Original Research Paper

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RETROGRADE INTUBATION : THE MENACES OF USING GUIDE WIRE OF CENTRAL LINE.

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ABSTRACT

INTRODUCTION: Retrograde intubation is a very helpful technique in cases of difficult airway with small or no mouth opening. But this can become complicated if we do not correctly choose our aids. We present a case where we went into trouble because of stucking of our guide wire into cricothyroidmemberane and how we managed it.

CASE REPORT: A 14 year old female was posted for gap arthroplasty for Temporo-Mandibular joint ankylosis. Patient was planned for blind intubation failing which retrograde intubation was to be done. Cricothyroid puncture was done and a steel braided guide wire of central line was inserted through 16 guage needle. Endotracheal tube was rail roaded over it and everything was going well till we found that the wire is struck in CTM. It was a fearful moment but we manuvered our wire out from our patient by screwing movements which took us around 20 minutes.

CONCLUSION: retrograde intubation is a very important and useful technique especially in a developing country where flexible fiberoptic scope is not easily available. Our case report highlights the horrific situation which might arise because of use of a braided steel guide wire. We therefore recommend the use of epidural catheter or PCNL guide wire which is more smooth and flexible than a steel wire.

KEYWORDS :

Introduction

In retrograde intubation, trachea is intubated by guiding the endotracheal tube over a guide wire introduced percutaneously in a retrograde manner from below the vocal cords and brought out through the mouth or nose. The main advantage of this technique over common anterograde techniques of tracheal intubation is that the laryngeal inlet does not have to be identified or negotiated.

Case Report

A 14 year old female (33kg, 130 cm) presented with inability to open mouth since 6 years. Her parents gave history of trauma on face in her childhood which resulted in this progressive reduction in mouth opening. There was no history of any comorbidity. She was diagnosed with Temporo-Mandibular joint ankylosis and was posted for gap arthroplasty. Her mouth opening was less than 5 mm with normal neck movements. Thyromental distance was 7.5 cm. Anticipating difficult airway; she was prescribed oral ranitidine and metoclopramide night before surgery and on morning of surgery. Surgeons were asked to be ready for possible tracheostomy in the event of an emergency.

On the day of surgery, after attaching the standard ASA monitors and a running intra-venousline patient was given 1 mg of midazolam to relieve the anxiety of patient. Patient was given superior laryngeal block and transtracheal spray, awake blind intubation was attempted which was unsuccessful. Retrograde intubation was planned as plan B. A 16 gauge needle was used to puncture the cricothyroid membrane and a steel guide wire of central line(length 50 cms) was inserted through it and it came out through nose. . A 15 French airway exchange catheter was railroaded over it and an endotracheal tube of size 5.5 mm was then railroaded over it with ease. Catheter was removed and the tube was secured after confirmation of bilateral equal air entry. Thereafter, the guide wire was pulled but it did not come out. It was again pulled from the other end with a failure. A 16 needle was inserted over the wire in an attempt to remove any tissue adhesion and pull out the guide wire which proved to be futile. After all failed attempts, we tried to remove the wire by unscrewing movement which we found working. We pulled out a few centimetres of the wire and later pulled the whole guide wire easily. After the wire was removed, endotracheal suction was done suspecting bloodin trachea, but it was dry. Surgery was performed and the trachea of patient was extubated uneventfully after 3 hours off surgery.

After taking out the guide wire we observed that the wire got uncoiled and was most probably responsible for it getting stuck in the cricothyroid membrane.

Discussion:

The technique of blind nasal intubation has been successfully used and recommended in TMJ ankylosis[1]. It can fail and repeated attempts may injure the airway structures resulting in complications like bleeding, airway obstruction etc. The technique of retrograde intubation was originally described in 1960[2]. Since then several modifications have been reported[3, 4].

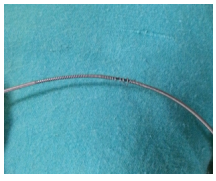
The fiberoptic bronchoscope is considered to be safer because of its non-invasive approach. It requires experience, skill and knowledge of airway for its successful completion. Moreover it is not available at all places because of its high cost. On the contrary, retrograde intubation is easier to perform[5].

Guide wire of a central line is composed of two steel wires; a thinner wire is coiled on a more sturdy wire. We choose it because of its stiffness which would ease its coming out of nose or mouth. When we tried to pull it out it got struck and our repeated pulling caused the uncoiling of wire and it got more embedded into soft tissue. Wire was intact, had it been broken it would have been very difficult for us to remove it. Had we used a guide wire with a smoother outline like ureteric guide wire used in PCNL surgeries or an epidural catheter, this complication would not have occurred. Although it came out uneventfully this could have caused substantial trauma to the airway and increased morbidity for patient which could have turned fatal also.

In our case we were able to secure the endotracheal tube and were able to ventilate the patient without difficulty. This gave us time not to make any drastic decision which could further increase the trouble.

Conclusion:

Retrograde intubation is a very important and useful technique especially in a developing country where flexible fiberoptic scope is not easily available. Our experience highlights the horrific situation which might arise because of the use of a braided steel guide wire. We therefore recommend the use of epidural catheter which is more smooth and flexible than a steel wire.



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