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Anesthesiology

Migration of tooth in the Nasopharynx – Fatal accident during intubation !

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ABSTRACT Anaesthesia with endotracheal intubation is very skillful procedure with many major and minor complications. Dental trauma is one of the complication of laryngoscopy. Meticulous preoperative evaluation is mandatory to avoid such dental and other anaesthesia related complication. Negligence has very less margin of safety in anaesthesia. We have to face chain of complications if we neglect or not take immediate action on any accident during conduct of anaesthesia. Here ,we represent a case report of tooth injury and migration of tooth in nasopharynx in a patient undergoing Coronary artery bypass surgery with mitral valve replacement.

KEYWORDS : Dental injury, anaesthesia accident ,anaesthesia complications.

INTRODUCTION-

"Well begun is half done"!. . . . . Aristotle.

Pre anaesthesic evaluation is the first step of anaesthesia management. Proper evaluation and treatment will definitely lead to a suucessful outcome. There are many minor and major anaesthesia complications(1). Though dental injuries are considered as acute traumatic complications of lesser significance(2), (3). Pulmonary aspiration of tooth can be fatal for a patient. Compulsary dental evaluation and intervention should be given priority in patients having poor oral hygiene. (4)

That is why oral cavity examination and pre operative removal of mobile tooth should be advisable. Tooth injury are of various types and graded (5) as

class I-fracture into the enamel layer.
class II-fracture into the dentinal layer.
classIII-fracture into the tooth pulp.
class IV - fracture of the tooth root.
class V - subluxation of a tooth.
class VI- avulsion of tooth. .

Etiology of dental trauma includes 1. emergencies. 2. Difficult anticipated inntubations[3] caries, periodontal disease, restorations of teeth, crowns, or fixed partial dentures(6). tooth protectors are advisable but they itself gives less space to laryngoscopy and causes difficulty in intubation. Dental trauma can happen without anticipation by expert hands too. No study shows that trainee doctors do more trauma and experienced hands less(7). Incidence of tooth injury in perioperative period 12,1 % (8).

Case Report-

A 65 years old man,diabetic since 10 years,hypertensive since 10 years was admitted with the diagnosis of Ischaemic heart disease with Triple vessel disease with Mitral Regurgitation grade 3. Patient was a known tobacco chewer since 15 years,an alcoholic since 8 years and known case of HBsAg positive(Australia antigen).

All the laboratory investigations were within normal limits,sugar was well controlled. On Electrocardiogram patient was in atrial fibrillation,2-D echo revealed ejection fraction of 55% with severe mitral regurgitation. Patient was electively posted for Coronary artery bypass grafting (CABG) with mitral valve replacement (MVR).

Patient's oral cavity examination revealed macroglossia with Mallampatti grade 2 and central incisors were artificial (denture teeth). Patient did not give any history regarding mobile teeth. As per routine protocol, under local anaesthesia and invasive monitoring like central venous canulation,arterial blood pressure monitoring cannulation done. Patient was induced with injection Fentanyl 300mcg,injection Etomidate 5mg and injection Vecuronium8m. Intubation was done with Trupti blade number 4 as patient was Mallampatti grade2. Endotracheal tube number 8. 5 was inserted with the help of a bougie as the vocal cords were anteriorly placed. While doing direct laryngoscopy lateral upper incisor broken off and because of handling of the endotracheal tube at the same time the tooth was displaced inside. After fixing the endotracheal tube,we did a repeat direct laryngoscopy and tried to visualize and locate the tooth. We could visualize the tooth but while trying to remove. It slipped down and we were not able to visualize the tooth. We assumed two possibilities, the first being the tooth slipping off and entering the esophagus and the second the tooth being in the nasopharynx. After surgical procedure patient came off cardio pulmonary bypass uneventfully. ECG showed atrial fibrillation with 98 beats /min. Post cardio pulmonary bypass patient's arterial blood gas (ABG) was done and was within normal limits. Even the serum electrolytes were within normal limits. Before shifting the patient to the cardiac care unit direct laryngoscopy was done by another consultant but was unable to visualize the tooth and blood was found collected in the oral cavity. Immediately after shifting the patient to the Cardiac Care Unit(CCU) three X-rays were done with the following views; lateral view of neck,anteroposterior view of chest with erect abdominal view. To our surprise we found the tooth in nasopharynx and we gave a referral call to an E. N. T consultant for tooth removal.

On routine indirect laryngoscocy(IDL) they could not visualize the tooth. A fibreoptic endoscope was used by them and was inserted through the nasopharynx. The tooth was visualized by the consultant and was found floating in secretions in the cavity behind uvula. They removed the tooth successfully. The gums were oozing and minimal amount of blood was collected in the cavity.

Maximum teeth of the patient were mobile and were decayed with gingivitis. This procedure had an event of ill sustained ventricular fibrillation and ventricular tachycardia though the blood pressure was within normal limits. Patient had a low urine output for 2-3 hours. Patient was in atrial fibrillation with premature ventricular ectopics. Patient was having a normal potassium levelof 3. 8mEq/ltr with blood pressure maintaining to120/60mmHg and above. Patient was electively ventilated and was extubated next morning.

After the patient was extubated there was no airway discomfort or pain,no hoarseness of voice and the patient was maintaining saturation to 99-100% with oxygen supply of 5 litres/min.

Patient was explained about oral and dental hygiene and counselled for further treatment.

