

## A 58-year-old woman with recurrent pneumonias and a pulmonary abscess

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### ABSTRACT

A 58-year-old female with a history of recurrent pneumonia was evaluated for fevers, right lower back pain, and hematuria. A noncontrast abdominal computed tomography (CT) scan showed air and fluid-filled area in the right lower lobe for which a contrast-enhanced CT chest was performed. The CT of the chest revealed the cystic mass was supplied by an anomalous artery from the descending aorta. The patient was then diagnosed with a superinfected bronchopulmonary sequestration which was treated with surgical resection.

**KEY WORDS:** Bronchopulmonary sequestration, pneumonia, pulmonary abscess

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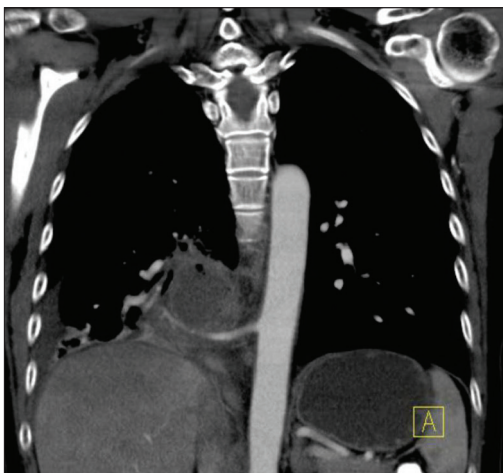
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A 58-year-old female with a history of recurrent pneumonias in adolescence presented with recent fevers sharp right lower back pain and hematuria. Except for tachycardia (103 beats/min) physical examination and vitals were unremarkable. Laboratory testing revealed a WBC count of 22.4 k/ml (normal 4–12 k/ml) air and fluid-filled area in the right lower lobe (RLL), and the patient improved after surgical resection, procalcitonin of 2.6 ng/mL (normal <0.05 ng/mL) and hemoglobin of 12.8 mg/dL (normal 12–16 mg/dL). A non-contrast abdominal computed tomography (CT) scan demonstrated blood clots in the bladder

and a cystic, suspicious for an intrapulmonary abscess. A subsequent contrast-enhanced chest CT scan revealed the cystic mass was supplied by an anomalous artery from the descending aorta. Also noted was a small ipsilateral pleural effusion and RLL consolidation consistent with pneumonia. An intrapulmonary abscess was diagnosed [Figures 1 and 2].

### QUESTION

What is the pathognomonic radiographic feature? What is the radiographic diagnosis?



**Figure 1:** Computed tomography chest, coronal section. The anomalous artery arising from the descending aorta is clearly visualized supplying the cystic mass



**Figure 2:** Computed tomography chest, transverse section. The anomalous artery arising from the descending aorta is clearly visualized supplying the cystic mass

**ANSWER**

The anomalous artery from the descending aorta directly supplying the cystic mass is the pathognomonic feature. The diagnosis is a bronchopulmonary sequestration (BPS). This patient's BPS was super infected, resulting in a pulmonary abscess that required resection.

BPS is extremely rare, comprising 0.15%–6.4% of congenital pulmonary anomalies. It is left side predominant and of two types – extralobar sequestration (ELS) and intralobar sequestration (ILS).<sup>[1]</sup> ELS is more common in infancy, presenting as respiratory distress and can rarely be extra-thoracic. ILS is more frequent, presents later in life, and often with recurrent infections. These can become cystic, as with our patient. BPS is often missed and goes undiagnosed for decades. It is rarely complicated by hemorrhage or lung cancer. Multidetector CT best delineates the airways and parenchyma and is the test of choice to follow BPS. Contrast CT or pulmonary angiography best detects it given the hallmark systemic arterial supply. The management of asymptomatic BPS in infants and children is controversial. Some authors advocate excision to prevent complications in adulthood while others recommend close follow-up with serial imaging. Surgical excision is the treatment of choice for those with symptoms.<sup>[2]</sup>

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflict of interest.

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