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IMAGE CORRESPONDENCE

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Unusually severe neonatal presentation of mediastinal bronchogenic cyst

Francisco Sanchez-Ferrer PhD[1,2] | Ana Pilar Nso-Roca[1,2]

[1]Facultad de Medicina Universidad Miguel Hernández de Elche, Sant Joan d'Alacant, España

[2]Hospital Universitario de San Juan de Alicante, FISABIO, Alicante, España

Correspondence
Francisco Sanchez-Ferrer, PhD, Facultad de Medicina Universidad Miguel Hernández de Elche, Sant Joan d'Alacant, España.
Email: f.sanchez@umh.es

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Abstract

Bronchogenic cysts are rare congenital malformations that occur in adults and children, with differences in distribution and presentation. We present the case of a newborn who initiated respiratory distress from the first minutes of life, presenting with hypoventilation and rightward displacement of the cardiac impulse, requiring oxygen therapy and intubation. The first radiograph shows a left pulmonary emphysema. The computerized axial tomography revealed a large mediastinal mass causing an obstructive syndrome of the left bronchus. The mass was successfully excised, resulting in a favorable clinical evolution. Although the presentation of our case is exceptional, it is worth noting that while most bronchogenic cysts are asymptomatic, they can occur in childhood, even from birth, as in our case.

KEYWORDS
bronchogenic cysts, mediastinal mass, neonate, pulmonary emphysema, respiratory distress

To the editor,

We report the case of a newborn (36 + 0 weeks, 3190 g) with no notable obstetric history and normal fetal ultrasound. At birth, the infant exhibited audible moaning and generalized cyanosis, detected without the use of a stethoscope. At 3 min of age, the neonate required respiratory support, including intermittent positive pressure and 70% oxygen concentration. The Apgar score was 8 at 1 min, 4 at 5 min, and 6 at 10 min, reflecting moderate stability at birth with significant deterioration in the first minutes of life.

Upon initial examination and throughout the patient's stay, it was evident that she experienced persistent respiratory distress including hypoventilation and displacement of the heartbeat to the right.

After admission to the neonatal intensive care unit, additional examinations were conducted.

The first radiograph demonstrated hyperinflation within the left hemithorax with mediastinal deviation (as evidenced in Figure 1), and there was no indication of pneumothorax, which was subsequently confirmed by lung ultrasound. Two doses of surfactant were administered without any clinical improvement. To secure the airway, intubation was finally decided.

After 72 h with no radiological changes and requiring 75% oxygen, an echocardiogram was carried out to rule out any congenital heart disease. The results showed a cystic image near the left atrium (Figure 2).

On the 5th day of life, a computerized axial tomography was performed (CT) (Figure 3), which revealed a large mediastinal mass causing an obstructive syndrome of the left bronchus.

Once diagnosed, the patient was transferred for surgical intervention to the thoracic surgery referral unit for paediatric cases.

The mass was excised successfully, resulting in good clinical evolution with no further requirements for respiratory support or oxygen. The patient is now asymptomatic and 3 months old, showing persistent discrete pulmonary asymmetry on X-ray.

Although rare, bronchogenic cysts presenting with respiratory distress in the neonatal period have been documented in a few cases.[1] The exceptional nature of bronchogenic cysts, which present with clinical repercussions from birth, is noteworthy, despite the possibility of their prenatal diagnosis and early treatment treatment.[2]

While bronchogenic cysts are primarily mediastinal in nature, they may also be pulmonary and are characterized as congenital cystic malformations. The bronchogenic cysts are typically asymptomatic in the initial years of life,[3] with up to 50% remaining asymptomatic in adulthood.

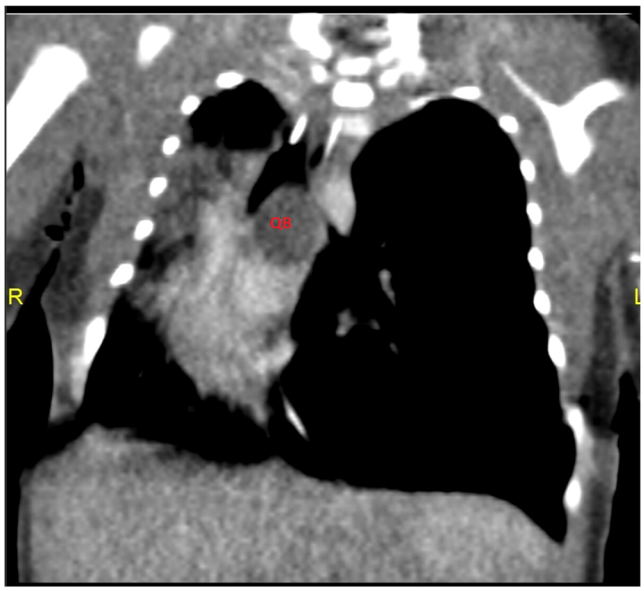

FIGURE 1 Initial chest X-ray presents a mediastinal mass due to hyperinflation of the left upper lobe without signs of pneumothorax. [Color figure can be viewed at wileyonlinelibrary.com]

