Difficult Laryngoscopy Made Easy Using Wuscope-Univent Tube Technique For Treacher Collin's Syndrome

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Citation

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Abstract

A fundamental skill of the anaesthetist is airway management. There are many strategies available for managing the airway of patients with history of difficult intubation. We report a case of Treacher Collin's syndrome with anticipated difficult intubation due to retrognathia and Mallampati grade IV. The patient underwent left side auriculoplasty under general anesthesia. After preoxygenation, induction of anaesthesia was accomplished with sufentanil 0.1mcg/kg and thiopentone 5mg/kg followed by succinylcholine 1mg/kg body weight. WuScope-Univent tube technique was used for endotracheal intubation. 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 in a patient with Treacher Collin's syndrome.

INTRODUCTION

Patients with Treacher Collin's syndrome present a serious problem to anaesthetistsin maintaining their airway due to severe facial deformity ([1]). Because of retrognathia, airway management of those patients is often challenging. WuScope-Univent tube technique was described before for tracheal intubation in difficult clinical situation ([2]). We would like to report a case of Treacher Collin's syndrome in which the trachea was successfully intubated using the WuScope-Univent tube technique.

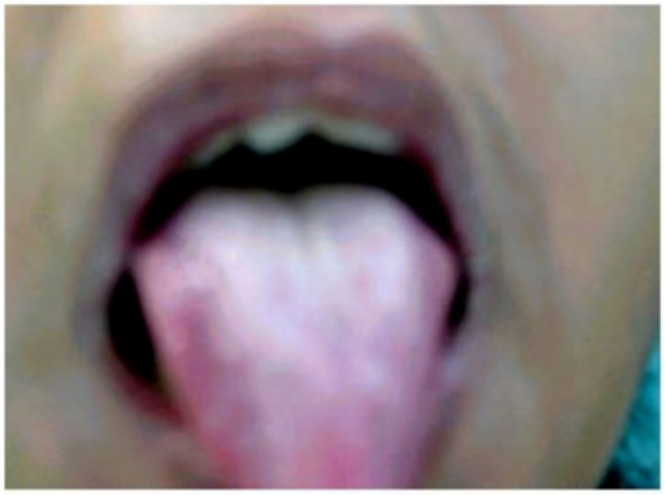
CASE REPORT

A 16-year-old female patient, known case of Treacher Collin's syndrome presentedwith bilateral microtia. She underwent multiple stages of bilateral auriculoplasty.The patient had several procedures to correct microtia of the right side, i.e. framework insertion, elevation of the pinna and local correction under general anaesthesia. She had a history of difficult tracheal intubation during the previous surgical procedures where different tools to facilitate tracheal intubation were used. At one time after induction of anaesthesia attempts of tracheal intubation was unsuccessful and therefore the anaesthetist woke her up and the surgery was cancelled. Fiberoptic bronchoscopy was used successfully (FOB) for tracheal intubation during right auriculoplasty after many attempts. In another session of right auriculoplasty and framework insertion, the trachea was successfully intubated using a Magboul laryngoscope ([3]). The patient was classified as Cormack and Lehane class IV by previous anaesthetists ([4]). She was labeled as difficult tracheal intubation but with easy face mask ventilation after induction of anaesthesia. This time, she was scheduled to undergo left ear reconstructive surgery under general anaesthesia.

Preoperative examination revealed, an underweight built patient with delayed mental development and poor appetite. Airway assessment revealed Mallampati class IV, Fig 1 ([5]).

Figure 1

Figure 1: Mallampati IV, no structures are visible.



She was having protruding upper incisors and a prominent premaxillas and retrognathia, Fig 2.

Figure 2

Figure 2: Treacher Collin's syndrome patient showing retrognathia (lateral view).

This time we decided to use the WuScope-Univent tube technique to accomplish tracheal intubation, Fig 3. A difficult intubation tray including FOB was made available in the operating room. The patient was connected to EKG, non-invasive blood pressure and pulse oximeter monitors. After preoxygenation, anaesthesia was induced with i.v sufentanil 0.1mcg/kg and thiopentone 5mg/kg followed by succinylcholine 1mg/kg body weight. Face mask oxygen ventilation was easy as expected. The plan was to pass an Univent tube (ID 7mm) through the WuScope and using the bronchial blocker (BB) as a replacement of the suction catheter. The glottis was made easily visible and the BB was pushed between the vocal cords followed by the Univent tube. Anaesthesia was maintained with oxygen/nitrous oxide and 1MAC sevoflurane. Incremental dosages of sufentanil and atracurium were used when needed. At the end of surgery, atropine/neostigmine were given in the usual dosages and the trachea was extubated. The patient was then transferred to the recovery room and she made an uneventful recovery.

Figure 3

Figure 3: WuScope-Univent tube.

DISCUSSION

Treacher Collin's syndrome is a first-arch congenital defect which often manifested with severe facial deformity. The disease offers challenges to the anaesthetists during plastic surgical procedures. The challenges are difficulty in maintainingairway as well as difficult tracheal intubation during induction of general anaesthesia ([6]). In one report, a laryngeal mask airway was used successfully to intubate the trachea in Treacher Collin's syndrome patient ([1]). In the present case report the patient had a previous anaesthetic history of difficult tracheal intubation but never difficult ventilation. During one of the operative session the attending anaesthetist could not intubate the trachea and the surgery was cancelled.

During another two operative sessions, the trachea was successfully intubated using a Magboul laryngoscope ([3]). Again, in another operative session the trachea was intubated using FOB after many attempts and with difficulty. In a survey on 13,248 intubations, 13.5% were performed with FOB with failed intubation rate of 0.045% ([7]). The use of

FOB for tracheal intubation needs adequate practice and structured training program for the trainee anaesthetist as well as continuous training for experienced anaesthetists. The WuScope was introduced to facilitate tracheal intubation in difficult airways. 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 tracheal tube 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 tracheal intubation. The Univent tube was first introduced in the early 1980's. It is designed for one lung ventilation during thoracic anesthesia ([9]). However, there are some scattered reports on its use in difficult intubation ([10], [11]). In a previous report, we have used the WuSope-Univent tube technique to facilitate tracheal intubation in a patient with limited neck movement due to cervical spondylosis ([2]). In the present report we have used the same technique successfully.

CONCLUSIONS

In conclusion, the WuScope-Univent tube technique provided excellent glottic exposure and easy tracheal intubation. The procedure was well tolerated and to the best of our knowledge this is the first report on the use of the WuScope-Univent tube technique in Treacher Collin's syndrome patient.

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