Case Presentation

A 61-year-old male patient came to our hospital with complaints of unilateral transparent nasal discharge increasing while bending down. He was tested for Covid-19 PCR a month ago due to symptoms similar to flu. Shortly after the tests, his complaints about unilateral rhinorrhea have started.

The Beta-2 transferrin test applied in order to understand the rhinorrhea etiology came up positive for CSF. No other specialty has been identified in the patient's history. There was no history of nasal surgery or nasal trauma. The checks for chronic sinusitis and allergic rhinitis were negative.

Anterior rhinoscopy and fiber optical nasopharyngoscopy were also normal. In the paranasal computed tomography (CT) opacifications inside the left sphenoid sinus (Fig. 1) were detected. In the magnetic resonance imaging (MRI) cisternography, encephalocele herniated inside the sinus via bone defection on the inferolateral wall of sphenoid sinus.

Under the light of these indications, repairment of defects through endoscopic sinus surgery (ESS) was scheduled for our patient. Intracheal fluorescein was given to the patient before the operation. After opening the ethmoid cells, the sphenoid sinus ostium was located and fluorescein was seen inside it. No additional pathology causing rhinorrhea in the cribriform plate, fovea etmoidalis and lateral lamella was detected. Graft prepared from temporal fascia was laid...
In the case we presented, lack of previous rhinorrhea history and emergence of the complaints of the patient after nasopharyngeal swab sampling could be related with trauma. However, both the localization of the defect and presence of symptoms regarding chronic intracranial pressure increase in patient’s preoperative MRI cisternography, CSF rhinorrhea could be considered as not deriving directly from skull base trauma during nasopharyngeal swab sampling. CSF rhinorrhea could be caused by trauma of the pre-existing encephalocele deriving from sphenoid sinus lateral wall.

Two cases which have been presented in the literature as related with nasopharyngeal swab samples taken for Covid-19 diagnosis are found to be deriving from sphenoid sinus lateral wall, and indicating similarities with the case presented in our work [3, 4]. There was no CSF leakage, although there was defective area on the skull base due to increased intracranial pressure in paranasal CT taken previously, in the patient in the first study. The rhinorrhea was developed after nasopharyngeal swab sample was taken, encephalocele stretching from right ethmoid roof to sphenoid sinus right lateral wall was detected, and repaired with ESS. In the other study, a 59-year-old male patient was diagnosed with defect at the left sphenoid sinus lateral wall after CSF leakage detected from left nasal passage following nasopharyngeal swab sampling, and was repaired by vascularized nasoseptal flap under ESS. In the other patient presented in the literature, severe pain occurred following nasopharyngeal swab sampling, and rhinorrhea started immediately after sampling [5]. Paranasal CT and MRI indicated defect in cribriform plate combination location, and fovea ethmoidalis in the anterior of sphenoid sinus rostrum. They were repaired by graft prepared from middle concha mucosa resected with ESS.

Discussion

Since the emergence of the Covid-19 pandemic, a significant increase in the use of nasopharyngeal swab samples was observed. Complications such as; epistaxis after taking nasopharyngeal swab sample, swab remaining inside nasal cavity after breaking, and CSF rhinorrhea might be seen rarely during sampling [2]. The CSF rhinorrhea happened by trauma can cause neurological sequels and vital complications because they have the risk of meningitis. For that reason, they should be repaired urgently as soon as they are diagnosed.

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Conclusions

It is highly important that, in order to avoid complications during nasopharyngeal swab sampling for Covid-19 diagnosis, the medical people should be trained in details, and samples should be taken with correct application of method. Unilateral transparent nasal discharge after nasopharyngeal swab sampling should warn the clinician for possible CSF rhinorrhea.

Authors’ Contributions All authors meet the ICMJE authorship criteria. All authors have seen and approved the final version of the manuscript, and contributed significantly to the work.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval Informed consent of the patient was obtained prior to the writing of the manuscript.

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