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Early detection of airway obstruction with a capnographic probe attached to an oxygen mask

To the Editor:

Capnometry and pulse oximetry are effective in preventing anaesthetic mishaps^{1,2} and ensuring adequate ventilation³ in sedated patients. We report a case in which airway obstruction was detected by capnography, but not by pulse oximetry.

A 71-yr-old man, scheduled to undergo inguinal hernia repair, was continuously monitored with ECG, pulse oximeter (SpO₂), and capnography. The capnographic probe (Capnomac, Datex) was inserted into and attached to an oxygen face mask near the nostrils (Figure 1). After establishment of epidural anaesthesia, midazolam 5 mg and butorphanol 1 mg were given *iv*. One minute later, capnographic waves were abruptly distorted and flattened (Figure 2). The patient was apnoeic for 25 sec.

FIGURE 1 Capnographic probe attached inside the oxygen face mask near the nostrils of the patient.

FIGURE 2 Capnographic tracings. After sedatives were given, CO₂ value decreased markedly and reached baseline level. The patient was apnoeic for 25 sec.

During this period, SpO₂ (99%) and haemodynamic variables remained unchanged. Immediately after moving the lower jaw to open the airway, the capnographic waves reappeared, indicating a patent upper airway of the patient.

In our monitoring system no additional devices are required. Although a leak around the face mask may cause dilution of the expiratory CO₂, we believe that our technique can monitor trends of CO₂ output, and thus aid in the early detection of airway obstruction.

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Technology transfer and monitoring practices

To the Editor:

The penultimate stage in the life of a successful monitoring device is its routine use by clinicians. This is