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Case Report

Presternal Subcutaneous Bronchogenic Cyst Presenting as an Infected Sebaceous Cyst in an Adult: A Case Report

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Abstract

Background: Bronchogenic cysts are congenital foregut malformations that arise most often in the mediastinum or lung. Subcutaneous bronchogenic cysts of the chest wall are rare, usually present in childhood, and are frequently mistaken clinically for sebaceous or epidermoid cysts, especially when infected.

Case Presentation: A 54-year-old man presented with a 15-year history of a swelling over the front of the upper chest, with pain for one month. Ultrasonography showed a well-defined oval cystic lesion (4.7 × 2.8 × 3.2 cm) with thick echogenic contents in the subcutaneous plane over the manubrium sterni, with surrounding fat stranding and no communication with the thoracic cavity; the underlying sternal cortex was normal. A provisional diagnosis of infected sebaceous cyst was made. Under total intravenous anaesthesia the thick-walled cyst, which contained about 50 ml of frank pus and extended up to the suprasternal notch, was excised in toto. Histopathology showed a unilocular cyst lined by pseudostratified ciliated columnar epithelium, with a congested vascular wall infiltrated by lymphocytes, consistent with a bronchogenic cyst. Recovery was uneventful. An incidental adenomatous nodule of the left thyroid lobe was also noted.

Conclusion: Bronchogenic cyst should be considered in the differential diagnosis of midline presternal and suprasternal cystic swellings, including those in adults and those presenting as infected "sebaceous" cysts. Complete excision with routine histopathological examination of every excised cyst establishes the diagnosis.

Keywords: bronchogenic cyst; subcutaneous; presternal; chest wall; sebaceous cyst; ciliated epithelium.

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Introduction

Bronchogenic cysts are congenital malformations of the foregut that result from abnormal budding of the tracheobronchial tree during embryonic development. Most are found in the mediastinum or lung parenchyma [1,2].

Ectopic cysts in the skin and subcutaneous tissue are uncommon; the first presternal example was reported by Seybold and Clagett in 1945 [3], and a series of 30 cutaneous and subcutaneous cases was reviewed by Fraga and colleagues in 1971 [4].

More than 80 cutaneous or subcutaneous bronchogenic cysts have since been reported in the English-language literature, most in children, and only a handful in adults [5].

The commonest sites are the suprasternal notch, presternal area, neck and scapular region [5,6]. Because they are small, superficial and usually asymptomatic, these cysts are typically diagnosed as sebaceous, epidermoid or dermoid cysts before surgery and are recognised only on histopathology. We report an adult with a long-standing presternal swelling that became infected and was proven to be a bronchogenic cyst after excision.

Case Presentation

History and examination: A 54-year-old man (weight 81 kg) presented with a swelling over the front of the chest present for 15 years, with pain for the preceding one month. He had no significant past medical history. At admission his vital signs were stable (blood pressure 120/80 mm Hg, pulse 78/min, SpO2 98% on room air, temperature 98 °F). Cardiovascular, respiratory, central nervous system and abdominal examinations were unremarkable. Local examination revealed a 6 × 5 cm cystic, tender swelling at the presternal region.

Investigations: Routine haematological and biochemical investigations were within normal limits, and viral serology (HIV-1/2, HBsAg, anti-HCV) was negative (Table 1). The electrocardiogram showed sinus rhythm, and a physician opinion was obtained for anaesthetic fitness.

Table 1: Pre-operative laboratory investigations (4 August 2025)

Test	Result	Reference interval (as reported by laboratory)
Haemoglobin	13.3 g/dl	13–16 g/dl (male)
Packed cell volume	41 %	40–54 %
Total leucocyte count	5,900 cells/cumm	4,000–10,000 cells/cumm
Differential count	P 66, L 30, M 0, E 4, B 0 %	P 40–75, L 20–50, E 1–6 %
Platelet count	1.52 lakh/µl	1.5–4 lakh/µl
Bleeding time / Clotting time	1 min 30 s / 3 min 45 s	1–3 min / 2–6 min
Blood group	O positive	–
Random blood glucose	75 mg/dl	80–120 mg/dl
Blood urea	21 mg/dl	20–40 mg/dl
Serum creatinine	0.98 mg/dl	0.8–1.4 mg/dl (male)
HIV-1/2, HBsAg, anti-HCV	Non-reactive / negative	–

Ultrasonography of the neck and chest wall showed a well-defined oval cystic lesion measuring about 4.7 × 2.8 × 3.2 cm with thick echogenic internal contents in the subcutaneous plane of the anterior chest wall over the manubrium sterni, with surrounding fat stranding.

