

Unanticipated difficult airway

Sir,

Management of difficult airway is always a challenge to anaesthesiologists. When anticipated, it allows time and preparation to ensure patient safety. In spite of preparation on rare occasions a sudden 'cannot ventilate' situation arises that may lead to a catastrophe. This case report presents one such situation. How the airway was maintained and ventilation was achieved and was discussed in details in our manuscript.

A 5-year-old female presented with respiratory distress since 7 days, worsening for last 24 h with a history of voice change for 8 months. Patient was treated for

acute laryngotracheobronchitis, without response and was referred to our hospital for respiratory distress. On admission, patient weighed 15 kg, pulse rate 120/min, blood pressure 68/50 mmHg and respiratory rate 40/min. Respiration was spontaneous, regular, accessory muscles of respiration were active with no subcostal/intercostals recession. There was no h/o snoring since a change in voice. Respiratory distress was not associated with sleep or any particular position. Wheeze and rales were present bilaterally. Routine investigations were within normal. Chest and neck X-rays were normal. Possibility of organic foreign body was not ruled out. Patient did not allow indirect laryngoscopy.

Differential diagnosis of chronic foreign body bronchus and chronic tracheobronchitis was made. An emergency bronchoscopy was planned because of respiratory distress.

On the operation table with routine monitoring, pre-operative SpO₂ was 99% on oxygen. A 22G intravenous access was secured. Patient was premedicated with fentanyl 30 µg intravenous and glycopyrrolate 0.15 mg intravenous. After preoxygenation, induction achieved with sevoflurane. After successful mask ventilation suxamethonium, 25 mg was administered and intermittent positive pressure ventilation continued. However, after complete relaxation ventilation became impossible in spite of triple manoeuvre, well-fitted face mask and with appropriate size oropharyngeal airway (size 1 guedel's airway).

Immediately direct laryngoscopy was performed that revealed a soft-tissue mass totally occluding the glottis. While preparations were on to surgically secure the airway, an attempt of intubation with a lubricated 4.0 mm endotracheal tube was made and airway secured by slipping the endotracheal tube along the mass margin and satisfactory oxygenation established. During this period, the oxygen saturation did not fall below 95%.

A detailed endoscopic evaluation revealed a soft-tissue papillomatous mass, likely of laryngeal origin obstructing the glottis. A tracheostomy was performed and bronchoscopy deferred in favour of definitive surgery after evaluation.

Airway problems are challenging to the anaesthetist, especially in a child with respiratory distress. In this case,

following induction, ability to ventilate was checked and assured, hence possibility of cannot ventilate situation no longer anticipated and suxamethonium administered. Even after suxamethonium administration ventilation was possible, but with the onset of total paralysis, cannot ventilate situation was encountered. This is best explained by the fact that the tone of the laryngopharyngeal muscles that was holding the soft-tissue mass away from the glottis was lost with muscle relaxant and the mass fell in place totally obstructing the glottis.^[1,2]

Laryngeal papilloma, also known as recurrent respiratory papilloma, a viral disease of respiratory mucosa, produces a cauliflower like growth is caused by human papilloma virus 6, 11 and 16.^[1,3] It also causes skin warts and condyloma acuminatum on genital region.^[3] Infection is commonly acquired during the vaginal delivery leading to a childhood infection until puberty and occasionally adult life, especially in immune-compromised and low socio-economic states.^[1,3]

Patient usually presents with stridor, hoarseness or voice change and in later stages with respiratory distress.^[3] It is often misdiagnosed as asthma, tracheobronchitis, croup, tracheomalacia and treated as such.^[1] The diagnosis is clinched when patients go into severe respiratory distress and are thoroughly investigated. Proper diagnosis is made with a biopsy from the lesion.

It requires repeated surgical excisions, cauterization, cryosurgery, laser ablation and acyclovir.^[1,4] Pulmonary seeding and malignant change has also been reported.^[1,5] Shen and Li suggested airway management in a child with laryngeal papilloma by inducing with sevoflurane, deepening anaesthesia with intravenous fentanyl and allowing the patient to resume spontaneous breathing.^[6] Inability to secure airway in severe obstruction necessitates an emergency cricothyroidotomy/tracheostomy.^[1,3]

Ability to mask ventilate after induction of general anaesthesia assures and leads to a state of complacency, which can be disastrous as it does not rule out 'cannot ventilate situations.'

Patients presenting with respiratory distress must be thoroughly investigated to rule out upper airway obstruction with the help of radiology, indirect laryngoscopy or awake fiberoptic endoscopy.

Pre-operative assessment by otolaryngologist and anaesthetist together is must to avoid potential crisis and surgical access to the airway must always be ready at hand.

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