Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Anesthesia for extraction of a fractured COVID-19 nasopharyngeal swab

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Iatrogenic complications are physician or surgeon induced inadvertently as a direct result of treatment. Simple diagnostic procedures done on out-patient basis can also lead to such complications, yet the exact incidence of many of such complications remain largely unknown. We report here a rare instance of anesthetic management of a pediatric case who presented to us with retained COVID-19 nasopharyngeal (NP) swab.

A 12-year old female child with no previous co-morbidities presented to us with an unusual foreign body retained within her left nasal cavity. The child, despite being co-operative, had accidently sustained a fracture of a COVID-19 NP swab at its breakpoint while undergoing a 'test' after a duration of quarantine. The child was scheduled for foreign body removal under anesthesia as attempts to remove the retained swab using speculum examination in the emergency room failed. In the operating room we adhered to all the level-3 personal protection strategies as per prevailing recommendations in the COVID-19 era[1]. We anesthetised the child's nasal cavity using 4mL of 1% Lignocaine with 1:2,00,000 Adrenaline and sedated her with standard doses of intravenous Dexmedetomidine infusion adjusted to body weight. Further, the retained swab was visualised between the inferior turbinate and floor of the nasal cavity using nasal endoscopy (Fig. 1a). The retained portion of the NP swab measuring approximately 10 cm (Fig. 1b) was removed using a Tilley's forceps under real-time endoscopic guidance and further perioperative course was uneventful.

A COVID-19 NP swab retained as foreign body is a rarity considering the millions of such tests conducted globally till date[2]. To our knowledge ours is the first report in pediatric-anesthesia literature on extraction of a retained NP swab under monitored anesthesia care. We avoided intranasal spray of local anesthetic (LA) to reduce further aerosolisation. Cotton pledgets soaked in LA were avoided as those can further retract the retained swab higher up to the nasopharynx.

Azar and colleagues[3] reported a case of retained aluminium NP swab that was initially undetectable and further revealed on skeletal roentgenography. De Luca and colleagues[4] extracted an accidently swallowed wooden NP swab, after confirming its presence in the stomach with computed tomography, under gastric endoscopy. Mughal and colleagues[5] caution against the use of NP swabs with breakpoint mechanism based on their experience of broken swab sustained during 'testing'. Recent reports of iatrogenic cerebrospinal fluid leak following NP swab collection further highlight the morbidity potential of this simple diagnostic modality[6]. Further, retained nasal foreign bodies can lead to complications like nasal septal perforation, acute sinusitis, acute otitis media, peri-orbital cellulitis and/or meningitis[7].

The plastic NP swabs for COVID-19 sample collection have a breakpoint mechanism (Fig. 1c) to assist its easy transfer to the viral transport medium. This breakpoint can be a vulnerable area for accidental breakage especially in children, uncooperative adults and sedated/paralysed intensive care unit (ICU) patients where undue force can likely be applied for NP swab collection on an unresponsive patient. The anatomically narrow nasal aperture in children along with a frequently encountered nasal turbinate hypertrophy that lead to reduced compliance and increased airflow resistance in this group can possibly preposition children at a higher risk for a broken and retained nasal foreign body[8]. Anesthesiologist's are frequently involved in the intensive care of COVID-19 patients. Our report highlights the importance of a meticulous conduct of NP swab test, especially among children and sedated patients in the ICU.

Author contributions

VS contributed to the patient management, conceptualisation of idea, review of literature, manuscript preparation and approval of submitted version of the manuscript.

Declaration of competing interest

No conflict of interests to declare.

Appropriate patient consent has been obtained for publication of data.

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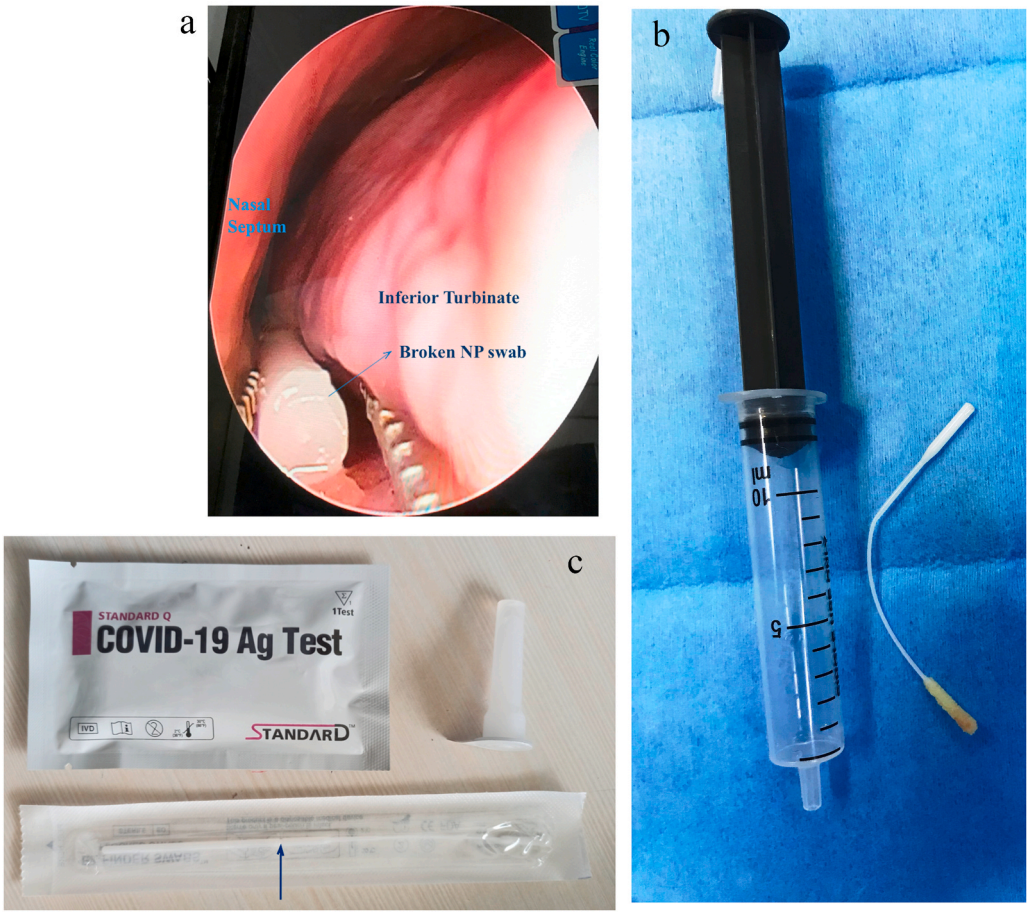

Fig. 1. a: Retained COVID-19 nasopharyngeal (NP) swab visualised between the floor of nasal cavity and inferior turbinate on nasal endoscopy.
Fig. 1b: Broken NP swab extracted from the nasal cavity.
Fig. 1c: Intact COVID-19 Nasopharyngeal swab with arrow demonstrating the breakpoint.

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