An unusual cause of upper airway obstruction in a child during general anaesthesia

Sir,

A 10-year-old girl, 130 cm tall, weighing 30 kg and belonging to a low socio-economic status, was brought to the emergency operation theatre for emergency appendicectomy for acute appendicitis. History was otherwise unremarkable. She belonged to American Society of Anaesthesiologists physical status I and her airway (Mallampati) grade was I. Her vital parameters were normal for her age with oxygen saturation (SpO₂) of 99% in room air. During induction of general anaesthesia, difficulty was faced during mask ventilation after succinylcholine administration together with stridor, inadequate chest movement and breath sounds, followed by desaturation. Prompt laryngoscopic examination revealed a brown elongated worm moving towards the glottis opening. The worm was immediately removed using Magill’s forceps [Figure 1]. SpO₂ quickly returned to normal with normal auscultatory findings. Repeat laryngoscopy after intubation (6 mm ID cuffed endotracheal tube [ETT]) revealed a second worm migrating out of the oesophagus and was removed. The rest of the surgery was uneventful, the patient was successfully reversed, extubated and sent to ward. The worm was later identified to be roundworm or *Ascaris lumbricoides*. Deworming was done afterwards with a single per oral dose of tablet- albendazole 400 mg.

She had no history of ascariasis worm expulsion or respiratory symptoms due to this. Infestation by nematode *A. lumbricoides* is still endemic in various parts of the world. Population at risk include a low socio-economic status, suboptimal sanitation, poor personal hygiene affecting mainly children and malnourished individuals and is acquired through ingestion of embryonated eggs.\(^1\) Deposition of adult worms in the lungs or respiratory tract is not a part of the life cycle. Adult worms may migrate towards the oesophagus and enter airways, especially under the influence of general anaesthetics\(^2\) when swallowing and cough reflexes are obtunded. In the present case, this was likely to be assisted by (i) relaxation of lower oesophageal sphincter giving an opening to the worm to escape from rising intragastric pressure due to succinylcholine\(^3\) (ii) horizontal positioning (iii) lack of swallowing reflex (iv) decreased gastric acid release due to H2 blockers premedication. *A. lumbricoides* infestation may be associated with pulmonary infiltrates with eosinophilia and potential intra-operative bronchospasm also forms an important anaesthesia consideration.\(^4,5\)

In a previously reported case, the worm was pushed into the larynx during nasotracheal intubation in a child with burn injuries nearly occluding the end of ETT, identified on fibreoptic bronchoscopy and was suctioned out.\(^6\) In another case, a child with head injury intubated with an uncuffed tube had difficulty during weaning from ventilator as the worm sat at the carina obstructing both bronchi, which was removed with the help of a rigid bronchoscope.\(^1\) Airway obstruction and desaturation due to *Ascaris* has also been reported in an adult polytrauma patient on ventilation in intensive care unit (ICU) and the path of entry was presumed to be around a loosely fitted ETT cuff.\(^7\)

In patients, particularly children, residing in areas endemic for ascariasis, airway obstruction during anaesthesia or in mechanically ventilated ICU patients with uncuffed ETTs or loosely fitted cuffs should lead to a high index of suspicion for obstruction by a migrating roundworm blocking the airway. Post-operative plain radiographs of abdomen or ultrasound may help in diagnosing intestinal ascariasis. This would mandate vigilant monitoring for potential post-operative recurrence of airway obstruction and prompt anti-helminthic treatment as would in the case of a high pre-operative eosinophil count.

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Oro-facial dysmorphism with visible glossoepiglottic fold in a heteropagus: First description

Sir,
I would like to congratulate Gosavi et al. on successful anaesthetic management of a difficult and rare case. [1] We provided perioperative care to a patient with nearly the same rare congenital anomaly. Though this patient did not pose any added anaesthetic challenge, we observed some very interesting findings during airway assessment.

A 6-day-old term male baby weighing 3.6 kg was brought to our institute with the complaints of a foetus like mass protruding from his tongue and difficulty in feeding. Examination revealed that an acephalic and acardiac twin (parasitic twin) was attached to the autosite [Figure 1 Panel-I]. The autosite had left sided broadened ala, atresia of left anterior nares, misaligned alveolar ridges and thinned out lips. Oral aperture was broadened along with cleft lip. A projecting ridge like structure from left upper alveolus along with malformed palate was also noted. Tongue was thin, broadened and leaf like. It was under tension because of the weight and position of the parasitic twin. Right palatoglossal fold was not well delineated, whereas left palatoglossal fold was well-formed with a small, conical, fleshy mass (probably uvula) attached to its medial end. The epiglottis along with the glossoepiglottic fold was visible [Figure 1 Panel-II]. No other comorbidity was evident. Paediatric fibreoptic intubation device was not available at our institute at that time. As the oral isthmus was large, we decided to perform an indirect laryngoscopy. It revealed easy visualization of glottic opening. Subsequently excision of the parasitic twin was carried out under general anaesthesia with endotracheal intubation without any adverse event. Endotracheal intubation was easy as suggested by the view obtained during indirect laryngoscopy.

Heteropagus twinning is rare congenital anomaly and estimated incidence is approximately 1/1 million live births.[2] This is an interesting case, as until date to best of our knowledge no description of a heteropagus twin joined at the tongue of the autosite has been reported. Visibility of glossoepiglottic fold during preoperative airway assessment in this case is another unique description. Although elongated and/or omega shaped epiglottis is commonly described in patients with visible epiglottis, in this case it was shortened, truncated and omega shaped.[3]

![Figure 1: Panel-I parasitic twin attached with the tongue of the autosite. (A) Autosite, (B) Parasitic twin. Panel-II oral cavity of the autosite. (A) Lip, (B) Tongue, (C) Ridge like structure from left upper alveolus, (D) Left palatoglossal fold, (E) Small, conical, fleshy mass (probably uvula), (F) Epiglottis along with glossoepiglottic fold](image-url)