

The Use Of Wuscope-Univent Tube Technique In Difficult Airway: A Case Report

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Citation

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Abstract

Difficult intubation presents a nightmare to the anesthesiologist. However, there are many strategies available for managing the airway of patients with risk of difficult intubation. We report a case of anticipated difficult intubation due to limited neck movement and Mallampati grade III. The patient underwent left side carotid endarterectomy under general anesthesia. Awake intubation was attempted using the combine WuScope-Univent tube technique. The glottic exposure was satisfactory and tracheal intubation was easy. To our knowledge this is the first report on the use of WuScope-Univent tube technique for difficult intubation.

There are many techniques adopted for managing the difficult airway (1). The WuScope (Pentax Precision Instruments, Orangeburg, NY) device was recently introduced to fit that purpose. The device comprises of a tubular, curved, bi-valved, rigid blade portion and a flexible fiberscope portion (Fig 1). The main blade and the bi-valved element each having corresponding grooves that form a larger passageway for the endotracheal tube (ETT). The ETT can be advanced through the glottic opening without the need for an intubating stylet or head extension. However, the manufacturer advised the use of suction catheter through the lumen of the ETTA as a replacement of the incubating stylet. We describe a case of anticipated difficult airway using the WuScope-Univent tube technique.

CASE REPORT

A 72-year-old female patient presented for left side carotid endarterectomy (CEA) under general anesthesia. The patient was known ischemic heart with triple vessel disease but compensated. She was also hypertensive on tenormine 100mg orally (PO) once daily (OD). Preoperative assessment of the airway revealed limited neck movements due to spondylosis (Fig 2). Also narrow mouth opening, high arched palate and Mallampati grade III. The patient was told about the anticipated difficult intubation and she accepted the plan of awake intubation. Premedication included lorazepam 2mg (PO) and ranitidine 150mg (PO) 2 hr preoperatively. The patient was taken to the OR where cardiorespiratory monitoring was instituted. Intravenous and arterial lines were established and midazolam 2mg and sufentanil 5mcg were given i.v. The patient was breathing O₂ with Fi₂ 1.0 for 10 min. The plan was to pass a Univent tube through the WuScope and using the bronchial blocker (BB) as a replacement of the suction catheter. Therefore we have designed the set shown in Fig 3, which consists of the Univent tube (I.D 7.5mm) with its BB attached to oxygen

source and to the capnography. The aim is to keep monitoring the EtCO₂ breath by breath and to supply oxygen continuously during awake intubation. The patient received 70mg lidocaine (10%) spray orally and 2% lidocaine Tran injection with needle aspiration test. The Wicopy was introduced into the oropharynx and advanced toward the larynx. The glottis was visualized and the BB was advanced through. The Uneven tube was then passed into the larynx and trachea. After tracheal position was confirmed the BB was pulled out and secured in its tunnel. Then general anesthesia was induced with sufentanil 10mcg and protocol 100mg I.v.s.. Muscle relaxation was achieved with cisatracurium. Anesthesia was maintained with sevoflurane 1-2 MAC and incremental doses of sufentanil and cisatracurium. The operation was uneventful. The patient tolerated the procedure well and was actuated and shifted to the intensive care for observation. Following day she was discharged to the surgical floor.

Figure 1

Fig 1. The Wuscope



Figure 2

Fig 2. Cervical spondylosis



Figure 3

Fig 3. Wicopy-Uneven tube set



DISCUSSION

In this case report, we demonstrated the use of fiberoptic laryngoscopy using the WuScope combined with the Univent tube with easy glottic exposure and tracheal intubation. The Univent tube was first introduced in the early 1980's (2), it is designed for one lung ventilation during thoracic anesthesia. However, there are some scattered reports came on surface recently on the use of it in difficult intubation (3,4). Others

reported the use of it for nasal intubation in a patient with a small oral aperture (5). Also the univent has been used to provide a new technique for jet ventilation (6). Moreover, it was reported that the univent tube could facilitate difficult intubation in a patient undergoing thoracoscopy (7).

The WuScope had been used previously in approximately 300 adult patients to facilitate oral and nasal tracheal intubation, including 48 cases of difficult intubation. No failures were reported in the initial series, despite the large number of patients with high Mallampati grade III and IV, caudal larynx and receding jaw (8). The reported advantages of the WuScope are an oropharyngeal airway-shaped blade to allow glottic visualization without the need for head extension, tongue lifting, or forceful jaw opening in addition to the tubular built-in ETT passage-way through which the tube can be advanced without stylet. The manufacturer has advised the use of suction catheter as a replacement of stylet to facilitate ETT, but we found that the BB of the Univent tube easier and less cumbersome. Moreover, the BB can be connected to oxygen source as well as to capnography during awake intubation (9). In one report the WuScope was

questioned regarding its high price, the cost of repairing the flexible fiberscope and the requirement for learning and mastering new skills (10).

However, in the present case report the patient was having cervical spondylosis with limited neck movement, therefore we found the WuScope suitable for glottic visualization. Another advantage of the WuScope is that, unlike flexible fiberoptic endoscope, one can continuously view the ETT as it advances through the glottic opening into the trachea.

CONCLUSION

The combined use of the WuScope and the Univent tube in the present case report has provided excellent glottic exposure and easy tracheal intubation. The procedure was well tolerated and to our knowledge this is the first report on the use of WuScope-Univent tube technique in difficult airway.

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