

Journal of Social Sciences (COES&RJ-JSS)

ISSN (E): 2305-9249 ISSN (P): 2305-9494 ISNI: 0000 0005 0179 6351

Publisher: Centre of Excellence for Scientific & Research Journalism, COES&RJ LLC

Online Publication Date: 1st January 2025

Online Issue: Volume 14, Number 1, January 2025

<https://doi.org/10.25255/jss.2025.14.1.24.28>



Case Report on Bronchogenic Cyst

Dr. Almothana Aburumman, MD

Loyola University, Chicago, USA

Abstract

The case involves a 58-year-old man, known to have hypertension, hyperlipidemia, Type-2 diabetes, and a history of tobacco use. He was clinically diagnosed with a mediastinal mass and a left lower lung nodule on a prior CT scan. The patient, a medical professional, had undergone cervical spinal surgery and a colonoscopy, which did not reveal any lethal findings. The patient did not present severe symptoms such as weight loss, chest pain, or breathing problems. Desperate to proceed with the surgery, he consented to a sternotomy and mediastinal mass excision, which revealed a bronchogenic cyst. During the postoperative period, the patient remained asymptomatic and had no acute cardiopulmonary abnormalities. This case study demonstrates the need for detailed radiographic analysis and timely bronchogenic cyst excision, especially in patients with severe underlying conditions. It highlights the importance of maintaining a high index of suspicion in asymptomatic patients and the effectiveness of surgical intervention in such cases.

Keywords

Bronchogenic cyst, mediastinal mass, sternotomy, mediastinal resection, hypertension, hyperlipidemia, type 2 diabetes, lung nodule.

Citation:

Aburumman, Almothana (2024) Case Report on Bronchogenic Cyst; Journal of Social Sciences (COES&RJ-JSS), Vol.14, No.1, pp:24-28; DOI:10.25255/jss.2025.14.24.1.28 <https://centrefexcellence.net/J/JSS/PDFs/jss.2025.14.1.24.28.pdf>

Introduction

Bronchogenic cysts are developmental anomalies of the foregut, usually found in the mediastinum or within the lung parenchyma. They are relatively infrequent, occurring in 1 per 42,000 admissions, and are usually diagnosed incidentally following imaging studies for other pathologies. These cysts are clinically latent. However, they can be complicated by infection, rupture, or compression of neighboring structures, which requires surgical intervention. Advanced imaging techniques such as CT and MRI help assess these cysts and plan appropriate management. The recommended treatment to avoid such outcomes is surgical resection. This approach is believed to be necessary even in scenarios involving a 58-year-old male with multiple comorbidities who presented with suspicions of a mediastinal mass that could actually be a bronchogenic cyst. His medical history includes chronic diseases such as hypertension, hyperlipidemia, diabetes, and a history of tobacco use. The bronchogenic cyst, an incidental finding, should be well managed to achieve the best results.

Case Presentation

The patient is a 58-year-old male who had prior surgeries and was advised by a medical practitioner. The main problems of this patient are a mediastinal mass and a nodule in the lower left lobe of the lung. His chronic conditions include hypertension, hyperlipidemia, and type 2 diabetes mellitus. He currently suffers from cervical spinal issues and tobacco dependence; he smokes approximately 0.7 packs per day. Colonoscopies were benign in 2015, 2020, and 2024. His daily medication profile consists of Metformin 500 mg twice daily, Hydrochlorothiazide 25 mg once daily, Losartan 100 mg once daily, Rosuvastatin 10 mg once daily, and Esomeprazole 40 mg once daily. He has no known allergies. A review of his family history shows that his mother had breast cancer, a thyroid disorder, and diabetes mellitus, while his brother had heart disease and colon cancer. Regarding social history, the patient has lost his spouse, is a drinker but does not use drugs, and is sexually active with females.

