distal to the future lung at about the fifth week of intra-uterine life; the majority of bronchogenic cysts have been described in the mediastinum (90%, most commonly in the posterior aspect of the superior mediastinum [4-8]) and they are rarely found in an extrathoracic location; a small number of them have been reported in abdominal location, with prevalence in the retroperitoneal space [9-12].

We report a bronchogenic cyst incidentally discovered as a small intra-peritoneal mass in our patient, who was admitted to our surgical unit for acute abdominal pain due to gastric ulcer perforation.

Case report

Our patient, a 33-year-old Caucasian man, was referred to our institution for acute abdominal pain; the symptoms had begun two days earlier as a mild epigastric pain that localized the following day in the right iliac fossa. He had no instances of nausea or vomiting at admission, a body temperature of 37.2°C, a white blood cell count of 20.30 cells/mm³ (polymorphonuclear leukocytes 84.6%) and sluggish peristalsis. He had a history of misuse of a non-steroidal anti-inflammatory drug (NSAID) used to manage his back pain without any medical prescription.

Plain X-rays of his abdomen did not show pneumoperitoneum or fluid levels; plain X-rays of his chest were also normal. An abdominal ultrasound scan showed a 3.2 cm pre-aortic mass and some fluid in the Douglas pouch (Figure 1).

Our patient underwent a laparotomy, which revealed some purulent fluid with mild inflammation of the appendix; the jejunum and ileus were normal. An exploration of the supramesocolic space revealed a gastric perforation of the anterior wall just before the duodenum (Figures 2 and 3).

An appendectomy and suture ligation of the gastric ulcer was performed. Arising from the ileal mesentery was a 5 cm spherical brown mass that on histological examination was revealed to be a bronchogenic cyst (a cyst lined with pseudostratified columnar and ciliated

* Correspondence: adolfo.petrina@poste.it

¹General and Oncological Surgery Unit, University of Perugia, Perugia, Italy
Full list of author information is available at the end of the article

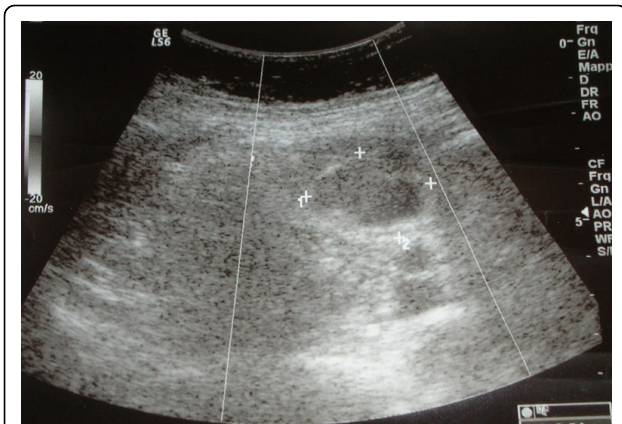


Figure 1 Ultrasonography showing a 3.2 cm pre-aortic mass.

cuboidal epithelium, with a wall of smooth muscle bundles and mucinous glands) (Figures 4 and 5).

Our patient was discharged on the twelfth post-operative day.

Discussion

Bronchogenic cysts originate from an accessory lung bud of the primitive foregut after the third week of embryonic life. Most commonly they migrate caudally with the esophagus and are eventually found in the posterior mediastinum near the carina, attached to the tracheobronchial tree or to the esophagus. Rarely the cyst may separate completely from its origin and may be found in unusual sites, such as pericardium, skin [13,14] or in intra-spinal locations. Most bronchogenic cysts are

