

thetic room, a venipuncture was performed using a 22-gauge catheter without local anesthetic skin infiltration. This was flushed with 2 mL of normal saline. Children in Group I received remifentanyl $0.25 \mu\text{g}\cdot\text{kg}^{-1}$ (diluted with normal saline to 5 mL) over 30 sec followed 60 sec later by propofol. Group II received remifentanyl $0.5 \mu\text{g}\cdot\text{kg}^{-1}$ (diluted with normal saline to 5 mL) over 30 sec followed 60 sec later by propofol. The propofol ($3 \text{ mg}\cdot\text{kg}^{-1}$) was injected over 20 sec and a blinded observer noted propofol pain on the four-point behavioural pain scale proposed by Cameron *et al.*:³ 0 = no pain; 1 = mild pain (grimace); 2 = moderate pain (grimace + cry); and 3 = severe pain (cry + withdrawal). The injection was performed manually by one of the investigators who gauged the speed of injection from the wall-mounted clock. The incidence of pain was 60% in Group I compared with 23.5% in Group II ($P < 0.001$). Moderate and severe pain occurred in 22% and 14% respectively of patients in Group I, compared to 11.7% and 1.9% in Group II ($P < 0.001$). These results indicate that remifentanyl pretreatment ($0.5 \mu\text{g}\cdot\text{kg}^{-1}$) 60 sec before propofol administration significantly reduces pain associated with propofol injection in children compared to remifentanyl $0.25 \mu\text{g}\cdot\text{kg}^{-1}$. The site of action of remifentanyl in reducing pain may be either central or peripheral. The dose we used is low and is lower than the dose which one would choose if one wanted a central analgesic effect. Opioid receptors are present at peripheral sensory nerve terminals in humans. Remifentanyl has a selective agonist action at μ opioid receptors.⁴ It is possible that the reduction in injection pain was the result of a peripheral action.

Yatindra Kumar Batra MD MNAMS
Abdul Raheem Al-Qattan MD PhD
Vandan Daniel Ward MD
Dinesh Kuriakose MD
Syed Shujat Ali MD
Dubikaitis Alexander MD PhD
Chandigarh, India

References

- 1 Tan CH, Onsiong MK. Pain on injection of propofol. *Anaesthesia* 1988; 53: 468–76.
- 2 Picard P, Tramer MR. Prevention of pain on injection with propofol: a quantitative systemic review. *Anesth Analg* 2000; 90: 963–9.
- 3 Cameron E, Johnston G, Croft S, Mortan NS. The minimum effective dose of lignocaine to prevent injection pain due to propofol in children. *Anaesthesia* 1992; 47: 604–6.
- 4 James MK, Feldman PL, Schuster SV, Bilotta JM,

Brackeen MF, Leighton HJ. Opioid receptor activity of GI 87084B, a novel ultra-short acting analgesic, in isolated tissues. *J Pharmacol Exp Ther* 1991; 259: 712–8.

Awake intubation using the GlideScope® video laryngoscope: initial experience in four cases

To the Editor:

The GlideScope® video laryngoscope (GVL; Saturn Biomedical Systems, Burnaby, BC, Canada) is a novel system for tracheal intubation that utilizes a video camera embedded into a plastic laryngoscope blade.^{1,2} The blade is 18 mm at its maximum width, and bends 60° at the mid-line. This configuration provides a view superior to that obtained with a conventional laryngoscope. Experience using the GVL in anesthetized patients has been excellent, but limited;^{1,2} experience in awake patients is even more limited. The purpose of this note is to describe use of the GVL in four cases of awake intubation.

In the first two cases the initial plan was to use fiberoptic methods, but the equipment was unavailable, so the GVL was used instead. Later, having had a prior favourable experience, the GVL was used electively, even though a difficult airway cart was available. In three cases the indication for awake intubation was morbid obesity. The remaining patient had a limited mouth opening (2.5 cm) that would have made ordinary intubation difficult.

Following sedation with midazolam, the airway was anesthetized with gargled and atomized 4% lidocaine; superior laryngeal and transtracheal blocks were not employed. Once a good view of the glottis was obtained, additional lidocaine was administered under direct vision, using a MADgic® atomizer (Wolfe Tory Medical, Salt Lake City, UT, USA). A malleable stylet bent at 90° was used. In all cases a good view of the glottis was obtained and the endotracheal tube (ETT) was passed without difficulty. In the patient with limited mouth opening the GVL was just able to be introduced.

There are several advantages of using the GVL for awake intubation. First, the view is excellent. Second, the method is less affected by secretions or blood as compared to fiberoptic intubation. Third, everyone can view the intubation, while this is the case only for video bronchoscopes. Fourth, the intubation can be recorded using a regular camcorder. Fifth, there are no restrictions on the type of ETT that can be placed, while this is not the case for fiberoptic methods. Sixth, the GVL is more rugged than a bronchoscope, and is

less susceptible to damage. Seventh, the GVL is easily cleaned. Finally, while advancing the ETT into the trachea over a bronchoscope often fails as a result of the ETT impinging on the arytenoid cartilages,³ this is not a problem with the GVL.