There was no communication with the thoracic cavity, and the underlying manubrial cortex and both sternoclavicular joints were normal.

The radiological impression was a likely infected cystic lesion. Incidentally, an oval, heterogeneous, hyperechoic nodule with internal vascularity (about 3.4 × 2.7 cm) was seen in the left thyroid lobe (reported as an adenomatous nodule, with FNAC correlation suggested), a 0.9 × 0.5 cm colloid nodule in the right lobe, and a few benign-appearing upper cervical lymph nodes. The parathyroid regions, isthmus (0.3 cm), salivary glands and neck vessels were normal.

Treatment: With a diagnosis of infected sebaceous cyst, the patient underwent excision under total intravenous anaesthesia (TIVA) on 4 August 2025. Intra-operatively, the thick-walled cyst contained about 50 ml of frank pus and extended superiorly up to the suprasternal notch. The cyst was excised in toto and sent for histopathology. Peri-operative management included tetanus toxoid, intravenous ceftriaxone (1 g twice daily), pantoprazole, ondansetron, intramuscular piroxicam and intravenous paracetamol as required, with intravenous fluids. There were no post-operative complications. The patient was discharged on the first post-operative day on oral cefpodoxime–clavulanate, a ketoprofen–paracetamol combination, a proton-pump inhibitor and sucralfate for three days, with advice on wound care and review after three days.

Histopathology: Grossly, the specimen was a single skin-covered cystic soft-tissue mass measuring 5 × 4 × 3 cm. The cut surface showed a unilocular cyst filled with grey-brown material. Microscopically, the cyst was lined by pseudostratified ciliated columnar epithelium; the wall showed congested blood vessels and lymphocytes (Figures 1 and 2). The histological impression was bronchogenic cyst.

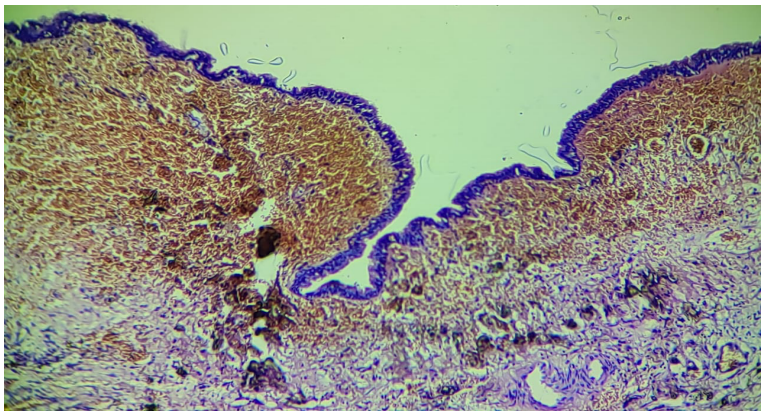


Figure 1: Photomicrograph of the cyst wall .The cyst lumen is lined by a basophilic respiratory-type epithelium thrown into folds over a congested, vascular fibro-inflammatory wall.

