

## Letter to the editor

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Dear Editor,

We read with interest the case report by Dr KY Fung et al entitled "Percutaneous transcutaneous jet ventilation in a patient with partial upper airway obstruction".<sup>1</sup> We agree with the authors regarding the importance of the jet ventilation in the management of the difficult airway. However we wish to address the following issues.

Firstly, sedation in a patient with potential difficult airway has to be done with extreme caution. Sedation with benzodiazepines causes a dose dependent respiration depression<sup>2,3</sup> and may obtund protective reflexes.<sup>4</sup> This may cause airway difficulties at a time when the practitioners have not made adequate preparations for controlling the airway.

Secondly although we agree that percutaneous transtracheal jet ventilation can be used in the "cannot ventilate, cannot intubate" situation, we disagree with its use in the first instance by inexperienced personnel. Transtracheal jet ventilation has an inherent risk of barotrauma, causing pneumothorax, pneumomediastinum, pneumoperitoneum.<sup>5,6</sup>

We had a recent case of a 15 years old girl admitted for recurrent laryngeal papillomatosis with partial airway obstruction. A laser resection of the papillomatosis was planned and she went into a "cannot ventilate, difficult to intubate" situation on

induction of anaesthesia. Jet ventilation through the larynx was used to maintain the oxygenation but she developed bilateral tension pneumothorax, went into ventricular fibrillation and had to be resuscitated. The anaesthetist finally managed to put in an oral endotracheal tube and she improved after bilateral chest tubes were inserted. The post-operative course was uneventful and she was discharged home.

The incidence of barotrauma using a jet ventilation technique through a Cook Airway Exchanger Catheter was 11%.<sup>7</sup> This high complication rate limits its usefulness even for experienced users.

The use of jet ventilation requires one to be vigilant and it should never be used when there is the potential of total airway obstruction. The chest expansion is a crude indication of adequate lung ventilation. However this may be difficult to observe in locations with poor lighting, and in patients who are obese. Jet ventilation should be discontinued when there is incomplete deflation of the chest.<sup>8</sup> Barotrauma is more likely in such situations as a result of air stacking.

In summary, jet ventilation should only be used with extreme caution by experienced personnel. There should be a high index of suspicion of barotrauma. Complications could be just as life threatening. All jet ventilators should have a pressure regulator and must be serviced regularly to reduce the risks accompanying its use.

## References

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