

Retrograde-Assisted Fiberoptic Intubation: An Unusual But Useful Use Of Flexible Fiberoptic Endoscope

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Citation

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Abstract

The flexible fiberoptic endoscope is invaluable equipment used in the practice of anaesthesiology and intensive care medicine. Its basic use is as an aid to difficult intubation either by the oral or nasotracheal route. A few numbers of cases of Retrograde-Assisted Fiberoptic Intubation have been reported in the literature. We report a similar case.

CASE REPORT

A 42-year-old male patient was scheduled for elective right total hip replacement.

PRE-OPERATIVE ASSESSMENT

PRESENTING COMPLAINT:

- Inability to move right lower limb for the last few years.

PAST MEDICAL HISTORY:

- Known case of ankylosing spondylitis for the last 24 years.
- No history of taking steroids or NSAIDs for the last one year.
- No history of diabetes mellitus, hypertension, COPD or allergies etc.

PAST SURGICAL HISTORY:

- Left total hip replacement done under epidural anaesthesia.
- Perioperative course remained uneventful.

PHYSICAL EXAMINATION:

- The patient was of short stature.
- His height was 156 cm and weight 68 kg.
- There was no pallor, cyanosis, jaundice or edema.

- He was lying on the bed with two big pillows under the head.
- Respiration was abdominal and chest movements were seemed to be restricted on either side.
- The examination of all other systems was unremarkable.

AIRWAY ASSESSMENT:

- Short neck
- Mouth opening 3.4 cms.
- Thyromental distance 4.5 cms.
- All teeth present with good oral hygiene
- Unable to flex, extend or rotate his neck on either side at all.
- Unable to protrude his lower incisors in front of upper incisors.
- Mallampatti Class III

X-RAY CERVICAL SPINE:

Figure 1

Figure 1: Lateral view of cervical spine is showing extensive vertebral ankylosis involving the apophyseal joints with disc calcification.



Figure 2

Figure 2: X-ray lumbosacral spine. Lateral view showing bamboo appearance



PREMEDICATION:

- Tablet Lorazepam 2 mg po 2 hours before operation
- Tablet ranitidine 150 mg po 2 hours before operation
- Tablet Metoclopramide 10 mg po 2 hours before operation

AIRWAY MANAGEMENT:

After failed epidural block and awake intubation with the conventional method of endotracheal tube insertion under topical anaesthesia by the use of a flexible fiberoptic bronchoscope (Olympus BF 3c 10), a retrograde assisted fiberoptic intubation was considered. The cricothyroid

membrane was identified and 5.0 ml of Xylocaine 2% was given through this route. A 16 G intravenous canula was successfully passed into the trachea at the injection site. Stainless steel safety guide wire with a fixed core straight flexible tip (0.97mm x 100cm) was passed through the intravenous canula and retrieved from the oral cavity. A well-lubricated 8 mm ID cuffed endotracheal tube was passed over the endoscope. The oral end of the guide wire was passed through the suction port of endoscope in retrograde direction while the other end was clamped with artery forceps at cricothyroid membrane. The bronchoscope was introduced into trachea as shown in the Figure 3.

Figure 3

Figure 3: The guide is passed in the trachea via the cricothyroid membrane. The distal end is held with artery forceps at the cricothyroid membrane and the proximal end after retrieving from mouth or nose is passed through the suction port of the fiberscope. The fiberscope already mounted with endotracheal tube is passed through the vocal cord into the trachea.



Tracheal rings were identified, the guide wire removed and the endotracheal tube rail-roaded over the bronchoscope and then the bronchoscope was removed. Correct placement of endotracheal tube was confirmed with the use of an Et CO₂ detector device.

DISCUSSION

In 1960, Butler and Cirilo₁ first described passing the guide wire via a tracheotomy stoma. This was given the name of retrograde intubation. Waters₂ who passed the epidural catheter with the help of Thoughy needle via the cricothyroid membrane to assist tracheal intubation presented the concept of percutaneous guide wire insertion in 1963. We do not know exactly who first described the Retrograde Fiberoptic Assisted Intubation. Tobias et al₃ described the method of Retrograde Fiberoptic Assisted Intubation with guide wire but they passed the bronchoscope along side of the guide wire. Audenaert et al₄ and Bissinger et al₅ reported cases of retrograde fiberscope assisted intubation through the working channel of a flexible fiberscope. S. Rao Mallampati₆ has suggested the use of suction port of fiberscope for retrograde intubation.

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