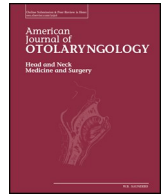




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Is oro/nasopharyngeal swab for SARS-CoV-2 detection a safe procedure? Complications observed among a case series of 4876 consecutive swabs



ARTICLE INFO

Keywords:

Nasopharyngeal swab
SARS-CoV-2
Complications
Epistaxis
Septal abscess

To the Editor,

The coronavirus disease 2019 (COVID-19) caused by the Severe-Acute-Respiratory-Syndrome Coronavirus 2 (SARS-CoV-2) has widely spread throughout the world since December 2019 [1]. One of the main symptoms of COVID-19 is alteration of smell or taste, suggesting that high viral load can be found in the nose [2]. CDC guidelines have recommended that diagnostic swabs should be performed in specific areas of the respiratory tract such as the nasopharynx, oropharynx, nasal turbinate, and anterior nares [3]. Nasal and nasopharyngeal swabbing requires the introduction of a foreign body into a delicate area that can result in harm to the patient. In this paper we present the complications encountered in a series of health workers who underwent oro/nasopharyngeal swab for detection of SARS-CoV-2.

A retrospective review was carried out in June 2020 on 4876 consecutive swabs performed at Treviso Hospital during May 2020 for the detection of SARS-CoV-2. All patients underwent sampling with a sterile collection Citoswab® (Citotest Labware Manufacturing Co., LTD) All reports, possible complications and clinical information were noted from registries of the infectious disease units and medical records. Here, we report complications requiring ENT evaluation.

2 males and 6 females (0.16%), aging from 35 to 79 years (mean age 53.8 yr) required ENT evaluation for complications (Table 1). Three patients experienced moderate anterior epistaxis requiring nasal packing. A further three patients suffered broken and impacted swabs in the nasal cavity, necessitating removal by an otolaryngologist in two cases. One patient, affected by diabetes mellitus and neutropenia, developed septal abscess (case 2) and another, who later was observed to have septal deviation, had severe anterior and posterior bleeding from an arterial point of the olfactory area, possibly arising from the anterior ethmoidal artery (case 3) requiring surgical cauterization. All complications were successfully treated with no reported adverse outcomes or further morbidity.

Epistaxis remained the commonest risk from swabbing. Nasal mucosa is known to be fragile, sensitive, vascular and prone to bleeding

from even the mildest trauma. This may be accentuated in patients with COVID-19 who may have inflamed upper respiratory tract, leading to more prominent bleeding during swabbing. There are certainly seasonal variations with epistaxis, being worse over winter and spring due to cold dry air and pollen release. This coincided with the height of the pandemic which could explain the severity of some of the complications seen.

Epistaxis is usually self-limiting [4], particularly when it arises from Kiesselbach's plexus. However arterial rupture can give catastrophic bleed as seen in one patient: we suspect the septal deviation may have misled the swabbing process to the upper part of nares where trauma to the anterior ethmoidal artery may have occurred. This could have been minimized by asking the patient about a known septal deviation or by avoidance of forceful swabbing in the presence of any resistance.

Besides epistaxis, one of the patients experienced septal abscess, which can result in long-term morbidity [5]. Septal hematomas are collections of blood between septal cartilage and overlying mucosa. In some cases, superimposed infections occur and abscess forms. Its sequelae include nasal obstruction, cosmetic disturbances and rarely infections that spread to deeper planes of face and brain, necessitating prompt drainage. We feel that the aforementioned patient may have developed the infection from a combination of swabbing process and her comorbidities.

In conclusion, oro/nasopharyngeal swabs are safe procedures to detect SARS-CoV-2 infection. Complications can occur depending on anatomical variations of patients' nasal structure, fragility of nasal mucosa and comorbidities. Adequate training in nose anatomy and sampling procedure can help reduce these risks. We would also propose whenever possible, alternative methods of sampling (e.g. salivary PCR).

Acknowledgements

The authors have no fundings to disclose.

Table 1
Characteristics of patients who experienced complications.

Case no.	Gender	Age (years)	Complication	Treatment
1	Male	79	Broken swab stuck in the nose	Removal under endoscopic view
2	Female	72	Nasal septum abscess	Incision and drainage under LA
3	Female	46	Rupture of a small artery of the olfactory area	Endoscopic cauterization and nasal packing under LA
4	Male	54	Anterior epistaxis	Nasal packing under LA
5	Female	49	Anterior epistaxis	Nasal packing under LA
6	Female	35	Anterior epistaxis	Nasal packing under LA
7	Female	58	Broken swab in the nasopharynx	Swallowed
8	Male	53	Broken swab stuck in the nose	Removal under endoscopic view

LA, local anesthesia.

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