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SPECT-CT imaging of lung perfusion confirming the diagnosis of massive necrotizing pneumonia in a 13-year-old boy

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Introduction



The SPECT-CT lung perfusion is a hybrid imaging technique used to diagnose pulmonary embolism. However, it has some other indications like the quantification of regional pulmonary function before surgery. Necrotizing pneumonia is rare form but serious of invasive pneumonia. The agents most frequently involved are Streptococcus pneumonia and Staphylococcus aureus.

Patient & Methods

We report the case of 13-years old boy who presents to the emergency department for hemoptysis with chest pain. His history of the disease dates back to the age of 2 years when he was hospitalized for left pleural post-staphylococcal empyema with great effusion abundance. He was treated with intravenous antibiotic with chest drainage. The clinical and radiological evolution was favorable. The patient was lost sight of for 11 years. Currently, he has a chronic cough, exertion dyspnea and recently hemoptysis with chest pain.



Results



On examination he has no fever, no acute distress with thoracic deformity. Auscultation of his chest revealed scattered left-sided crackles and mild end-expiratory wheezing with egophany. A chest radiograph (Figure 1) demonstrated an expansion in volume of the right lung, small left lung shriveled at the hilar level with presence of rounded clarity recall the appearance of digestive structure in intrathoracic.



Fig 1: chest radiograph : presence of rounded clarity recall the appearance of digestive structure in intrathoracic.

Results

In doubt about a late revelation of diaphragmatic hernia, a chest CT scan (Figure 2) was requested. This exam showed a volumetric right lung reaching the left pulmonary field, a small-sized and rat-shaped left lung destroyed with multiple bronchocele with integrity of the left diaphragmatic cupola which is ascended.

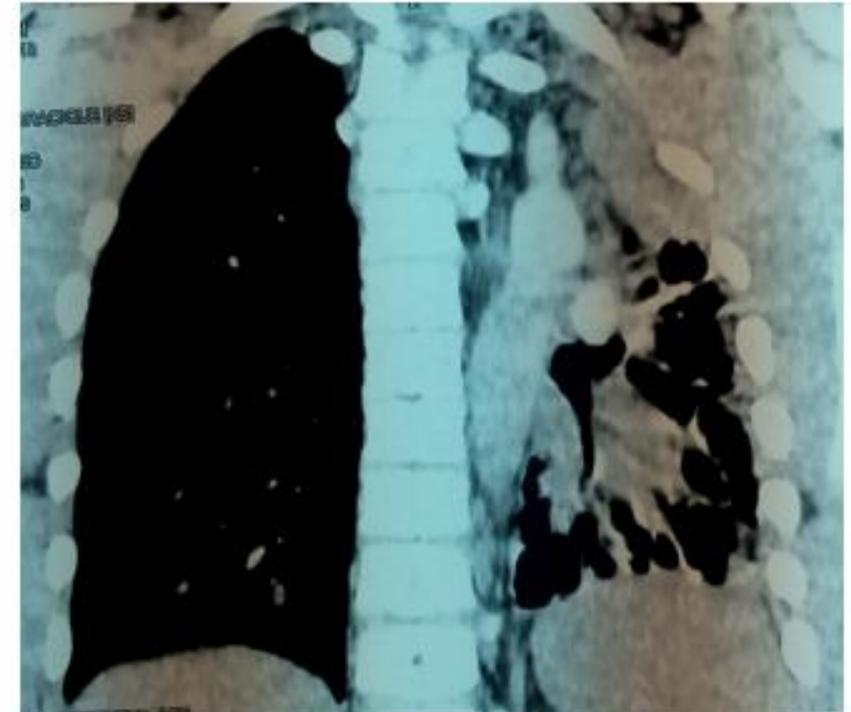


Fig 2: chest CT : a small-sized and rat-shaped left lung destroyed with multiple bronchocele

Results



In the same time, to evaluate the relative function of the left lung a pulmonary perfusion SPECT-CT (Figure 3) was made showing a perfusion defect of the most of the left lung with a function $<10\%$.

The final diagnosis was a massive necrotizing staphylococcal pneumonia.

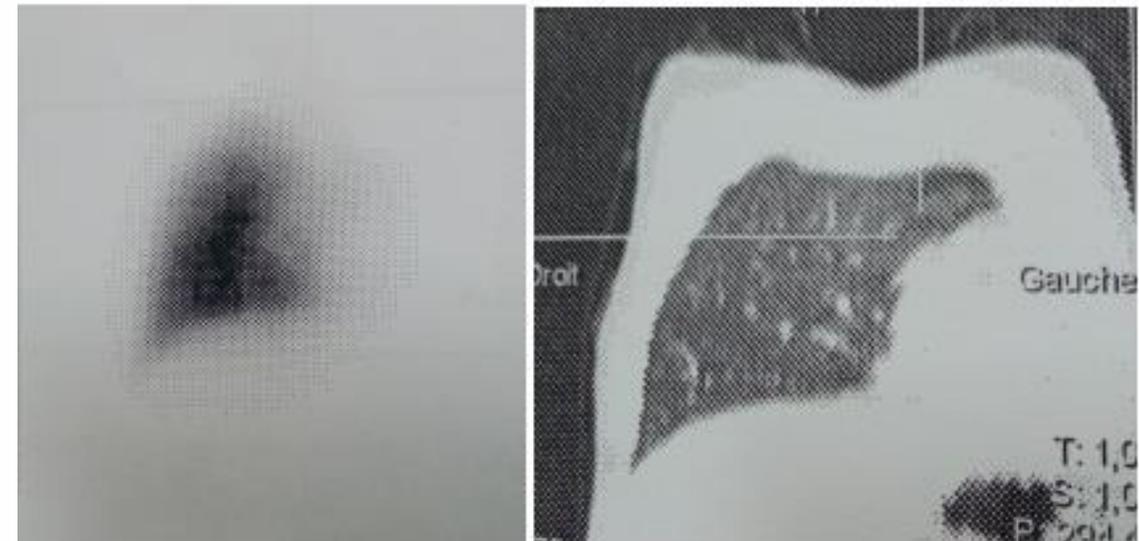


Fig 3: pulmonary perfusion SPECT-CT showing a perfusion defect of the most of the left lung with a function $<10\%$.

Conclusion

Necrotizing pneumonia represents an uncommon but serious complication of pneumonia in the pediatric age group. The pulmonary perfusion SPECT-CT is important in the evaluation of the sequelae and the management.