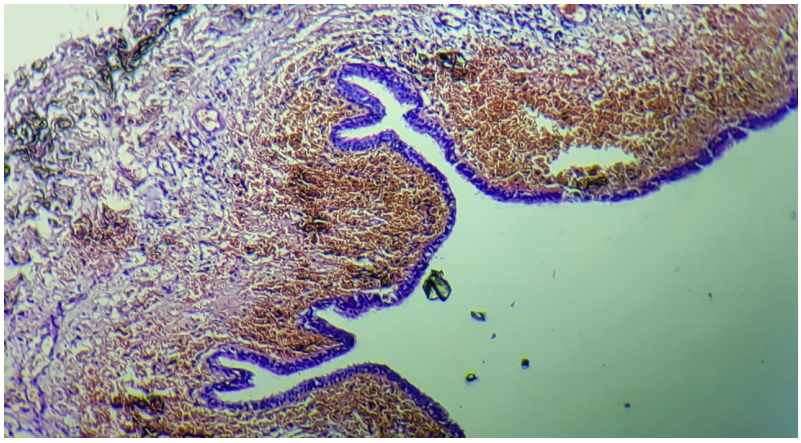


Figure 2: Photomicrograph of the cyst wall showing the folded pseudostratified columnar epithelial lining and underlying congested stroma with inflammatory cells.

Outcome and follow-up: The wound healed and the patient was reviewed on 8 August 2025.

Discussion

Bronchogenic cysts are thought to arise when a bud of the ventral foregut separates from the developing tracheobronchial tree. Two mechanisms are usually proposed for ectopic sites: the cyst is pinched off early, or cells migrate away together with the growing bud, which may allow displacement to the chest wall and skin [6,7]. Most reported subcutaneous cysts become apparent in infancy or childhood [7,8], including a chest-wall case in an 11-month-old boy [9]. Our patient, in whom the swelling had been present for about 15 years before symptoms, illustrates that these lesions can remain quiescent and come to attention only in adulthood. A 2022 review found only five adult subcutaneous cases, all in men and four of them presternal [5]; a presternal location in a middle-aged man, as here, therefore fits the pattern of the few reported adults.

Infection is the usual reason such cysts present acutely. Presternal and scapular bronchogenic cysts have been mistaken for abscesses and drained before the diagnosis was made [10,11], and recurrent infection requiring drainage preceded the diagnosis in a child with a scapular cyst [7]. The one-month history of pain, tender swelling, fat stranding on ultrasonography and 50 ml of frank pus at surgery in our patient indicate a secondarily infected cyst. Infection can obscure the typical imaging appearance: bronchogenic cysts are ordinarily well-defined round or oval lesions that do not enhance after contrast, but secretion, infection or haemorrhage makes the contents heterogeneous and the lesion harder to distinguish from other cysts [1,5]. The thick echogenic contents seen in our case are compatible with proteinaceous or purulent material. The preoperative differential diagnosis includes sebaceous (epidermoid) cyst, dermoid cyst, lipoma, abscess, pilonidal cyst, thyroglossal duct cyst and branchial cyst, and the correct diagnosis is often made only on histopathology [5,12]. A midline position favours a bronchogenic or thyroglossal origin, whereas a branchial cyst lies along the anterior border of sternocleidomastoid. Histologically, a bronchogenic cyst is lined by ciliated pseudostratified columnar (respiratory-type) epithelium, which may be accompanied by smooth muscle, cartilage and seromucinous glands in the wall [5,7].

A sebaceous or epidermoid cyst, by contrast, is lined by keratinising squamous epithelium and contains keratinous material, so the finding of a ciliated respiratory lining in the present specimen excludes a sebaceous cyst. Lymphoid tissue, which is characteristic of branchial cleft cysts, is rarely seen in bronchogenic cysts [12]; in our case the lymphocytes were confined to the inflamed wall. We note that cartilage, smooth muscle and glands were not described in the report; the diagnosis rests on the ciliated pseudostratified lining, and the inflamed wall may have lost some of these features.

Imaging is useful mainly to define extent. Ultrasonography, CT and MRI show a cystic lesion without enhancement, and MRI gives the best definition [1,5]; in our patient ultrasonography showed that there was no communication with the thoracic cavity and that the sternum was intact, which supports a purely subcutaneous cyst. Fine-needle aspiration can help exclude other pathology but is not definitive treatment, since the epithelial lining is not removed and rapid recurrence is possible [5]. Complete surgical excision of the cyst with its lining is the treatment of choice [5,7,8]; it removes the risk of recurrent infection and of malignant degeneration, which has been cited as a reason for surgery [7]. Outcomes after complete excision of subcutaneous and chest-wall cysts have been good, with no recurrence reported in a paediatric series and in an adult presternal case [13,14]. A left thyroid adenomatous nodule (about 3.4 cm) was found incidentally on the same scan.

