



Case Report

Emergency extraction of accidental impacted upper denture in the Association of American Anesthesiologist IV elderly patient: A case report and review of literature

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ABSTRACT

A 78-year-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 h post-ingestion. His other complaints were throat pain, dysphagia, and odynophagia. Clinical examination revealed an elderly man in painful distress and anxious looking. The throat and neck examination revealed tenderness at the level of the 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 the 7th left intercostal space, heaving with irregular heart sounds and mixed beats and pansystolic murmur. His pulse rate and blood pressure were 64 beats/min and 170/65 mmHg, respectively. The other systems were essentially normal. A review by an experienced anesthetist (ME) placed the patient in the Association of American Anesthesiologist 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 anesthetic agent (10% lignocaine spray) and was successfully escorted out of the theater very excited. He was sent home 2 h post-extraction.

Keywords: Emergency, Upper denture, Mixed cardiac valvular disease, Association of American Anesthesiologist IV, Local anesthesia

INTRODUCTION

Emergency ingestion of dentures occurs frequently and globally^[1] its occurrence in the elderly and cardiac patients pose enormous challenge regarding safe extraction due to the risk involved.^[2] The type of anesthesia used determines the mortality that could result from this type of patient.^[3,4] Great experience and critical bedside are 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-year-old retired civil servant being managed for hypertensive heart disease and combined mixed cardiac valvular diseases (aortic stenosis and incompetence, mitral stenosis and

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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 h post-ingestion. His other complaints were throat pain, dysphagia, and odynophagia.

Clinical examination revealed an elderly man in painful distress and anxious looking.

The throat and neck examination revealed tenderness at the level of the 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 the 7th left intercostal space, heaving with irregular heart sounds and mixed beats and pansystolic murmur. His pulse rate and blood pressure were 64 beats/min and 170/65 mmHg, respectively. The other systems were essentially normal.

A review by an experienced anesthetist placed the patient in the Association of American Anesthesiologist 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 anesthesia (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 anesthesia or medication that can be used for ASA IV patients.^[6] A study reported the use of local anesthetic (LA) spray^[7] in the removal of denture but none in ASA IV patients unlike this present study. Anesthesia use in the elderly requires 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 Macintosh 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 Macintosh laryngoscope was used in conjunction with a foreign body grasping forceps to extract the denture as the straight bladed one was not available [Figure 1].

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



Figure 1: The extracted upper denture postoperatively.

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 anesthesia 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 anesthetized using 10% lignocaine spray commencing from the base of uvula and soft palate, the right and left tonsil mucosal surfaces, and the base of tongue and waited for about 5 min; thereafter, the gag reflex was tested using wooden spatula and after establishing its absence, the curved blade anesthetist 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 5 min. Sequentially, the tip of the superior surface of the epiglottis and a bit of the laryngeal surface were anesthetized. 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 outward and finally retrieved. Bennett *et al.*^[12] in Addenbrooke, United Kingdom, used 10% lignocaine in a similar manner to numb the mouth and pharynx in their transnasal flexible laryngoesophagoscopy while using other combinations for the nostrils in their study and achieved anesthesia within 5 min. 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, using the curved blade anesthetic 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 anesthesia that does not usually pose danger to the general system of ASA IV patients. Lienhart *et al.*^[13] in France noted that there was an association between anesthesia-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 anesthetic agent available at this point in time. This agrees with the findings of Joseph *et al.*^[6] in Columbus, United States, to avoid adverse effect which may affect cardiovascular system among others.

Although 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;^[14] this was the case with this patient. The X-ray machine was none functional, but the 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 theater 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 is 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.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Bonavina L, Aiolfi A, Siboni S, Rausa E. Thoracoscopic removal of dental prosthesis impacted in the upper thoracic esophagus. *World J Emerg Surg* 2014;9:5.
2. Kheterpal S, O'Reilly M, Englesbe MJ, Rosenberg AL, Shanks AM, Zhang L, *et al.* Preoperative and intraoperative predictors of cardiac adverse events after general, vascular, and urological surgery. *Anesthesiology* 2009;110:58-66.
3. Kilci O, Un C, Sacan O, Gamli M, Baskan S, Baydar M, *et al.* Postoperative mortality after hip fracture surgery: A 3 years follow up. *PLoS One* 2016;11:e0162097.
4. Fitz-Henry J. The ASA classification and peri-operative risk. *Ann R Coll Surg Engl* 2011;93:185-7.
5. Rivera R, Antognini JF. Perioperative drug therapy in elderly patients. *Anesthesiology* 2009;110:1176-81.
6. Tobias JD, Leder M. Procedural sedation: A review of sedative agents, monitoring, and management of complications. *Saudi J Anaesth* 2011;5:395-410.
7. Lin HC, Chen CJ, Lin HH, Huang JT, Chen MJ. Endoscopic treatment of esophageal foreign bodies in the elderly. *Int J Gerontol* 2013;7:35-9.
8. Froehlich JB, Eagle KA. Anaesthesia and the cardiac patient: The patient versus the procedure. *Heart* 2002;87:91-6.
9. Melntyre JW. Laryngoscope design and the difficult adult tracheal intubation. *Can J Anaesth* 1989;36:94-8.
10. Lee MY, Park KA, Yeo SJ, Kim SH, Goong HJ, Jang AS, *et al.* Bronchospasm and anaphylactic shock following lidocaine aerosol inhalation in a patient with butane inhalation lung injury. *Allergy Asthma Immunol Res* 2011;3:280-2.
11. Lim MA, Borrromeo GL. The use of general anesthesia to facilitate dental treatment in adult patients with special needs. *J Dent Anesth Pain Med* 2017;17:91-103.
12. Bennet AM, Sharma A, Price T, Montgomery PQ. The management of foreign bodies in the pharynx and oesophagus using transnasal flexible laryngo-oesophagoscopy (TNFLO). *Ann R Coll Surg Engl* 2008;90:13-6.
13. Lienhart A, Auroy Y, Pequignot F, Benhamou D, Warszawski J, Bovet M, *et al.* Survey of anaesthesia-related death in France. *Anesthesiology* 2006;105:1087-97.
14. Singh P, Singh A, Kant P, Zonunsanga B, Kuka AS. An impacted denture in the oesophagus-an endoscopic or a surgical emergency-a case report. *J Clin Diagn Res* 2013;7:919-20.

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