D. John Doyle MD PhD FRCPC
Cleveland, Ohio

References

- 1 Cooper RM. Use of a new videolaryngoscope (GlideScope®) in the management of a difficult airway. *Can J Anesth* 2003; 50: 611–3.
- 2 Agro F, Barzoi G, Montecchia F. Tracheal intubation using a Macintosh laryngoscope or a GlideScope® in 15 patients with cervical spine immobilization (Letter). *Br J Anaesth* 2003; 90: 705–6.
- 3 Katsnelson T, Frost EA, Farcon E, Goldiner PL. When the endotracheal tube will not pass over the flexible fiberoptic bronchoscope (Letter). *Anesthesiology* 1992; 76: 151–2.

Ponction accidentelle de la sonde d'intubation lors d'une trachéotomie percutanée

[Accidental puncture of the endotracheal tube during a percutaneous tracheostomy]

Au rédacteur en chef,

La trachéotomie percutanée (TP) est pourvoyeuse de complications.^{1,2} Nous rapportons une complication avec la méthode PercuTwist™ (Laboratoires Rüsch, Kern, Allemagne) et proposons les précautions permettant d'éviter ce type de problème.

Un patient était programmé pour une TP. En début de procédure, le tube trachéal (TT), était retiré sous laryngoscopie entre les cordes vocales (pour limiter le risque de ponction du TT). La ponction était marquée par des fuites aériennes attribuées à une perforation du ballonnet du TT. La procédure était poursuivie en augmentant le volume courant de 100 mL. Le passage du guide souple ne posait aucun problème. Le dilateur PercuTwist™ était introduit facilement sur 2 cm, puis, une résistance était perçue. Un retrait du guide sur 2 cm objectivait une plicature. La procédure était reprise, permettant d'accéder à la trachée. L'ouverture complète de la trachée était difficile (sensation de résistance). Le retrait du TT était décidé, sa présence à proximité du cathéter était certaine, le ballonnet trachéal ayant été crevé en début de procédure.

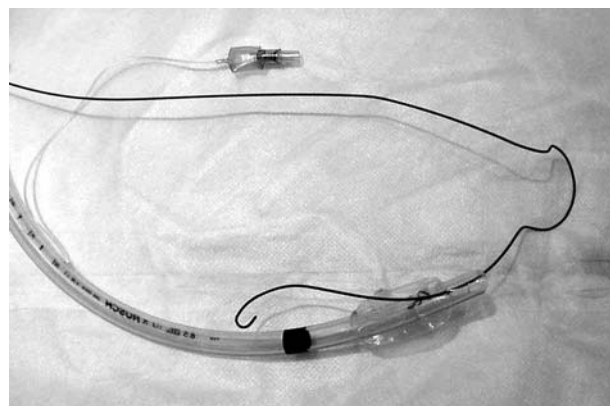


FIGURE Guide de trachéotomie percutanée incarcéré dans la sonde trachéale.

La canule de trachéotomie ne pouvait être introduite (sensation de butée sur le guide). Le guide était retiré avec sensation de résistance puis de ressaut. La canule était alors introduite facilement. Jamais le patient n'a désaturé.

La ponction du TT est un problème avec la TP.³ Elle relève d'une ponction haute par rapport au TT. Plusieurs précautions permettent de limiter ce problème:

- retrait du TT le plus haut possible: manoeuvre insuffisante dans notre observation;
- fibroscopie trachéale: guide la ponction (correction d'une ponction latérale, ...). Le fibroscope peut être détérioré par ponction accidentelle et un fibroscopiste est mobilisé. Pour ces raisons nous avons cessé de systématiser la fibroscopie.

Dans notre observation, la ponction était haute (ballonnet du TT crevé initialement). L'examen du TT (Figure) objectivait une perforation en aval du ballonnet, affirmant la transfixion de sonde, avec cathétérisme du TT par le guide expliquant les difficultés de dilatation. Le guide (incarcéré dans la sonde) a été tracté à l'extubation vers le haut. Le retrait du guide a permis la canulation d'une trachée vide d'obstacle. Le mécanisme de l'incident a été confirmé par l'examen, à froid, du TT et du guide. Nous avons depuis modifié notre technique: extubation du patient, ventilation durant la procédure sur ProSeal™. Le ProSeal™ permet: - de moins insuffler l'estomac - d'utiliser des pressions ventilatoires plus élevées qu'un masque laryngé classique⁴ - l'axe trachéal devient totalement libre. Cette procédure nous donne depuis entière satisfaction.