We are not aware of any established relationship between this nodule and the bronchogenic cyst, and we regard it as a coincidental finding. Its further evaluation, including FNAC correlation as suggested by the radiologist, follows standard thyroid-nodule management based on ultrasonographic features and nodule size [15].

Conclusion

Bronchogenic cyst, although rare, should be included in the differential diagnosis of presternal and suprasternal cystic swellings in adults as well as children, including those that present as infected "sebaceous" cysts. Complete excision is curative and prevents recurrent infection. Every excised cyst, however innocuous it appears, should be sent for histopathological examination, because this is the only way a bronchogenic cyst is recognised with certainty.

References

1. McAdams HP, Kirejczyk WM, Rosado-de-Christenson ML, Matsumoto S. Bronchogenic cyst: imaging features with clinical and histopathologic correlation. Radiology. 2000; 217(2):441–446.
2. Suen HC, Mathisen DJ, Grillo HC, et al. Surgical management and radiological characteristics of bronchogenic cysts. Ann Thorac Surg. 1993;55(2):476–481.
3. Seybold WD, Clagett OT. Presternal cyst; rep ort of a case. J Thorac Surg. 1945;14:217–220.
4. Fraga S, Helwig EB, Rosen SH. Bronchogenic cysts in the skin and subcutaneous tissue. Am J Clin Pathol. 1971;56(2):230–238. doi:10.10 93/ajcp/56.2.230
5. Zheng CY, Su SY, Huang RB. Giant subcutaneous bronchogenic cyst in the intergluteal cleft region of an adult: a case report and literature review. BMC Med Imaging. 2022. doi:10.1186/s12880-022-00853-y
6. 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(10):843–845. doi:10.1007/s00383-005-1531-5
7. Quipungo EV, Gagliotti GC, da Rocha RFC, Felipe-Silva A. Subcutaneous bronchogenic cyst in a child: case report. Autopsy Case Rep. 2012;2(2):49–51.
8. Sakaguchi T, Hamada Y, Nakamura Y, Shirai T, Hamada H, Kon M. Subcutaneous bronchogenic cyst: report of five cases and review of the literature. J Pediatr Surg Case Rep. 2017;19:9–15. doi:10.1016/j.epsc.2017.02.003
9. Ayub A, Abid AM, Tran S, Bowen-Jallow K. Subcutaneous bronchogenic cyst of the chest wall. J Pediatr Surg Case Rep. 2020;52:10 1337. doi:10.1016/j.epsc.2019.101337
10. Zhu L, Davies J, Kimble RM. Subcutaneous bronchogenic cyst in the scapular region presenting as an acute abscess. J Pediatr Surg Case Rep. 2014;2(11):487–488. doi:10.1016/j.epsc.2014.09.012
11. Shilova M, Wong MCL, Davies J, Kimble R. A bronchogenic cyst presenting as a presternal abscess. J Pediatr Surg Case Rep. 2020;63:10 1653. doi:10.1016/j.epsc.2020.101653
12. Jagdale A, et al. Bronchogenic cyst over sternum – an unusual location. J Clin Diagn Res. 2018. doi:10.7860/JCDR/2018/22689.11181
13. Cohn JE, Rethy K, Prasad R, Pascasio JM, Annunzio K, Zwillenberg S. Pediatric bronchogenic cysts: a case series of six patients highlighting diagnosis and management. J Invest Surg. 2020;33(6):568–573. doi:10.1080/08941939.2018.1527419
14. Mangiameli G, Arame A, Le Pimpec-Barthes F. Giant presternal subcutaneous bronchogenic cyst: a rare but possible occurrence. Asian Cardiovasc Thorac Ann. 2020.
15. Haugen BR, et al. 2015 American Thyroid Association management guidelines for adult patients with thyroid nodules and differen tiated thyroid cancer. Thyroid. 2016;26(1):1–133. doi:10.1089/thy.2015.0020.