

Emergency Extraction of Accidental Impacted upper Denture in ASA IV elderly Patient: A Case Report and review of Literature

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Abstract

Case Report: A 78 years old retired Civil Servant being managed for Hypertensive heart disease and combined mixed cardiac valvular diseases (Aortic stenosis and Incompetence, Mitral stenosis and incompetence), who has been on routine medication; accidentally swallowed his upper denture during the process of his medication. He presented to the private ENT hospital about 2 hours post ingestion. His other complaints were throat pain, dysphagia and odinophagia.

Clinical examination revealed an elderly man in painful distress and anxious looking. The throat and Neck examination revealed tenderness at the level of 6th cervical vertebrae and on the right side with some pooling of saliva in the throat. The oral cavity also revealed missing upper incisor tooth.

His Cardiovascular system revealed his Apex beat at 7th Left intercostal space, heaving with irregular heart sounds and mixed beats and pan systolic murmur. His pulse rate and blood pressure were 64 beats per minutes and 170/65mmHg respectively. The other systems were essentially normal.

A review by an experienced anaesthetist (ME) placed the patient in Association of American Anaesthesiologist IV (ASA IV).

An assessment of emergency impacted upper denture in elderly patient with cardiac valvular lesion and ASA IV category was made.

Cervical x-ray could not be done because the X-ray machine was faulty. The patient had the denture extracted under local anaesthetic agent (10% lignocaine spray) and was successfully escorted out of the theater very excited. He was sent home 2 hours post extraction.

Keywords: Emergency; Upper denture; Mixed cardiac valvular disease; ASA IV; Local Anaesthesia.

Introduction

Emergency ingestion of dentures occurs frequently and globally its occurrence in elderly and cardiac patients pose enormous challenge regarding safe extraction due to the risk involved. [2] The type of anaesthesia used determines the mortality that could result from this type of patient. [3,4] Great experience and critical bedside thinking is required to make a justifiable decision in a simple well thought out approach that will result in excellent outcome in the management of this type of patient. [5] This paper highlights the management of such a high risk patient undergoing emergency denture extraction.

Case Report

A 78 years old retired Civil Servant being managed for Hypertensive heart disease and combined mixed cardiac valvular diseases (Aortic stenosis and Incompetence, Mitral stenosis and incompetence), who has been on routine medication; accidentally swallowed his upper denture while taking his medication. He presented to the private ENT hospital about 2 hours post ingestion. His other complaints were throat pain, dysphagia and odinophagia.

Clinical examination revealed an elderly man in painful distress and anxious looking. The throat and Neck examination revealed tenderness at the level of 6th cervical vertebrae on the right side with some pooling of saliva in the throat. The oral cavity also revealed missing upper central incisor tooth.

His Cardiovascular system revealed his Apex beat at 7th Left inter-costal space, heaving with irregular heart sounds and mixed beats and pan systolic murmur. His pulse rate and blood pressure were 64 beats per minutes and 170/65mmHg respectively. The other systems were essentially normal. A review by an experienced anaesthetist placed the patient in Association of American Anaesthesiologist grade IV. (ASA IV).

An assessment of impacted upper denture in patient with cardiac valvular lesion and ASA IV patient was made. Cervical x-ray could not be done because the X-ray machine was faulty. The patient had the denture successfully extracted under local anaesthesia (10% lignocaine spray).

Discussion

Denture extraction is common place surgery but what makes this case different is the category of ASA necessitating the need to be most careful. There is a limit to which type of anaesthesia or medication that can be used for ASA IV patients. [6] A study reported

the use of local anaesthetic spray [7] in the removal of denture but none in ASA IV patients unlike this present study. Anaesthesia use in the elderly require extreme caution but more so in the elderly with cardiac disease. [8] Attention must be given to simplicity and in particular the instrument design. [9] In literature, the straight blade McIntosh laryngoscope was acclaimed to be the best suited in elevating the epiglottis and to provide access and good view for this type of extraction. However, in this index case, a curved blade McIntosh laryngoscope was used in conjunction with a foreign body grasping forcep to extract the denture as the straight bladed one was not available (Figure 1).



Figure 1: Showing the extracted upper denture post-operatively.

Precaution must be taken considering the use of aerosolized local anaesthetic agent (LA) because it may provoke asthmatic attack. [10] However, this may also be used in stopping bronchospasm when it does occur. Though under LA, emergency resuscitative medications and facilities like oxygen, adrenalin and steroid must be handy to intervene. [10].

It is of paramount importance to observe meticulously simple, salient, scientific and safe details when handling this type of risky situation. The patient must be carried along with respect to explanation of the details of the procedure and attendant risk. This no doubt will go a long way in ensuring optimal management while highlighting the risk associated with the form of anaesthesia or sedation to the patient. [11]. A salient detail involved numbing of the anatomic areas of the pharynx to reduce gag reflex. [12] In this case, with the patient lying supine on the operating couch and

mouth open, the oropharynx and hypopharynx were first anaesthetized using (10%) lignocaine spray commencing from the base of uvula and soft palate, the right and left tonsil mucosal surfaces, the base of tongue and waited for about 5 minutes; there after the gag reflex was tested using wooden spatula and after establishing its absence, the curved blade anaesthetist laryngoscope was used to visualize the pharynx.

A further anesthesia of the pharynx up to the tip of the epiglottis was ensured after a period of additional five minutes. Sequentially the tip of the superior surface of the epiglottis and a bit of the laryngeal surface were anaesthetized. This was followed by lifting the tip of the epiglottis and viewing part of the foreign body, which was grasped with foreign body forceps and gently disimpacting it outwards and finally retrieved. Bennett and co [12] in Addenbrooke, United Kingdom used 10% lignocaine in a similar manner to numb the mouth and pharynx in their transnasal flexible laryngo-oesophagoscopy while using other combinations for the nostrils in their study and achieved anaesthesia within 5 minutes. The procedure involved the choice of the best instrument designed [9] to accomplish denture removal. In our instance, though instruments are designed to ease operation, the straight blade was not available.

The contrast was the case, by using the curved blade anaesthetic laryngoscope; we were able to effect this extraction without difficulty. Beyond the scientific design, experience is a good guide when faced with challenges of this nature. The safety involved the use of anaesthesia that does not usually pose danger to the general system of ASA IV patients. Lienhart and co-workers [13] in France noted there was association between anaesthesia related death and age or patients ASA status. In this index case, lignocaine spray (10%) was used to avoid cardiac depression that is common with the use of halothane which was the only inhalational anaesthetic agent available at this point in time. This agrees with the findings of Joseph and colleague [6] in Columbus, United States to avoid adverse effect which may affect cardiovascular system among others.

Though radiology is paramount but dentures are often not visible on the plain radiograph. The clinical feature of odynophagia and pointing to the site of lodgment was a reliable guide about the position of the denture when x-ray was not available; this was the case with this patient. The x-ray machine was none functional but patient pointed to the exact location of the pain. The denture was safely extracted under lignocaine spray of 10% concentration and escorted out of the theatre safe, sound and without more morbidity or mortality.

Conclusion

Emergency challenges like this will come the way of practicing Otolaryngologist where the risk of morbidity and mortality certainly are realities during treatment. As much as possible good appraisal, consideration of best safety option, simplicity, and experience should be the guide to avoid unnecessary morbidity and mortality while extracting this type of foreign body

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