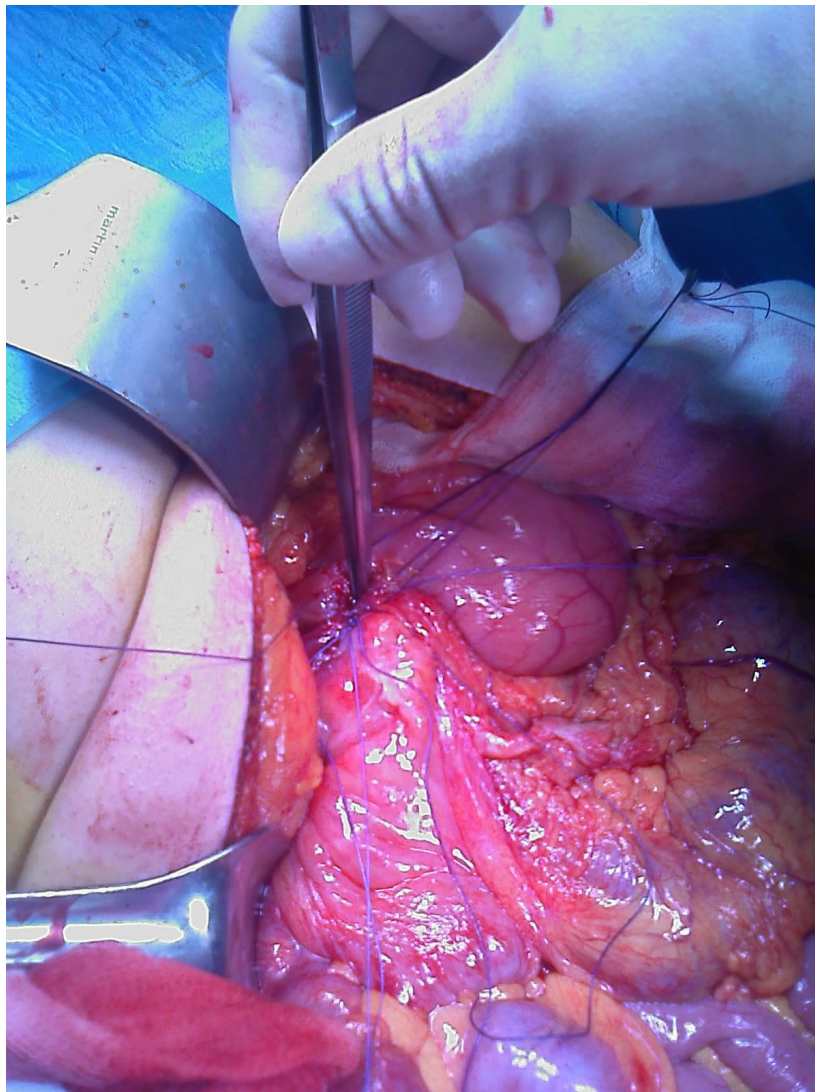


Figure 2 Perforated gastric ulcer.