DISCUSSION-

Dental trauma is a known anaesthetic complication during intubation or extubation. In our case patient had not informed us about the loose teeth (lateral incisors),otherwise this patient could thoroughly evaluated by a dentist. All teeth (molars) were decayed and had gingivitis. Thus trivial trauma while handling oralcavity with a trupti blade number 4 caused avulsion of tooth completel;y. In a teaching institute resident doctors may not have maturityabout tissue handling and the serious consequences of any untoward event. If the broken tooth would have been picked up immediately at the same time,it would not have displaced and lodged up in nasopharynx. 72% of dental injury occurs in the 50-70 years age group(9). Added with direct dental trauma in patients with pre existing infection of oral cavities,they are at high risk of dental trauma during intubation(10). We have used a trupti blade, a blade with a large height,large tongue surface and very less room to manipulate the endotracheal tube which caused more pressure on teeth followed by its avulsion and the tooth could not be visualized in oropharynx. It is recommended to use a lower height blade which reduces the direct contact between maxillary teeth by 80% and so reduces trauma. (11)

As our patient was a cardiac-surgical patient he had a native cardiac pathology for arrhythmias,so during manipulation attempt,the arrhythmias got aggrevated and the patient landed in low cardiac output status for 2-3 hours and delayed the recovery of the patient Oral bleeding secondary to gingivitis was aggrevated by dental trauma,handling and residual heparin effect. Either a trainee or an experienced anaesthesiologist can cause a dentalinjury and then it becomes a big mistake at the anaesthesiolgy team. There is no malpractise claim but the patient suffers in the formof delayed recovery,discomfort because of broken tooth and economic burden too. (12)

Hence we recommend some some tips for trainees as well as consultant anaesthesiologists-

1. Proper oral cavity evaluation must be done.
2. If any positive findings like decay ,gingivitis,highly mobile tooth,it should be informed and immediate action should be taken for it.
3. A mobile tooth can be wrapped by 3-0 silk to fix it and adequate cushion by a gause piece can be given. .
4. Gentleness during laryngoscopy is mandatory with minimal vertical and oblique pressure. if any broken tooth is noticed,it should be hold and removed immediately.
5. If its not possible to visualise the tooth before extubation, confiranmation of position of tooth is mandatory to avoid aspiration after extubation.
6. Post operative radiology work up and removal with guidance of an X-ray.
7. If it is in the oesophagus and size is less than 2. 5cm then no intervention is required. (13-15),
8. If it is in the airway then emergency fibreoptic removal by experts is needed.
9. Watch for oral bleed and haemodyanamic instability.

CONCLUSION-

Anaesthesia evaluation is the primary step where many further problems can anticipate and intervention can be done. As in our case , to treat a complication we have to face newer problems and sometimes fatal consequences. Dental evaluation should be done seriously and proper care should be taken. Vigilance is the crux of anaesthesia care it should be always followed by each and every anaesthesiologist.

REFERENCES-

1- Weber S. Traumatic complications of airway management. Anesthesiology Clin N Am 2002; 20: 503-512.
2- Loh KS, Irish JC. Traumatic complications of intubation and other airway management procedures. Anesthesiology Clin N Am 2002; 20: 953-969.
3. Vaibhav sahni. dental considerations in anaesthesia. Journal of the Royal Society of Medicine Open;7(12) 1–5
4. Saeed Riad Idrees1,2, Kazuma Fujimura' Dental Trauma related to General Anesthesia: Should the Anesthesiologist Perform a Preanesthetic Dental Evaluation. OHDM - Vol. 13 - No. 2 - June, 2014.
5. 2. Lockhart l', Feldban E, Gabel R, et al. Dental complications during and after tracheal intobation. J Am Dent Assoc 1986;112:480-3.
6. Dental Trauma due To Intubating during General Anaesthesia: Incidence, Risks Factors, and PreventioSalman Ansari, Vikas Rajpurohit, Vikas Dev OHDM- Vol. 15- No. 6- December, 2016 Sharad Pawar Dental College and Hospital, Maharashtra, India
7. Chen JJ, Susetio L, Chao CC. Oral complications associated with endotracheal general anesthesia. Anaesth Sinica. 1990; 28: 163–169.
8. Givol N, Gershtansky Y, Halamish –Shani T, Taicher S, Perel A ,Segal E. Perianaesthetic dental injuries : analysis of incidence reports. J Clin Anaesth 2004;16:173-76.
9. Burton J, Backer A. Dental damage during anesthesia and surgery. Anaesth Intensive care1987;262-76.
10. Lee J , Choi J , Lee Y , Kim E , Kwon O , Hastings R. The callandar laryngoscope blade modification is associated with a decreased risk of dental contact, can J Anaesth 2004;51:181-84.
11. Dorsch JA, Dorsch SE. Understanding anaesthesia equipment: construction, care and complications, 3rd ed. Baltimore: Williams and Wilkins, 1994.
12. K. V Ramana Reddy1,Priyanka Nath, What went wrong? Case report and protocol for management of dislodged tooth during ASIAN PACIFIC JOURNAL OF HEALTH SCIENCES, 2015; 2(4S): 15-18 e-ISSN: 2349-0659, p-ISSN: 2350-0964
13. C Rodriguez Martinez , MP Sossa factors associated with complications caused by bronchoscopy in pediatric patients :Archives de Brnconeumologia ,2014;50(07): 263-31.
14. Singh B, Gady Har EL, Kantu M, Lucente FE. Complications associated with 327 foreign bodies of the pharynx, larynx and esophagus. Ann Otol Rhinol Laryngol 1997;106:301-4.
15. A. M. Shivakumar et al Indian Journal of Otolaryngology and Head and Neck Surgery. 58(1)