Airway Obstruction During Treatment in Dental Clinics: A Review

Dr. Rohan Gupta[1], Dr. Nandita Gogoi[2]

Assistant Professor[1], Dental Surgeon[2], Department of Periodontics[1], Rajasthan Dental College & Hospital[1], Jaipur, Rajasthan, M.G. Model Hospital[2], Jorhat, Assam

How to cite this Article: Gupta R,Gogoi N.Airway Obstruction During Treatment in Dental Clinics: A Review.HTAJOCD.2019;11(6):49

Introduction

Many complications can arise during the routine delivery of dental care. These complications include adverse drug reactions, allergic reactions to dental materials, physical injury from instrument slippage or breakage and swallowing or aspirating foreign objects. The consequences of aspiration a foreign object or material can range from immediate obstruction of the airway to long lasting pulmonary complications.

Any object routinely placed into or removed from the oral cavity during dental or surgical procedures can be aspirated or swallowed. These items can include teeth, restorations, restorative materials, instruments, implants parts, rubber dam clamps, gauze packs and impression materials.

The possibility of swallowing or aspirating an object is increased by the common practice of placing the patient in a supine position for sit down, four handed dental treatment. Other factors that may increase the possibility of aspiration include age: decreased gag reflex in elderly patients. Medical conditions: stroke, dementia and Parkinson's diseases, use of local anesthetics and altered states of consciousness associated with intravenous sedation. In retrospective study by Limper and Prakash reported that the second most common cause of foreign body aspiration in the lungs was of dental origin.

Early Complications Can Include

- Hypoventilation with lung abscess
- Hypoxia
- Later complications a pneumonia and atelectasis.

Foreign bodies falling into the hypopharynx can lead to partial or complete obstruction.

Causes of Airway Obstruction

1. Hypo-pharyngeal Obstruction (Foreign body)
2. Blood, vomitus, water, or saliva in mouth
3. Bronchoconstriction
4. Laryngospasm
5. Tongue (most common)

Signs & Symptoms

1. Gasping for breath
2. Patient grabs at throat
3. Panic
4. Suprasternal or supraclavicular retraction

If Partial Obstruction

1. Snoring
2. Gurgling
3. Wheezing
4. Crowing

If Total Obstruction

1. No noise

Management of Foreign Body Aspiration

- Place patient supine position and semi raised position the floor
- Head tilt/chin lift
- Check airway and breathing, assess cause of obstruction
- If obstruction caused by fluids use suction (Yankhauer suction)
- Consider Jaw Thrust
- Place fingers behind posterior border of ramus and displace out
- Open mouth with thumbs
- Reassess airway and breathing
- If not breathing attempt artificial ventilation
- Reassess airway and breathing
- If vigorous coughing is not effective Heimlich Maneuver should be used; with the patient in standing position, we grasp him or her behind with both arms.

Surgical Airway

In some cases of airway obstruction caused by a foreign body that cannot be dislodged or laryngospasm it may be necessary to perform a surgical airway procedure or Cricothyrotomy. This procedure should only be done on adults due to the position of the vocal chords in children.

Trained personnel should only do this procedure if there is a delay in the arrival of emergency medical service (EMS).

- Patient is placed supine with head tilted back
- Neck is moderately hyperextended
- Place finger on laryngeal prominen -ce (Adams apple) of thyroid carti-lage, move finger inferior into light depression.
- Use thumb and second finger to hold thyroid up and index finger to identify
- Membrane
- Using a #15 blade make a 2cm incision through skin, adipose tissue, and fascia, cricoid cartilage will prevent penetration into esophagus
- Handle of scalpel into trachea and then rotate
- In order to have proper airway large gauge syringe, endotracheal tube to be used
- Ventilation is required if no spontaneous respiration occurs.

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