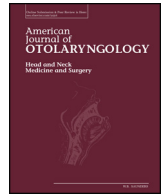




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Nasopharyngeal swab collection in the suspicion of Covid-19

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ABSTRACT

RT-PCR detection of SARS-CoV-2 mRNA on nasopharyngeal swab is the standard for diagnosing active Covid-19 disease in asymptomatic subjects and in symptomatic patients without the typical radiological findings.

Nasopharyngeal swabbing appears a trivial procedure, still an inappropriate nasopharyngeal sampling, performed by untrained operators, can be a relevant cause of false negative findings with a clear negative impact on the effort to control the epidemic and, when PPE is not properly used, this can expose healthcare workers and patients to risks of contagion.

1. Voice-over transcript

Nasopharyngeal swab collection in the suspicion of Covid.

CDC recommends collecting Nasopharyngeal swabs as a standard for the diagnosis of active SARS-CoV-2 infection.

Inappropriate procedures can lead on one hand to “False-negative” results, which represent a significant and avoidable risk of disease spread, as well as to an increased risk of transmission to the operators on the other hand[2].

Therefore, it is necessary to have all the equipment, including PPE, ready for the collection before starting the procedure.

Necessary Devices:

- Flocked swab and tube with proper medium
- Protective face shield
- Gloves
- Liquid-tight, protective coverall for biological agents
- FFP2 (N95) Mask
- Protective overboots
- Transport specimen container for biohazard substances
- Biohazard hospital waste safety basket
- Hand disinfectant gel

Before wearing the personal protective devices proper hands should be sanitized.

Afterwards, wear all the devices carefully following the proper

sequence.

First of all a pair of gloves. When wearing gloves it is important to stretch them to cover part of the forearm, they should stay under the sleeves in order to minimize any skin exposure.

Then wear the coveralls.

After the coveralls, proceed with the disposable shoe covers.

It is suggested to continue with the FFP2 (N95) mask.

Male health workers should be shaved in order to obtain an adequate mask's adherence to the face.

Moreover, it is recommended to verify the seal with forced inspiration and expiration to guarantee a complete division between the inner and outer micro environment.

Wear the protective face shield.

Lastly, wear a second pair of gloves not necessarily sterile which should cover part of the sleeve [1].

Remove the test tube from its packaging whilst possibly trying to maintain sterility and write the patient's essential personal data on it or, preferably, apply a pre-printed label with a readable barcode. The patient should be seated in a comfortable position with the head resting against a wall and it is important that they are also equipped with a non-valved mask. Explore exclusively the patient's nose and never the mouth before performing the swab. Check for septal deviations or other causes of nasal obstruction and proceed by inserting the swab into the most patent nasal fossa, parallel to the floor of the nasal cavity, without forcing or pointing the swab upwards.

The depth of insertion of the swab along the nostril should be

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approximately equal to the distance between the nostril and the ear which brings it in contact with the mucosa of the posterior wall. The swab will be held in place while gently rotating for at least 10 s.

Request the patient to cover the nose.

Place the swab in the appropriate test tube and cut or break the swab handle to close with the cap.

Place the test tube into the container for the transport of biohazard material. Replace the external gloves by wearing a new pair and cleanse them carefully to avoid any contamination [3].

Then proceed with the undressing following the correct sequence with extreme care: remove the visor, open the suit and start taking it off. Before proceeding further, remove the most superficial gloves and throw them in the special waste.

Remove the suit and the socks, avoiding any contact with external surfaces, therefore proceeding from the inside out.

Put the suit and the shoes in the special waste container. Cleanse the first pair of gloves worn and proceed by removing the mask. These will also go into the special waste basket. Finally, remove the gloves, and

thoroughly cleanse your hands with soap and water, or alcoholic solution, in the same way as shown at the beginning of this procedure [1].

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amjoto.2020.102551>.

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