Blood clot 'coral' of the tracheobronchial tree

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DESCRIPTION

A 57-year-old man with a history of hypertension was admitted to the emergency department with septic shock and was therefore intubated and transferred to our intensive care unit (ICU). The patient had a supracondylar knee fracture 4 months ago, and underwent open reduction, internal fixation with condylar screw and plate. Over the past weeks, the patient presented with signs of knee arthroplasty infection, including knee pain, oedema, effusion and increased local temperature. In spite of catecholaminergic therapy, antibiotic therapy (vancomycin and piperacillin-tazobactam), fluid resuscitation and intubation, the patient deteriorated and developed multiorgan failure requiring renal replacement therapy. *Staphylococcus aureus* was isolated from his blood cultures and synovial fluid from an arthrocentesis of the knee joint. The patient underwent surgical removal of the knee prosthesis. However, over the following days, chest Computed Tomography (CT) revealed new multifocal bilateral infiltrates; the patient developed ventilator-associated pneumonia from multidrug-resistant *Pseudomonas aeruginosa*, which was treated with intravenous administration of colistin for 10 days. Repeat chest CT showed development of new extensive bilateral pulmonary nodular infiltrates.

Galactomannan test was positive and PCR in bronchoalveolar lavage detected aspergillosis, so

Learning points

- ▶ In patients receiving prolonged antibacterial treatment, aspergillosis and its complications should be always ruled out.
- ▶ In case of obstruction of the airway, pseudomembranous tracheobronchitis with extensive involvement of the whole tracheobronchial tree should always be taken into consideration.
- ▶ Pseudomembranous tracheobronchitis is a very serious condition, with high mortality and mobility.

the patient was treated with voriconazole. After 3 weeks, the patient was weaned off of ventilator support to tracheostomy. The patient suddenly developed respiratory distress with severe hypoxaemia and consequent respiratory and cardiac arrest. A video bronchoscopy with disposable bronchoscope (Ambu) revealed large blood clots at the end of the tracheal cannula in the tracheobronchial tree, which could not be removed with flexible instruments. We, therefore, introduced a rigid bronchoscope (Efer Dumon) through the tracheal stoma, because the patient had a marked trisma, and we could not insert it through the mouth. After the removal with forceps of some parts of the clot that occluded the distal portion of the tracheal cannula, we were able to remove a large clot with rigid alligator forceps (figure 1). In the meantime, the patient underwent cardiopulmonary resuscitation and after 20 min he returned to spontaneous circulation. The bleeding source was identifiable from the lateral segment of the right lower bronchus, and a Fogarty balloon was inserted for the control of endobronchial bleeding. A part of clot was sent to our laboratory department and was confirmed as an *Aspergillus* infection. Pseudomembranous tracheobronchitis represents an extensive involvement of the whole tracheobronchial tree, with membranous sloughs containing *Aspergillus* overlying the mucosa. It generally presents as intraluminal, circumferential pseudomembrane and exudate with only superficial mucosal invasion or as mucus plugs, which may result in airway occlusion, or tracheal bronchooesophageal fatal haemorrhage from bronchoarterial fistula.¹⁻³ The patient died after 8 weeks from admission to ICU due to complications related to sepsis.

Contributors CR and EB drafted the first version of the manuscript and the figure. PP and ET supervised the work and edited the draft. All authors contributed in the case management.

Figure 1 Blood clot removed using rigid bronchoscopy, showing a 'coral shape' representing the tracheobronchial tree.

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