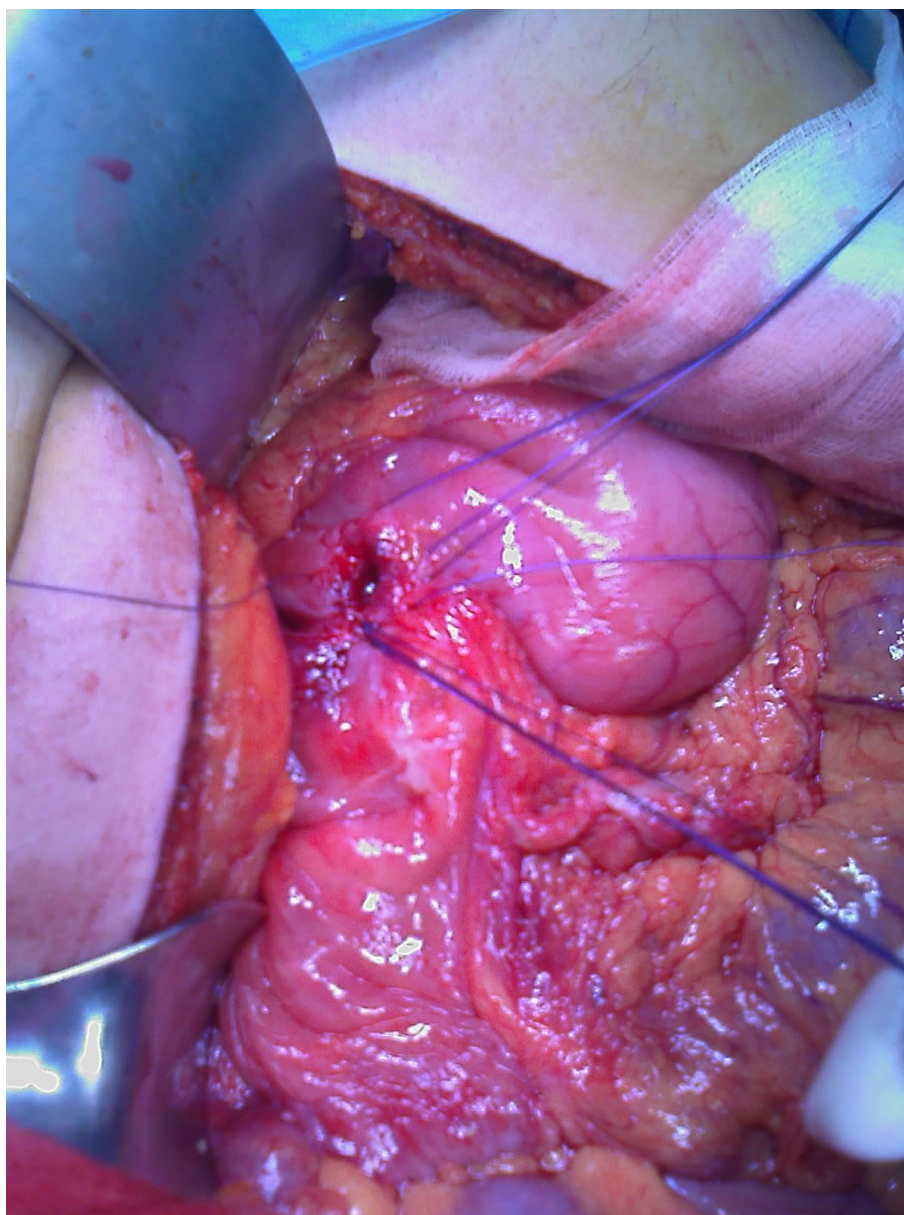


Figure 3 Perforated gastric ulcer before suture ligation.

small and are usually discovered incidentally because patients are asymptomatic, though sometimes there can be epigastric or left upper quadrant abdominal pain. Malignant transformation is rare [15].

A subdiaphragmatic location is extremely rare, with only about 20 cases reported in the literature [13-19]. This is due to the migration of the cyst prior to the fusion of the pleuroperitoneal membrane. Our patient's cyst was unilocular and arose from the ileal mesentery, and was filled with mucin.

Conclusion

Bronchogenic cyst should be considered in the differential diagnosis of subdiaphragmatic masses, even in intraperitoneal location.

Consent

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

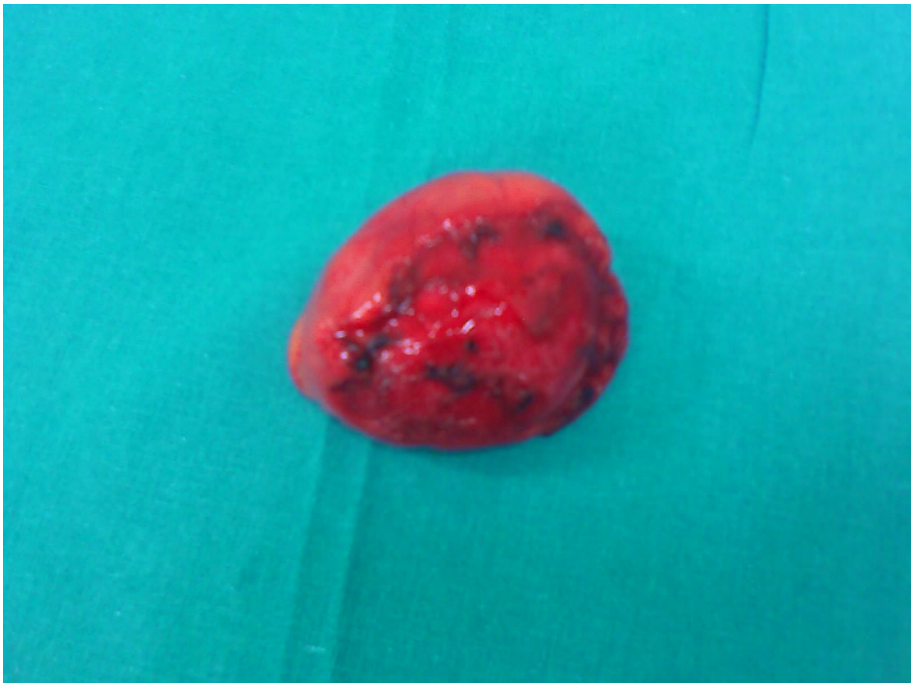


Figure 4 Ileal mesentery mass revealed on histological examination to be a bronchogenic cyst.



Figure 5 Ileal mesentery mass (5 cm) revealed on histological examination to be a bronchogenic cyst.

