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Letter to the editor

Diagnostic tests for SARS-CoV-2: Implications in head and neck oncology

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Dear Editor,

Owing to the perplexing nature of SARS-CoV-2 and its asymptomatic spread[1], diagnostic dilemmas exist amongst healthcare practitioners. In the present scenario, to carry out surgical procedures, patients’ diagnostic test reports for SARS-CoV-2 might be sought, particularly in Head and Neck Cancer (HNC) patients, who are more prone to develop COVID-19, as inferred from a cohort study in China.[2] In cancer patients, suspension of oncology treatment can have serious repercussions and should be prioritized.

To perform surgical procedures, many institutions have advocated SARS-CoV-2 screening as the utmost priority and have mandated it.[3] However, it is arduous to screen for and select COVID-19 negative patients for surgery as COVID-19 positive patients may even circumvent two-weeks with negative testing. Hence, inappropriate pre-surgical screening for COVID-19 can be an impediment to safe HNC surgery.[4] Therefore, it is imperative that dentists, oral surgeons, and oncologists have cognizance about the diagnosis and various modalities available for the same, their use, reliability and interpretation, in order to safeguard their patients, staff and themselves.

Synthesis from the present literature divulges that there is an array of diagnostic tests available or in the pipeline, for this pernicious disease, (Table-1)[5-8] which either test for the virus itself or are serological tests detecting antibodies in blood. While the viral tests making use of RT-PCR or qRT-PCR and ELISA tests detecting antibodies usually require laboratories or specific conditions[9], rapid antibody tests can be done albeit any particular conditions. Although qRT-
PCR remains the gold standard, it is not without fallibility.\textsuperscript{[5]} Its sensitivity varies depending on the kits and PCR instrument deployed\textsuperscript{[9]} and mostly takes long to be processed. Rapid RT-PCR tests that have been launched are processed faster but require special armamentarium and only a few can be done at a time depending upon machine capabilities and supply of reagents. RT-PCR test in principle has 100% sensitivity. Nevertheless, due to biology of the disease, for instance, inappropriate timing of sample collection in relation to disease onset or the virus not being present in the particular location being tested at the particular time results in some false negatives.\textsuperscript{[3,9]} Other RT-PCR false negatives may be attributable to further problems, such as laboratories being under the cosh, substandard sample collection and preparation.\textsuperscript{[9]} Healthcare practitioners must be aware of these problems as a single test report cannot be taken at face value.

Also, while nasopharyngeal swabs are predominant means of obtaining the sample, a single nasopharyngeal swab is only 63% sensitive, compared to bronchoalveolar lavage specimens being 93%, which however are difficult to obtain.\textsuperscript{[5]} Hence, other samples are being researched. Saliva and GCF which can provide a quick and non-invasive sample have become increasingly popular for SARS-CoV-2 diagnosis, requiring further exploration.\textsuperscript{[10]}

Rapid serology tests, which do not require centralized facilities, detect antibodies wherein IgM antibodies are discerned in early disease whereas IgG are formed later & persist longer. Although rapid tests infer expedited diagnosis of COVID-19, false negatives and cross-reactivity are a bigger problem which cannot be overlooked.\textsuperscript{[6-8]}
Diagnostic tests should be correlated with clinical findings. While taking the history and during the oral examination, attention should be paid to features, such as dysgeusia/ageusia, dry mouth and exanthematous lesions like ulcers or blisters which might be initial symptoms of COVID-19, presenting even before fever, dry cough, and other quintessential clinical symptoms. Self-acknowledged loss of taste and smell might be owed to the cellular entry receptors of SARS-CoV-2 (ACE2) and is a much stronger predictor of a positive COVID-19 diagnosis than self-disclosed fever.\textsuperscript{[10]}

Testing via saliva or GCF samples may be valuable and dentists and oral surgeons might play a pivotal role in early diagnosis. Hence, the practitioner must be apprised with the expression of the disease and test modalities available. The results should be interpreted prudently, and the clinicians must use their acumen while corroborating the results with the patient’s history and clinical findings for their HNC patients.

Table Heading:
Table-1: Diagnostic tests for SARS-CoV-2 and Dental Implications
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