

CASE REPORT

AIRWAY MANAGEMENT

A case of displaced mandibular reconstruction plate and the airway

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Abstract

Difficult airway is a common problem encountered in oro-maxillo-facial surgeries. We describe a case where a displaced mandibular reconstruction plate obstructing the access to oral cavity. The airway was further compromised by previous tracheostomy, and limited neck extension owing to previous surgeries and radiotherapy. The inability of the patient to swallow increased the risk of pulmonary aspiration. The first line of airway management in such patient should be fibro-optic laryngoscopy. However, one must have alternative plans for securing airway if there are expected difficulties with fiberoptic laryngoscopy. Such plans were made considering her clinical presentation. We believe this case highlights the importance of pre-planning the strategies for airway management according to the presentation. The anesthetist must think about and plan about alternative arrangements for securing airway. Besides essential equipment expert help even from other specialties, e.g., ENT may be required.

Key words: Difficult airway; Oro-maxillary-facial surgeries; Fiberoptic intubation; Mandibular reconstruction

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1. Introduction

Difficult airway is common in oro-maxillo-facial (OMF) surgeries. These patients frequently present with extreme difficulties in mouth opening due to various conditions like oral cancers, congenital abnormalities and temporomandibular joint disease such as ankylosing spondylosis. The airway has often to be shared with the surgeon. Therefore, airway access has to be carefully planned. Some patients need repeated surgeries with implants and tracheostomies. The airway management in repeated surgeries are more challenging due to limited mouth opening and restricted neck extension. Combination of these deformities will pose an extraordinary challenge in establishing the airway. We report an unusual case, where a patient presented for an OMF surgery with a displaced mandibular reconstruction plate lying in the way of intubation.

2. Case report

An exposed titanium mandibular reconstruction plate was found on a 55-year-old woman who presented to the OMF surgical unit. Two years back, she had undergone localized wide excision of squamous cell carcinoma of the floor of the mouth, the alveolar bone, as well as selective neck dissection. A titanium mandibular reconstruction plate was used to reconstruct the mandibular deformity. During the second surgery, she had a tracheostomy, which was closed after one month. The most recent surgery was six months back. She received radiotherapy sessions after undergoing surgical resection. Six months after placement, her mandibular reconstruction plate was exposed through oral mucosa, resulting in limited mouth opening and swallowing problems (Figure 1). Because of radiation-induced fibrosis, her neck extension was limited (Figure 1). Following a tracheostomy, surgery was planned to

remove the plate until a more definitive reconstruction of the mandible could be performed. She needed a careful plan for intubation.

and trauma compromising airway. The choice of anesthetic technique is decided by careful airway evaluation, the skills of the anesthetist and the surgeon,



Figure 1: (Left) Front view of the patient showing displaced mandibular plate lying across the mouth obstructing the access to oral cavity. (Right) lateral view showing limited neck extension and scarring of neck structures and side view of the mandibular reconstruction plate.

On airway assessment, she could not open her mouth, the plate was fixed from one mandibular angle to the other angle and was not movable. She had limited neck extension due to scarring of soft tissues secondary to radiotherapy. Saliva was drooling from her mouth because she was unable to swallow. It increased the risk of pulmonary aspiration too. Orotracheal intubation was not possible because of the presence of the plate. Awake fiberoptic intubation was planned. Tracheostomy under local anesthesia was not considered as the first line procedure, because of the anticipated technical difficulty due to previous surgery and scarring of the neck. Furthermore, there was also a risk of excessive bleeding due to scarring secondary to radiotherapy. If all above was to fail, OMF surgeon was ready to cut the plate when she was awake to allow insertion of the video laryngoscope.

The patient underwent an awake nasal fiberoptic intubation following routine preparations. Even though the view was disturbed by saliva, the intubation was successful. She underwent the removal of displaced mandibular plate followed by an elective tracheostomy and had an uneventful recovery.

3. Discussion

Prevalence of difficult airway can be as high as 15–16.7% in OMF surgeries.¹ A significant number of patients present with OMF emergencies.² These may include life threatening infections like Ludwig's angina

and the available equipment.²

The use of awake fiberoptic intubation has revolutionized the airway management in difficult OMF surgeries.³ It provides unrestricted access to oral cavity, which facilitates insertion of instruments.⁴ This patient had her oral cavity covered from a foreign material and the previous surgery and radiotherapy made the neck extension limited. Therefore, she was an ideal candidate for awake fiberoptic intubation. In most of the situations, the intubation with a fiberoptic laryngoscope is straight forward and can be performed by an experienced anesthetist. However, alternative plans for the airway management should be drawn prior to attempting awake fiberoptic intubation.⁵

There has been several reports on failed fiberoptic intubation needing alternative plans.^{5,6} In most of the situations, the backup plan would be to perform a tracheostomy under local anesthesia. In this patient, performing a tracheostomy would have been difficult due to previous tracheostomy. Therefore, we needed to have an alternative plan for the airway. After discussion with OMF surgeons a plan was drawn to cut the mandibular reconstruction plate allowing insertion of the video laryngoscope in case of a failed fiberoptic intubation. Despite difficulties, the patient was intubated successfully.

Difficult intubation scenarios are common in OMF surgeries but have been made easier due to fiberoptic laryngoscopy. A proper plan has to be drawn before

attempting at intubation in patients with challenging airways to avoid unexpected complications.

4. Conclusion

Airway management is one of the basic skills for the anesthetists, and in certain cases, e.g., oro-maxillo-facial conditions it may test the expertise of the operators. Only meticulous assessment, full preparation and keeping alternative options open, can we create suitable conditions for the surgery to be completed successfully.

5. Conflict of interest

Nil declared by the authors.

6. Consent of the patient

A written consent was obtained from the patient to use his case and the pictures for the academic purposes.

7. Authors' contribution

AR: Carried out the intubation; drafted the initial manuscript; edited the manuscript

SN: Involved in manuscript editing

MH: Involved in management of the patient and manuscript editing

8. References

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