Difficult airway: Airtraq—a boon

Dear Editor,
Conventional laryngoscopy and intubation is a standard technique of airway management. However, it may be difficult in certain circumstances like in patients with restricted neck movements and decreased mouth opening. These patients pose a great challenge to anesthesiologists requiring airway management. Anesthesiologists should be familiar to alternate techniques to manage difficult airway scenario.

A 55-year-old male was diagnosed with carcinoma of left buccal mucosa and was scheduled for resection and flap reconstruction. Upon examination, mouth opening was 2 cm and neck movements were restricted. Left nares were less patent as per the ear, nose, and throat (ENT) surgeon. Blood pressure (BP) was 120/76 mm Hg and heart rate was 90/min. Respiratory and cardiovascular systems were unremarkable. Relevant laboratory investigations were normal. Chest X-ray and electrocardiogram were normal. Surgeons needed nasal intubation. Therefore, awake nasal intubation using fiberscope was planned. The procedure was explained to the patient on the evening prior to surgery and consent was taken for the same. He was premedicated with 0.25 mg alprazolam along with 150 mg ranitidine in the night and 2 h before surgery. Preoperatively, his nose was decongested with xylometazoline nasal drops.

Standard monitors were attached in the operating room. Using 18 G cannula intravenous (IV) line was secured and Ringer’s lactate was started. Glycopyrrolate 0.2 mg and fentanyl 30 µg were given intravenously. Nebulization was done with xylocaine. Superior laryngeal nerve along with transtracheal block were given. Ten percent Xylocaine was sprayed. Jelly was instilled into the right nostril and
nasopharyngeal airway (NPA) 7 mm was tried but even 6 mm airway could not be inserted. Fiberscope was inserted without NPA and trachea was visualized. But, even a passage of 6 mm internal diameter tube was not possible. The ENT surgeon’s opinion was taken. An S-shaped nasal septum was detected and nasal intubation was not possible. Patient was rescheduled for surgery one week later by the surgeons. Now, oral endotracheal intubation was planned. The mouth opening was just 2 cm. A Macintosh laryngoscope could not be inserted. So, intubation using an Airtraq was planned. Anesthesia was induced with fentanyl 100 $\mu$g and propofol 120 mg. Adequacy of ventilation was checked and 75 mg succinyl chloride was given.

Laryngoscopy was done using an Airtraq laryngoscope. Vocal cords were swollen. However, trachea was intubated successfully using an endotracheal tube with an internal diameter of 7 mm. Anesthesia was maintained with 67% nitrous oxide in oxygen, sevoflurane, and vecuronium. Intraoperatively, surgeons performed tracheostomy. Surgery lasted for 12 hours. At the end of the surgery, the patient was put on a ventilator for that night. Intraoperative and postoperative course was uneventful.

Difficult airway poses a major challenge to anesthesiologists. A leading cause of complications in anesthesia practice is failure to intubate the trachea successfully and secure the airway. A large number of alternate airway devices and techniques have been developed and successfully implemented in difficult airway management algorithms.

Difficult intubation was anticipated due to restricted neck movements and a mouth opening of 2 cm. Initially, we planned awake nasal intubation, but it could not be successful due to the S-shaped nasal septum. The option left with us was oral intubation either awake or under anesthesia. We were planning awake oral fibreoptic intubation. Though last time the patient consented for awake intubation, this time the patient was very anxious and he refused. Mouth opening of 2 cm was a concern as the insertion of a Macintosh laryngoscope insertion was quite difficult with it.

Video laryngoscopy is considered as an initial approach for difficult intubation as advised by the American Society of Anesthesiologists (ASA) difficult airway algorithm. Airtraq requires 19 mm mouth opening and McGrath has an anterioposterior width of 15 mm. Both of these could be used in this patient. We had an Airtraq, and we used it to intubate the patient. Airtraq facilitates tracheal intubation in difficult airways as it enables a better quality view of the glottis without the need to align the oral, pharyngeal, and laryngeal axes. Airtraq has been used successfully in a simulated difficult airway or clinically difficult airway and as a rescue device after failed attempt with conventional laryngoscopy. However, alternate arrangements like cricothyrotomy, tracheostomy, and transtracheal jet ventilation were kept as standby.

To conclude, airway management is the main responsibility of the anesthesiologists. Anesthesiologist should have a knowledge of anticipated difficult airway and all the arrangements should be made to manage it.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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Dear Editor,

Mallampati classification is an important airway assessment tool that is often used. It has been used with limited discriminative power for difficult tracheal intubation. It is a simple, reproducible, and reliable pre-anesthetic airway assessment method when performed properly. Modified Mallampati classification was defined by Samsoon and Young in 1987 and they mentioned 4 grades according to the anatomical structures.[1] They modified the classification given by Mallampati et al. and used it as assessment tool of difficult intubation.[2] Samsoon classified it as Grade 1: Faucial Pillars, Uvula, Soft palate, Hard palate; Grade 2: Uvula, Soft palate, Hard palate; Grade 3: Soft palate, Hard palate; Grade 4: Hard palate only.

This classification is used in each and every patient as an effective airway assessment tool. The components of Mallampati classification are ought to know by all the undergraduate, post graduate students, technical staff, and anesthesiologists. A mnemonic device is any learning technique and it aids retention of information or retrieval (remembering) in human memory. Mnemonics helps in fact remembrance and are particularly useful when the order of things is important.[3]

It is always time saving, effortless learning, and simple to remember the things.

The authors are medical school teachers and designed a mnemonic for Mallampati Grading, that is helping to all the students to remember it. It is designed as “PUSH”.

With each grade, delete one alphabet and finally last will be “H” as grade 4 i.e., Hard palate only (See below and in box).

Grade 1: Faucial Pillars, Uvula, Soft palate, Hard palate: PUSH

Grade 2: Uvula, Soft palate, Hard palate: USH

Grade 3: Soft palate, Hard palate: SH

Grade 4: Hard palate only: H

For last many years, the authors are using this mnemonic in teaching all students and in all airway management forums regularly. As an observation, this mnemonic is easy to learn, reproduce and implement in day-to-day practice of airway assessment and management.

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