CORRESPONDENCE

Unusual cause of intraoperative air leak
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We recently encountered an unusual cause of intraoperative air leak. A 30 year old ASA Grade I female patient weighing 63 kg, was scheduled for choledochal cyst excision. The anesthesia machine was prechecked and the patient was induced with standard general anesthesia protocol. Airway was secured with 7.5 mm cuffed endotracheal tube and confirmed with a 5-point auscultation and square shaped capnograph. Soon after the start of the surgery the surgeons requested stomach deflation. A 16F nasogastric (NG) tube was passed through right nostril without any resistance felt. Subsequently, a leak of almost 20% of set tidal volume was noted with expired tidal volume. The normal square wave capnography was distorted. The breathing circuit and all connections were checked and found satisfactory; the tracheal tube cuff pressure was found to be adequate with no signs of cuff puncture. All common causes were ruled out. When the NG tube was occluded, the observed leak appeared to resolve and capnography showed the usual normal waveform. The NG tube was removed and the breathing circuit leak completely resolved as seen by the expired tidal volume.

Inadvertent insertion of NG tube into the trachea can be one of the causes of circuit leak during mechanical ventilation inspite of a well inflated tracheal tube cuff.¹ ² One simple maneuver to confirm it is by kinking the NG tube and observing expired tidal volume and capnography. You may place the proximal end of NG tube near your ear to try to listen breath sounds and feel air exiting. Attaching distal end of capnography sampling tube to open end of NG tube has also been used to detect it.

In cases requiring NG tube insertion, the placement should be accomplished just after intubation of the trachea and proper placement confirmed, either by auscultation, gastric aspirate or absence of coughing.³ However, in certain cases the surgeons request for stomach deflation after the abdomen has been exposed as happened in our case. In these circumstances, it becomes difficult to confirm the placement of the tube using these conventional methods and therefore the malpositioning can go unnoticed.

The reported incidence of accidental placement of NG tube in the tracheobronchial tree is almost 2%⁴ which can lead to serious complications like pneumothorax, bronchopleural fistula, empyema and even death.⁵ Through this report we would like to emphasize that a low pressure cuffed endotracheal tube cannot completely secure the airway, and an NG tube can be inadvertently placed in the trachea even with endotracheal tube in situ.

REFERENCES