Respiratory failure due to a foreign body

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Abstract. A 59-year-old patient developed acute respiratory failure due to a foreign body (sponge) in the left main bronchus.

Introduction
Tracheobronchial foreign body aspiration can occur in both children and adults. In cases of foreign body aspiration chest radiography may be helpful in establishing the diagnosis by displaying the foreign body itself, or its consequences. In the literature many different foreign bodies are described including tooth fragments, nails, earrings, a metallic spring from a ballpoint pen, seeds and peanuts [1,2]. The foreign body we describe has – as far as we could trace – never previously been described.

Case report
A 59-year-old haemodialysis patient was admitted to our Intensive Care Unit (ICU) with respiratory failure. His medical history showed atrial fibrillation, psoriasis, diabetes mellitus and adiposity. He had recently been treated in the ICU for seven weeks, because of septic shock, caused by an Entero-bacter cloacae sepsis secondary to an intravascular catheter infection.

Because of weaning difficulties and critical illness polyneuropathy he underwent tracheotomy after which he was transferred to the ward with an uncuffed trachea cannula. After several days he was re-admitted to the ICU with pulmonary oedema, documented by chest X-ray, for which emergency dialysis was performed. After some initial improvement, the next morning he developed acute respiratory distress with a decrease in O₂ saturation. A cuffed trachea cannula was re-inserted in order to start mechanical ventilation. After this procedure it was noticed that the left side of the thorax was not being properly ventilated and that he stayed hypoxaemic despite an FiO₂ of 1.0. A chest X-ray revealed a complete atelectasis of the left lung (Figure A). Bronchoscopy using a flexible scope showed a foreign body in the left main bronchus. It was removed with grasping forceps. It appeared to be a sponge from a nasal oxygen tube (Figure B). A control chest X-ray showed improved aeration of the left lung and the inspiratory oxygen fraction could be reduced.

On further inquiry, it became clear that a nasal oxygen tube- with sponge - had been placed directly onto the tracheostoma by a nurse on the ward and the sponge had been inhaled. This probably happened because of ignorance of stoma care.

Discussion
In comparison with children, tracheobronchial foreign body
aspiration in adults is rare. There is not much literature about the epidemiology of foreign body aspirations in hospitals or ICUs. However, it is plausible that elderly and weak patients – e.g. after sepsis, mechanical ventilation, and critical illness polyneuropathy – are prone to choking because of difficulties with swallowing and coughing. In the hospital environment there are more foreign bodies to be aware of, in particular medical utensils, small plastic caps e.g. from infusion needle and central venous catheter covers and spigots. For instance, one case report describes a 76-year-old female patient who aspirated a screw from a tracheal cannula [3]. Our case report clearly illustrates that there is a certain danger associated with sponges placed on oxygen tubes. If a nasal oxygen tube is wrongly placed – for example directly onto the tracheostoma – the sponge can separate from the oxygen tube and travel through the airways and cause life-threatening complications. However this may also occur if the sponge and oxygen tube have been placed properly in the nose.

In conclusion, consider foreign body aspiration in case of acute respiratory failure and atelectasis. In certain cases of foreign body aspiration, a flexible bronchoscope can be used to recover it from the large airways. Furthermore, this case shows that education on stoma care to all the health care providers involved is important.

References