Association of Three Developmental Lung Anomalies in an Adult

Asociación de tres anomalías del desarrollo pulmonar en un adulto

To the Editor,

Congenital lung and mediastinum malformations represent a wide and varied spectrum of development abnormalities, including cystic adenomatoid malformation (CAM), pulmonary sequestration, congenital lobar emphysema, bronchogenic cyst (BC), esophageal duplication cysts (EDC), and neurenteric cysts. These congenital malformations occur when the development of the respiratory system is altered. Differentiation begins after the third week of gestation, and 4 different stages have been defined: the embryonic phase, the pseudoglandular phase, the canalicular phase and the saccular phase. Altered development at any of these stages may cause bronchopulmonary malformations. Lung development is closely related with the development of the foregut, and for this reason these malformations commonly occur along with extrapulmonary congenital abnormalities. In the past, congenital

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References


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Fig. 1. (A) Chest X-ray showing nodular lesions in left upper lobe (LUL) (short arrow) and basal radiopacity with reduced blood perfusion (long arrows). (B) Axial computed tomography (CT) image of chest, confirming the presence of a cystic-type lesion in the left upper lobe, with typical fluid–fluid level. The supernatant (short arrow) has a density similar to water, while the density of the fluid in the lower part (long arrow) is calcific (calcium milk). (C) MiniIP (minimum intensity axial projection) CT image showing a well-defined multicystic lesion (arrows), suggestive of malformation, in the left lower lobe basal segments, not communicating with the airway. (D) MiniIP coronal reconstruction showing a mild mass effect on the mediastinum towards the right side (short arrows). Note the nodular lesion in the LUL (long arrow). (E) Axial CT image showing a cystic lesion in the posterior mediastinum, adjacent to the anterior thoracic esophageal margin (arrows).
Lung Volume Reduction Coil Treatment: Is There an Indication for Antibiotic Prophylaxis?

Reducción de volumen pulmonar mediante espirales: ¿está indicada la profilaxis con antibióticos?

To the Editor,

In their article, Deslee et al. show that the use of metal coils for lung volume reduction (LVR) is feasible, safe, and effective.

They report that 5.2% of patients developed pneumonia within 30 days after treatment, even after patients with clinically significant recurrent respiratory infections were excluded.

The indications for LVR using coils have already been characterized,

but the contraindications and risk factors for complications, such as post-operative pneumonia, still have to be determined. This is particularly important for patients with limited respiratory reserve, in whom infectious complications are potentially fatal.

We report the case of a 69-year-old woman with phase IV chronic obstructive pulmonary disease (FEV1 24% predicted and residual volume 244% predicted), severe dyspnea and 1–2 exacerbations/year. She underwent LVR surgery to the right upper lobe and received maximum intensity medical treatment, but subsequently relapsed with dyspnea and functional limitation, without pulmonary hypertension. Imaging studies showed predominantly apical heterogeneous emphysema. Repeat LVR surgery was ruled out in view of the high risk of complications. Three months before the coil intervention, she had been diagnosed with onset of an exacerbation caused by *Pseudomonas aeruginosa*. This was treated with meropenem, resulting in clinical improvement and a negative sputum culture.

Nine coils were placed in the left upper lobe with endoscopic LVR, with no immediate complications. There were no secretions, bronchial aspirate culture was sterile, and no antibiotic prophylaxis was administered. Two weeks later, the patient developed fever, cough, and worsening dyspnea. Clinical laboratory tests showed raised neutrophils and C-reactive protein levels, and chest X-ray revealed new alveolar infiltrations in the lower left lobe, so piperacillin and tazobactam were administered while waiting for sputum culture results. The patient suffered septic shock, requiring mechanical ventilation, and the alveolar infiltration was seen to have extended. Sputum cultures were positive for *P. aeruginosa* and *Aspergillus fumigatus*, so we decided to prescribe meropenem and voriconazole. The diagnosis was redefined as septic shock caused by *P. aeruginosa* pneumonia and probable semi-invasive pulmonary aspergillosis. Clinical progress was good and the patient was discharged from hospital after 2 months.

This case, like those reported by Deslee et al., illustrates that the use of coils for performing LVR may be associated with severe pneumonia. Specialists should be aware of this risk and evaluate the administration of prophylactic antibiotics, at least in the subgroup of patients who have had previous colonization or infections with pathogenic bacteria. The gradual increase in the use of coils for LVR may lead in the future to a better definition of the risk–benefit