During the review of systems (ROS), the patient denied chills, fever, cough, nausea, vomiting, and myalgia but acknowledged chest pain. His vitals were taken with the patient's temperature reaching a maximum of 98.3°F, an average pulse rate of 95 bpm (with a range of 86 bpm - 103 bpm), an average systolic blood pressure of 141 mmHg, and an average diastolic pressure of 93 mmHg. The patient was fully awake and coherent but experienced discomfort when performing the routine physical examination. There were no conjunctival injections or scleral icterus. PERRL and EOMI were noted, and the head, eyes, ears, nose, and throat examination showed no abnormalities. The cardiac assessment and oxygen saturation were normal, with a regular rate and rhythm. The pulmonary examination was normal on bilateral auscultation without wheeze, rhonchi, or rales. A Prevena chest tube was placed. His abdomen was not firm or painful to touch, and there was no appearance of bowel distension. The patient exhibited a normal range of motion of the extremities without any sign of peripheral edema and appeared alert and oriented to person, place, time, and situation (AAOx4) with grossly intact motor and sensory systems.

A CT scan done in the fall showed a mediastinal mass together with a left lower lobe lung nodule. Other diagnostic tests, such as laboratory tests, confirmed these findings.

Radiology is invaluable in providing precise information for the next course of treatment (Beigelman-Aubry et al., 2016). The mediastinal mass was confirmed as a bronchogenic cyst, a lesion that can develop from a congenital abnormality. However, it will not show any symptoms in this patient if left untreated.

Before surgery, the patient underwent preadmission optimization and patient education to enhance his readiness for the procedure. This included discussions about the surgery, the risks involved, aftercare, and the expected recovery period. On the day of the operation, the patient was taken to the OR for a sternotomy and resection of the mediastinal mass (Almeida & Heller, 2021). The surgical team successfully excised the mass, and pathological examination confirmed it to be a bronchogenic cyst. Postoperative critical care management focused on checking for complications, pain control, and monitoring the mediastinal chest tube (Gould et al., 2013).

Special attention was paid to any acute cardiopulmonary problems; however, no such problems were identified. His postoperative course was uneventful, as he had no complications or signs of discomfort after the surgery. Postoperative care involved physical examination and follow-up to monitor his progress, check for possible complications, and determine any subsequent treatments (Zabaglo & Sharman, 2023). The excision of the mediastinal cyst and the detailed treatment plan before, during, and after the operation is a perfect example of why a team approach is crucial in managing complex cases.

There is still concern about timely and appropriate diagnosis, especially in asymptomatic individuals with other severe diseases, in order to avoid complications from bronchogenic cysts (Gould et al., 2013). This early recovery demonstrates the effectiveness of surgical intervention in the management of bronchogenic cysts and contributes to the growing body of knowledge on the management and treatment of such cases.

Discussion

Bronchogenic cysts are congenital abnormalities derived from the foregut and present in the mediastinum or the parenchyma of the lung. These are cysts lined by epithelium and may persist without symptoms for years, and they are often only discovered during imaging for other conditions (Limaïem & Mlika, 2022). Based on the case of the 58-year-old male patient, it is evident that bronchogenic cysts can be found in asymptomatic patients, particularly if they have comorbidities. This underscores the necessity to continue the search for such lesions and further patient evaluation even with no signs of respiratory infection (St-Georges et al., 2020).

The pathology of bronchogenic cysts is considered to be the anomalous development of the tracheobronchial tree during fetal development. These cysts are classified into three main types based on their location: endobronchial, intrapulmonary, and mediastinal. The most widespread are mediastinal cysts. Being a patient with a mediastinal cyst can cause certain issues like infection, rupture, or even compression of other structures if the cyst is not treated (Stocker, 2009). Diagnostic difficulties are observed in these cysts because the disease, often characterized by icteric forms, is accompanied by attacks of hepatitis

due to the need to use invasive methods for the identification of cystic formations. CT and MRI are favored as they provide high-resolution anatomical information which can be used to differentiate bronchogenic cysts from other mediastinal masses such as thymomas, lymphomas, and pericardial cysts (McAdams et al., 2000).

Surgical resection is the common management strategy for bronchogenic cysts, particularly when the cyst becomes symptomatic or is prone to complications. Regarding conservative strategies, the primary method is observation; this strategy poses a high risk of future attacks (Weber et al., 2004). In this patient's case, factors concerning mediastinal masses warranted intervention regardless of symptomatology. Supporting this active management, other studies show that surgical excision of bronchogenic cysts is more effective and prevents complications, as well as allowing for additional histopathological analysis (Cohen et al., 1991).

