

# Home Nebulisers – a serious complication

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## Abstract

This case report highlights a serious complication after using a home nebuliser machine. An elderly patient, known to have COPD, was brought to the Emergency Department with severe difficulty in breathing. Despite salbutamol nebulisers, his condition did not improve. Reassessment of his airway revealed a nebuliser mouthpiece in his oropharynx which was removed with McGill's forceps. The patient's condition immediately improved and he was able to start talking. There are reports of aspiration incidents in the literature after the use of metered dose inhalers, we have not been able to find any other reported incidence of this happening with a home nebuliser machine. Although this event was extremely unusual it highlights when patients are using medical equipment at home unsupervised, they must be educated to be able to use it safely

Work carried out at Mayday University Hospital

## CASE REPORT

An elderly patient, known to have Chronic Obstructive Pulmonary Disease, was brought to the Accident and Emergency department by ambulance with severe difficulty in breathing. On arrival he was clearly very unwell and unable to speak. Clinical examination revealed frothy blood tinged sputum in his mouth but the airway appeared clear. He was tachypnoeic (respiratory rate 40) with a silent chest, oxygen saturations were 95% on 15L of oxygen. An arterial blood gas sample taken from the patient, on 15L oxygen via a face mask, showed a pH 7.12, pCO<sub>2</sub> 10.8, pO<sub>2</sub> 14.8, base 0.8 and bicarbonate 22.3. Initial management was commenced for an exacerbation of COPD with titrated oxygen, nebulised salbutamol and atrovent, and intravenous hydrocortisone.

A collateral history obtained from his wife confirmed he had self administered a home salbutamol nebuliser, three hours earlier, as he felt his "breathing was bad". After this his breathing had rapidly deteriorated and his wife had called an ambulance.

The patient received back-to-back salbutamol nebulisers but there was no improvement in his condition. Reassessment of his airway revealed a grey object in his oropharynx that was removed with McGill's forceps. The patient's condition immediately improved and he was able to start talking. Auscultation revealed wide spread wheeze. Repeat arterial blood gases, 20 minutes after the initial sample, showed pH

7.12, pCO<sub>2</sub> 10.8, pO<sub>2</sub> 14.8, base 0.8 and bicarbonate 22.3.

The object that had been obstructing his airway was the mouth piece of his home nebuliser (Fig 1) that he had accidentally inhaled 3 hours earlier at home.

Although improving the patient was clearly exhausted by his ordeal and was admitted under the care of the on call medical team for continued medical therapy and BIPAP overnight. He made a rapid recovery and by the morning no longer required ventilatory support. He continued to improve and was discharged home 3 days later.

## Figure 1

Figure 1: The nebuliser mouthpiece removed from the patient's oropharynx



### DISCUSSION

There are reports of aspiration incidents in the literature after the use of metered dose inhalers, but after searching the Medline data base we have not been able to find any other reported incidence of this happening with a home nebuliser machine. Patients have reported aspirating the cap of their inhalers <sup>12</sup>. Other reported incidents have occurred when the cap of a patient's inhaler has become detached whilst in their pocket or handbag and without checking the patient has used their inhaler. Foreign objects inhaled in this manner include a cigarette filter for a patient whose mother rolls her own cigarettes <sup>3</sup>, five cent pieces <sup>3</sup>, a plastic lug to stop radiator vibration <sup>4</sup> and a spider <sup>4</sup>.

Whilst this was an extremely unusual event, it does however

highlight a number of issues. Firstly that when patients are using a piece of medical equipment at home unsupervised, they must be educated to be able to use it safely. It also acts as a reminder that when initial resuscitation of an ill patient is not progressing it is very important to reassess, starting again from the airway.

### References

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