

Severe acute respiratory syndrome Coronavirus disease 19 Omicron pandemic era from an oral and maxillofacial perspective – A review

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perspective – A review

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ABSTRACT

Due to the Coronavirus disease 2019, seen in many patients, there were also seen some oral and maxillofacial manifestations like ulcers, pigmentation, vesicles, fissured tongue and many more along with the cutaneous manifestations. Due to the COVID-19 in the patients, there were oral and maxillofacial manifestations like white areas, red areas, white and red mixed areas, haemorrhage, necrosis, swelling, ulcer, bulla, vesicle, pustule, pigmentation, depapillated tongue, inflammation and bleeding in the ulcers and erosion.

Keywords: oral, dental, pathology, maxillofacial, Covid 19

Introduction:

Due to the Coronavirus disease 2019, seen in many patients, there were also seen some oral and maxillofacial manifestations like ulcers, pigmentation, vesicles, fissured tongue and many more along with the cutaneous manifestations [1]. Due to the COVID-19 in the patients, there were oral and maxillofacial manifestations like white areas, red areas, white and red mixed areas, haemorrhage, necrosis, swelling, ulcer, bulla, vesicle, pustule, pigmentation, depapillated tongue, inflammation and bleeding in the ulcers and erosion. These disorders are in turn made to verify and detect the patients whether they are infected by Covid-19 [2]. Mostly all the above symptoms were seen in tongue, palate and labial mucosa [3,4]. And mostly the confirmed and suspected patients who were infected with covid cases were having many manifestations like cutaneous, oral and maxillofacial manifestations [5,6].

Here are the types of ulcers which are caused by covid [7].

i) Aphthous ulcer: The ulcers which are formed due to vitamin deficiency and iron in the body and are white in colour are called Aphthous ulcers [8].

ii) Herpetiform: The ulcers that are formed on tongue and are found in bunches are called Herpetiform ulcers [9].

iii) White lesions: When the thickness and volume increases of keratin layer due to friction or any immunological disorders on the tongue, it forms ulcers which are called white lesions as they are white in colour [10].

iv) Red lesions: Red lesions are on both the tongue and the palate. The red lesions are also called Erythroplasia as they are in red colour and has a velvety texture. These are not found in clusters and are also found on the mouth floor [11].

v) Erythema-multiforme like lesions: Due to the excess use of antigens, the mucosa and the skin may react and may cause lesions called Erythema multiforme (EM) [12-15].

vi) ⁴ Angina bullosa like lesions: Angina bullosa haemorrhagica (ABH) is a lesion which increase in size and burst and release the blood in the mucosa and epithelial layer and causes pain in the oral cavity [16].

vii) Melkersson-rosenthal syndrome: The rare disorder that shows its effects on neurons of the upper lip and also develops a fissured tongue with the folds in it and also it causes face swelling and facial paralysis is Melkersson–Rosenthal syndrome [17].

viii) Atypical sweet syndrome: The syndrome in which the lesions occur in both oral cavity and skin that causes more inflammation and also which is associated with pyrexia is Atypical sweet syndrome [18,19].

ix) Kawasaki like disease: In Kawasaki like disease, main pathagomonic feature includes strawberry tongue with bumpy look and fungiform papillae followed by dryness, peeling, fissuring, haemorrhagic areas, vertical cracking and diffuse changes [20].

x) Necrotizing periodontal disease: Common features are necrosis of gingiva, ulcerations seen in the interdental region, followed by osteonecrosis [21].

xi) Vesicles: A vesicle is a small bullae which may or may not be equal to 1 cm in diameter characterised by elevation and fluid-filled lesion which in turn is covered by epithelium. This fluid accumulation can occur either outside the epithelium called intraepithelial vesicle or below the epithelium called subepithelial vesicle [22].

xii) Pustules: Common sites of involvement are vestibule, gingiva and lateral borders in relation to tongue in case of multiple pustule occurrence [23].

xiii) Mucositis: Most common etiology for mucositis are anthracyclines, alkalytaing agents, mTOR inhibitors, and antimetabolites which might lead to erythmatous areas in conjunction with edema and ulcerations [24-26].

xiv) Petichiae: Hemorrhages which might occur pin-point apperances in sub-cutaneous or sub-mucosal are called petechiae [27].

xv) Post inflammatory pigmentation: Auto-immune diseases such as pemphigoid and graft versus host condition observed. Sometimes also periodontal condition might lead to oral post-inflammatory pigmentation [28-30].



