

CSF leak after covid 19 nasopharyngeal swap: A case report

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Abstract

The use of the nasopharyngeal swab as a diagnostic procedure for CoVID-19 infection has become widespread. It is generally accepted as a safe procedure with few data on complications. We describe the case of a patient who developed a CSF fistula after nasal swabbing.

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INTRODUCTION:

One of the key issues in the management of the SARS-CoV2 pandemic is the early detection of the virus. Currently, the recommended and most commonly used test consists of performing a polymerase chain reaction

(PCR) on a sample of nasopharyngeal specimen obtained with a swab introduced into one or both nostrils. It is a very specific test capable of accurately detecting low levels of viral RNA in samples containing viral RNA. However, very little has been said about the possible complications associated with its performance.

Case report:

A 37-year-old woman with no medical records of interest, who presented with a 2-month history of spontaneous clear liquid unilateral nasal discharge, which increased when the head was lowered and was not associated to other symptoms (headache, dizziness...), that begun after nasopharyngeal swab through the right nostril for SARS-CoV-2 screening.

Physical examination showed transparent fluid gushing out of the right nasal cavity when the head was lowered. Flexible nasal endoscopy was normal, not being able to identify the source of the liquid. A sample of the liquid was collected for β -trace protein study due to the suspicion of CSF fistula, obtaining a result of 13 mg / l (fistula reference value > 1.1 mg / l) which supports the clinical diagnosis.

A head and paranasal sinus computed tomography (CT) scan without contrast (Image 1) showed no intranasal pathology, but a dilatation of the sella turcica was observed. The radiological study was extended with an Magnetic Resonance Imaging (MRI) of the sella turcica (Image 2) showing an enlarged sella turcica, partially empty, with liquid content and rejection of the pituitary tissue.

Given the results of the complementary tests that confirms our clinical diagnosis and the finding in the MRI at the level of the sella turcica, the patient is referred to the Neurosurgery Department.

The patient was instructed on maneuvers to avoid (Valsalva, lowering the head, blowing the nose loudly...) and warning signs that could lead us to suspect an intracranial complication.

The patient was assessed by a neurosurgery specialist and at the time the nasal fluid leakage had subsided and she continued to be asymptomatic, so it was decided to follow up in 6 months.

DISCUSSION

In the literature reviewed, only four cases of patients with iatrogenic CSF fistula have been found associated with the performance of nasopharyngeal swab for COVID-19 diagnosis, in three of them there was an anatomical predisposition (encephalocele). The present case raises the question of whether the fistula was favored by the preexisting anomaly detected in the MRI at the level of the sella turcica.

It is clear that in the study of CSF fistulas, it is important to take an exhaustive clinical history trying to identify etiologies that explain it. Once CSF leakage is suspected, it is necessary to demonstrate CSF leakage and also to identify, if possible, the level of the leak. An attempt should be made to visualize the bony defect in the lamina cribrosa by means of nasal endoscopy. If fluid outflow is evidenced, the nature of that fluid must be demonstrated by using specific biochemical markers such as β 2-transferrin and β -trace protein, with high sensitivity and specificity. It is important to make an early diagnosis because of the complications derived if left untreated, including a higher risk of developing meningitis.

CONCLUSIONS:

Performing nasopharyngeal swab for specimen collection is a safe procedure, but not exempt of potential complications. CSF leak should be considered in patients with transparent rhinorrhea or postnasal drip with a salty or metallic taste after nasopharyngeal swab. It is important to have precise knowledge of the nasal anatomy, as well as taking in consideration previous pathology, prior surgical intervention or conditions that may increase the risk of complications in some patients, before performing this test.

The swab should be introduced through the nostril parallel to the floor of the nasal cavity and the palate (not upwards), and directed to the nasopharynx, avoiding neck hyperextension to prevent reaching the skull base.

It is important to properly train clinicians responsible for performing this procedure, and for them to be aware of the possible complications that, although rare, are very important because of its potential complications

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Image 1 :CT scan of head and paranasal sinus. Enlargement of the Sella turcica.

Image 2 : MRI Sella turcica enlarged, partially empty, with liquid content and rejection of pituitary tissue.

Image 1 CT scan of head and paranasal sinus. Enlargement of the Sella turcica

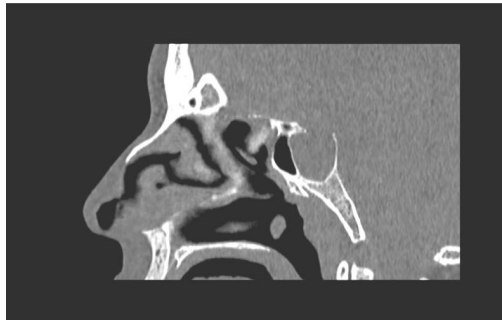


Image 2 MRI Sella turcica enlarged, partially empty, with liquid content and rejection of pituitary tissue.