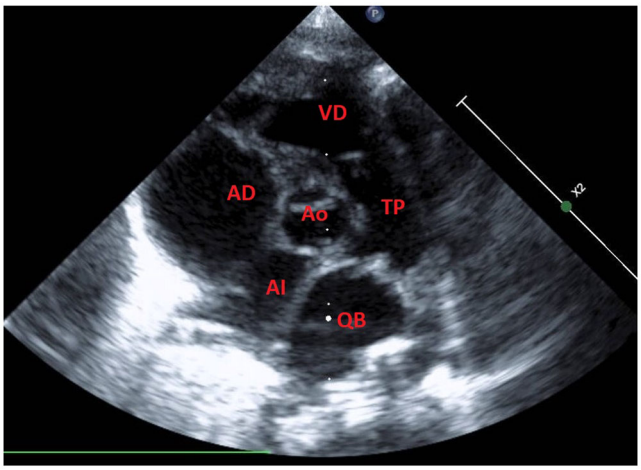

FIGURE 2 Echocardiogram at 24 h of life with a short-axis view of a mediastinal cystic without flow near the left atrium. QB refers to the bronchogenic cyst, Ao refers to the aorta, LA refers to the left atrium, PT represents the pulmonary trunk, RV refers to the right ventricle, and RA refers to the right atrium. [Color figure can be viewed at wileyonlinelibrary.com]

However, in individuals who exhibit symptoms, it is commonly due to compression of the bronchial tree, such as tracheomalacia.[4] Clinical presentation in children is uncommon.

The case presents a challenge as its symptoms are common in many neonatal diseases like pneumothorax, hyaline membrane disease or congenital heart disease. It is crucial to differentiate this case from congenital lobar emphysema as the management of the latter entails different treatment.

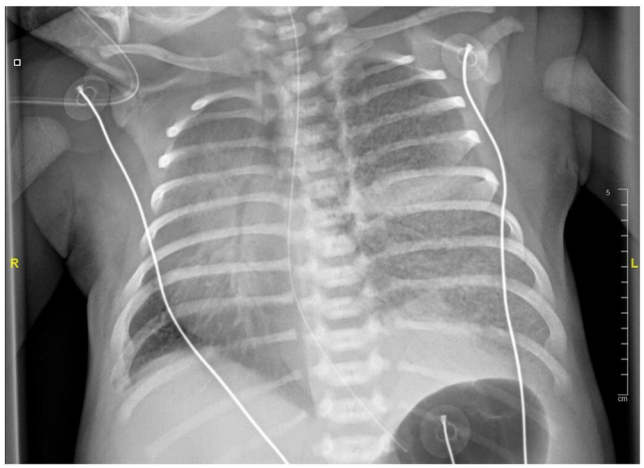

FIGURE 3 Lung CT, showing mediastinal cystic mass with valvular effect on left bronchus. QB Bronchogenic cyst. CT, computerized axial tomography. [Color figure can be viewed at wileyonlinelibrary.com]

The clinical suspicion was established via radiography and echocardiography, where an unusal cystic mass was observed. Confirmation was achieved through a CT scan, revealing a mass that produced an extrinsic compression on the left bronchus, resulting in an obstructive lobar emphysema.

While there have been unusual descriptions in literature regarding bronchogenic cysts with early clinical presentations, such as 1 month,[5] no cases presenting from birth have been found.

It should be noted that surgical excision is necessary for treating obstructive lobar emphysema secondary to a bronchial cyst, and lobectomy is not required.

Mediastinal bronchogenic cysts are rare and usually asymptomatic. However, it is important to recognize their presence as they may develop in neonates with severe respiratory distress. Although radiography and ultrasound can be used as complementary tests, a CT scan is required for diagnosis. Surgical treatment is needed.

AUTHOR CONTRIBUTIONS

Francisco Sanchez-Ferrer: Conceptualization; investigation; writing—original draft; methodology; validation; writing—review and editing; visualization. **Ana Pilar Nso-Roca**: Investigation; conceptualization; methodology; writing—review and editing; supervision; writing—original draft.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

The Ethics Committee for Research of the University Hospital of San Juan de Alicante has approved the study (N° 23/084). This study complies with the provisions of the Declaration of Helsinki. All persons involved had provided their informed consent prior to before inclusion in the study.

ORCID

Francisco Sanchez-Ferrer http://orcid.org/0000-0003-2984-5165

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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