The patient's health administration plan involved preoperative assessment, sternal opening, and excision of the mediastinal mass, which was confirmed as a bronchogenic cyst in the final histopathology report. The main interventions in the postoperative period included identifying complications, managing pain, and monitoring the patency and function of the chest tubes as required (Weber et al., 2004). The lack of significant concerns in the immediate postoperative period and the absence of acute cardiovascular and pulmonary issues underscore the technical feasibility of the surgical approach and the importance of pre- and postoperative care.

The management of patients with bronchogenic cysts has been suggested to include scheduled clinical examinations and radiography to detect the recurrence of cysts and the development of new ones. In this case, the patient was expected to attend follow-up visits to assess the recovery process and evaluate any other complications that might develop (Cohen et al., 1991). The outcome of this case contributes to the existing literature affirming the effectiveness of surgical management of patients with bronchogenic cysts, particularly in patients with serious clinical situations who are predisposed to other serious postoperative adverse events (McAdams et al., 2000).

Conclusion

In conclusion, this case of a 58-year-old male with a bronchogenic cyst highlights the importance of accurate diagnosis and surgical intervention despite the lack of symptoms at the onset and the significant comorbidities of the patient. The resection and the uneventful postoperative course provide evidence of the benefits of a primarily aggressive surgical approach. Clinically, it is clear that early diagnosis and intervention are of paramount importance, especially in dealing with bronchogenic cysts. Further research efforts should be directed toward refining the diagnostic methods for the presentation of bronchogenic cysts, assessing and enhancing the management of bronchogenic cysts through non-interventional methods to optimize the quality of life of the concerned patients, and reducing morbidities and side effects in patients with untreated bronchogenic cysts.

References:

Almeida PT, Heller D. Anterior Mediastinal Mass. [Updated 2024 Apr 19]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK546608/>

Beigelman-Aubry, C., Dunet, V., & Brun, A.-L. . (2016). CT imaging in pre-therapeutic assessment of lung cancer. *Diagnostic and Interventional Imaging*, 97(10), 973–989. <https://doi.org/10.1016/j.diii.2016.07.010>

Zabaglo, M., & Sharman, T. (2023, July 3). Postoperative wound infection. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK560533/>

Gould, M. K., Donington, J., Lynch, W. R., Mazzone, P. J., Midthun, D. E., Naidich, D. P., & Wiener, R. S. (2013). Evaluation of Individuals With Pulmonary Nodules: When Is It Lung Cancer? *Chest*, 143(5 Suppl), e93Se120S. <https://doi.org/10.1378/chest.12-2351>

Limaiem, F., & Mlika, M. (2022). Bronchogenic Cyst. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK536973/>

McAdams, H. P., Kirejczyk, W. M., Rosado-de- Christenson, M. L., & Matsumoto, S. (2000). Bronchogenic Cyst: Imaging Features with Clinical and Histopathologic Correlation. *Radiology*, 217(2), 441–446. <https://doi.org/10.1148/radiology.217.2.r00nv19441>

St-Georges, R., Deslauriers, J., Duranceau, A., Vaillancourt, R., Deschamps, C., Beauchamp, G., Pagé, A., & Brisson, J. (2020). Clinical spectrum of bronchogenic cysts of the mediastinum and lung in the adult. *The Annals of Thoracic Surgery*, 52(1), 6–13. [https://doi.org/10.1016/0003-4975\(91\)91409-o](https://doi.org/10.1016/0003-4975(91)91409-o)

Stocker, J. T. (2009). CYSTIC LUNG DISEASE IN INFANTS AND CHILDREN. *Fetal and Pediatric Pathology*, 28(4), 155–184. <https://doi.org/10.1080/15513810902984095>

Weber, T., Roth, T. C., Beshay, M., Herrmann, P., Stein, R., & Schmid, R. A. (2004). Video-assisted thoracoscopic surgery of mediastinal bronchogenic cysts in adults: a single-center experience. *The Annals of Thoracic Surgery*, 78(3), 987–991. <https://doi.org/10.1016/j.athoracsur.2004.03.092>

Zabaglo, M., & Sharman, T. (2023, July 3). Postoperative wound infection. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK560533/>