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Author details

¹General and Oncological Surgery Unit, University of Perugia, Perugia, Italy.
²Emergency and General Surgery Unit, University of Perugia, Terni, Italy.

Authors' contributions

AP analyzed and interpreted the data from our patient; CB and EE were major contributors to the writing of the manuscript. All authors read and approved the final manuscript

Competing interests

The authors declare that they have no competing interests.

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References

1. Skandalakis JE, Gray SW, Ricketts R: **The esophagus**. In *Embryology for Surgeons*. Edited by: Skandalakis JE, Gray SW. Baltimore, MD: Williams and Wilkins, 2 1994:65-112.
2. Moore TE, Parson : **The developing human**. *Clinically Oriented Embryology* Philadelphia, PA: WB Saunders, 5 1993, 628-644.
3. DeLorimier AA: **Congenital malformations and neonatal problems of the respiratory tract**. In *Pediatric Surgery*. Edited by: Welch KJ, Randolph JG, Ravitch MM, et al. Chicago, IL: Yearbook Medical Publishers, 4 1986:631-648.
4. Laberge JM, Puligandla P, Flageole H: **Asymptomatic congenital lung malformations**. *Semin Pediatr Surg* 2005, **14**:16-33.
5. Chen CC: **Bronchogenic cyst in the interatrial septum with a single persistent left superior vena cava**. *J Chin Med Assoc* 2006, **69**:89-91.
6. Ibanez Aguirre J, Marti Cabane J, Bordas Rivas JM, Valenti Ponsa C, Erro Azcarate JM, De Simone P: **A lump in the neck: cervical bronchogenic cyst mimicking a thyroid nodule**. *Minerva Chir* 2006, **61**:71-72.
7. Ustundag E, Iseri M, Keskin G, Yayla B, Muezzinoglu B: **Cervical bronchogenic cysts in head and neck region**. *J Laryngol Otol* 2005, **119**:419-423.
8. Ozel SK, Kazez A, Koseogullari AA, Akpolat N: **Scapular bronchogenic cysts in children: case report and review of the literature**. *Pediatr Surg Int* 2005, **21**:843-845.
9. Liang MK, Yee HT, Song JW, Marks JL: **Subdiaphragmatic bronchogenic cysts: a comprehensive review of the literature**. *Am Surg* 2005, **71**:1034-1041.
10. Jo WM, Shin JS, Lee IS: **Supradiaphragmatic bronchogenic cyst extending into the retroperitoneum**. *Ann Thorac Surg* 2006, **81**:369-370.
11. Hedayati N, Cai DX, McHenry CR: **Subdiaphragmatic bronchogenic cyst masquerading as an "adrenal incidentaloma"**. *J Gastrointest Surg* 2003, **7**:802-804.
12. Ingu A, Watanabe A, Ichimiya Y, Saito T, Abe T: **Retroperitoneal bronchogenic cyst: a case report**. *Chest* 2002, **121**:1357-1359.
13. Reichelt O, Grieser T, Wunderlich H, Moller A, Schubert J: **Brochogenic cyst: a rare differential diagnosis of retroperitoneal tumors**. *Urol Int* 2000, **64**:216-219.
14. Zvulunov A, Amichai B, Grunwald MH, Avinoach I, Halevy S: **Cutaneous bronchogenic cyst: delineation of a poorly recognized lesion**. *Pediatr Dermatol* 1998, **15**:277-281.
15. Sullivan SM, Okada S, Kudo M, Ebihara Y: **A retroperitoneal bronchogenic cyst with malignant change**. *Pathol Int* 1999, **49**:338-341.
16. Braffman B, Keller R, Stein Gendal E, Finkel SI: **Subdiaphragmatic bronchogenic cyst with gastric communication**. *Gastrointest Radiol* 1988, **13**:309-311.
17. Haddadin WJ, Reid R, Jindal RM: **A retroperitoneal bronchogenic cyst: a rare cause of a mass in the adrenal region**. *J Clin Pathol* 2001, **54**:801-802.
18. Foerster HM, Sengupta EE, Montag AG, Kaplan EL: **Retroperitoneal bronchogenic cyst presenting as an adrenal mass**. *Arch Pathol Lab Med* 1991, **115**:1057-1059.

19. Sauvat F, Fusaro F, Jaubert F, Galifer B, Revillon Y: **Paraesophageal bronchogenic cyst: first case reports in pediatric**. *Pediatr Surg Int* 2006, **22**:849-851.

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