Plastic Bronchitis: An Unusual Cause of Atelectasis

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A 4-year-old boy was admitted to a regional hospital with a 2-day history of fever, cough and dyspnea. His past medical history was unremarkable.

On admission, the child presented with fever (38.5°C) and respiratory distress. The breath sounds were diminished on the left side. The C-reactive protein level and white blood cell count were elevated (5 mg/dl, normal range 0–1, and $15.2 \times 10^9/l$, respectively). The chest radiograph revealed partial atelectasis of the left lung (fig. 1).

Treatment with an antibiotic and mucolytic agent was initiated and the patient was transferred to a referral hospital. On the next day, he underwent bronchoscopy, which revealed a whitish rubbery material occluding the left main stem bronchus. A large bronchial cast was removed with a rigid bronchoscope. The shape of the cast outlined the bronchial anatomy (fig. 2), but location and extension of the cast were somewhat discordant with the chest radiograph. The cast was composed of mucus and fibrinous material containing epithelial cells, macrophages and lymphocytes. Microbiological examination of the cast including cultures for aerobic and anaerobic bacteria, fungi and mycobacteria gave negative results.

Within several days, the white blood cell count returned to normal. A control chest radiograph showed complete resolution of the left lung atelectasis (fig. 3). Re-

Fig. 1. Posteroanterior (PA) chest radiograph revealing partial atelectasis of the left lung.

Fig. 2. Bronchial cast removed from the left main bronchus.

Fig. 3. Control chest radiograph showing complete resolution of the left lung atelectasis.

peated flexible bronchoscopy did not reveal any endobronchial abnormalities.

An extensive diagnostic work-up failed to find any underlying cause for plastic bronchitis (such as cystic fibrosis, asthma, allergic bronchopulmonary aspergillosis, bronchiectasis, sickle cell disease, congenital heart disease) [1, 2]. Hence, plastic bronchitis related to a common respiratory tract infection was diagnosed. The patient recovered and remains healthy 3 years after the episode.

The presented case stresses that plastic bronchitis can be triggered by common respiratory tract infections and may be a cause of atelectasis even in otherwise healthy children [1, 2].

References

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