The use of McGrath® Mac for awake laryngoscopy and intubation in an obese patient with a predicted difficult airway

SY Thong1*, SY Chong2, SY Goh3

Abstract

Introduction
We present a case in which the McGrath® Mac videolaryngoscope was used for awake intubation.

Case report
An obese 38-year-old female, planned for elective surgery, was assessed to have a possible difficult airway. Awake intubation using the McGrath® Mac was planned. An antisialologue was administered and the airway was anaesthetised. Remifentanil infusion was used for conscious sedation. Laryngoscopy was performed, which showed a Cormack and Lehane grade 1 view of the larynx. Intubation, performed without complications, was followed by the induction of anaesthesia. In the recovery, the patient reported that the intubation process was not unpleasant.

Conclusion
McGrath® Mac is able to facilitate awake intubation well.

Introduction
Awake fiberoptic intubation is the gold standard for a difficult airway. However, there are recent reports of awake intubation facilitated by videolaryngoscopes1,2. We present a case in which the McGrath® Mac (Aircraft Medical Limited, Edinburgh, UK) videolaryngoscope was used for awake intubation in an obese patient with an anticipated difficult airway.

Case report
The patient was a 38-year-old female planned for elective orthopaedic surgery in an ambulatory facility within a tertiary hospital. Her medical history included obesity (body mass index 36 kgm⁻², body weight 89 kg) and hypertension. Assessment of the airway indicated a possible difficult intubation–she had a receding chin and a short neck.

Treatment, intervention and outcome
Awake intubation using the McGrath® Mac videolaryngoscope was planned. After the application of routine monitoring, oxygen was administered via a nasal cannula. Intravenous glycopyrrolate at a dose of 0.2 mg and midazolam at a dose of 1.5 mg were administered. Lignocaine gel 2%, 10 mL was gargled and lignocaine 10% was sprayed twice on the tongue and in the hypopharynx via an atomisation device (Long Flexi Nozzle, ENT Technologies, Victoria, Australia). Remifentanil target-controlled infusion at a dose of 2 ng/mL was commenced. Verbal contact was maintained throughout.

Laryngoscopy performed with minimal force and without cervical manipulation showed a Cormack and Lehane grade 1 view of the larynx. After two sprays of lignocaine 10% on the vocal cords, a 7.0 mm tracheal tube was passed through the larynx over a malleable stylet. There were no complications such as coughing, gagging or bleeding. Capnographic confirmation of successful tracheal intubation was followed by the induction of anaesthesia with intravenous propofol.

In the post anaesthetic care unit, she reported that she could recall the intubation process; however, it was not unpleasant.

Discussion
As visualisation of the glottis during videolaryngoscopy is not dependent on aligning the oral-pharyngeal-laryngeal axes, there is less airway and cervical manipulation. This allows better patient tolerance and less cervical spine movements. These are obvious advantages in difficult airways or unstable cervical spines requiring awake intubations.

The main drawbacks of flexible fiberoptic endoscopy for intubation are the steep learning curve and the increased time to intubation as compared with direct laryngoscopy. The advantage of videolaryngoscopy over fiberoptic endoscopy for intubation lies in its similarity to the conventional Macintosh laryngoscopy. It is easier to learn and use3. Intubation may be achieved in a shorter time—important in a number of situations sometimes occur in the most urgent and unexpected occasions. Most videolaryngoscopes are portable and fast to set up.

Supplemental oxygen can be given easily via a nasal cannula throughout the entire intubation process. Administration of supplemental oxygen is possible but more cumbersome when fiberoptic endoscopy is used for awake intubation.

Awake videolaryngoscopy can also be used for assessment of suspected difficult airways5. This technique may spare the patient the discomfort of undergoing awake intubation. Ability to visualise the cords awake provides reassurance to the anaesthesiologist about being able to secure the airway after inducing general anaesthesia. McGrath® Mac improves the grade of laryngoscopic view whilst using a conventional laryngoscopy technique. It allows viewing
of the glottis directly, similar to the traditional Macintosh or via the indirect camera view, thus reducing blind spots and risks of trauma. This provides a major advantage for the straightforward intubations. In the more difficult cases, viewing of the camera image can reduce the possibility of blind tube insertion and obtain otherwise difficult views with little force.

Unlike many laryngoscopes' blades with a pronounced curvature, the curvature of the McGrath® Mac blade allows gentle lifting of the anatomy to clear an optimum tube path. This potentially enables intubation without a stylet and the attending traumatic complications. Its blade is slimmer than that of the conventional laryngoscope, and hence is less likely to cause dental damage and can be used in patients with a limited mouth opening.

**Conclusion**

As with any airway device, operator expertise and patient cooperation are the keys to successful intubation. McGrath® Mac seems to be able to facilitate awake intubation well. More studies are needed to compare McGrath® Mac videolaryngoscopy and flexible fiberoptic endoscopy for awake intubation so as to allow meaningful conclusions to be drawn.

**Consent**

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

**References**