Figure: 1 [31].

What is Covid-19:

Globally, humanity is at loss due to COVID 19 [32]. Coronaviridae family plays an important role. Crown like structure present on the external surface of virus. Coronaviruses size varies from 65 onwards. It is a monostranded ribonucleic acid structure and its size ranges from 26 to 32 kbs in length. Some mutants were seen in coronavirus which were rapidly transmitting like omicron. Fatal cases occur in case of pulmonary failure which are usually seen in SARS-CoV, MERS-CoV, ALI, ARDS, H1N1 2009 and H5N1 influenza A [33].

Descending order of site of involvement includes tongue succeeding 26% of upper and lower lip region and finally involving palate. Above mentioned sites present lesions of Kawasaki-like disease, Erythema-multiforme like lesions, drug eruption, oral mucositis, atypical Sweet syndrome, angular cheilitis, Melkersson-Rosenthal syndrome, angina bullosa-like lesions, necrotizing periodontal disease, aphthous stomatitis, candidiasis, vasculitis and herpetiform lesions. Symptomatic cases accounted for 68% in relation to oral and maxillofacial lesions. The lesions were more noted in males of 51% followed by 49% of females. Oral manifestations presented in geriatric population. Risk factors included poor oral hygiene, medically compromised conditions, emotional stress, immune compromised conditions, vasculitis, and hyper-inflammatory response [34]. Common disorder included taste disorder [35]. And other common symptoms which are seen in coronavirus patients were alike other viral infections like

myalgia, arthralgia, sore throat, cough, fever, headache, excess sputum production and dyspnoea. Oral and maxillofacial manifestations might lead to functional disorders resulting in gastrointestinal symptoms such as nausea, vomiting, tremors, anorexia and diarrhoea [36], followed by dermatological manifestations and neurological dysfunctions [37]. Pre-covid symptoms included complete loss of taste, along with reduced sense of taste and alterations in the taste perception. Altered sense of taste is mentioned as Dysgeusia, diminished taste sensation is mentioned as Hypogeusia and complete absence of taste is defined as Ageusia [38-42].

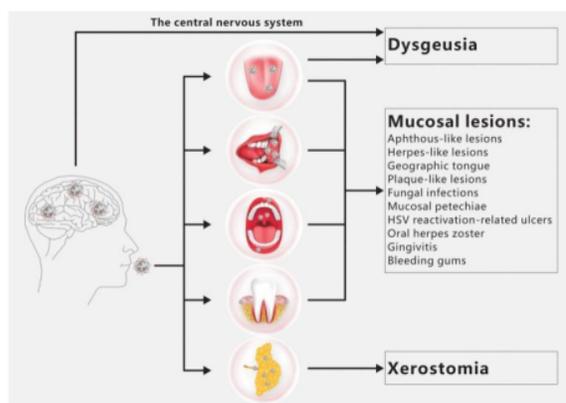


Figure: 2 [43].

Conclusion:

Due to the lack of immunity, lack of personal hygienic measures and also the less confidence in recovery, the covid 19 in effected patients was proved to be fatal [44]. As there was covid 19 in many patients, the symptoms seen were bleeding in the ulcers, angular cheilitis and pressure ulcers and this ultimately raised the disease progression which also caused death to many patients [45]. The most commonly observed intra-oral conditions are dry mouth, appearance of vesiculobullous lesions and alterations in taste perceptions which are being mentioned in this detailed review. Oral manifestations were seen in mostly all the patients and

thus, dentists were needed to play their roles in the early diagnosis of the infections caused by the coronavirus [46]. Along with the coronavirus, its new mutants were also found in many patients like Omicron which were changing its infrastructure and were given a shape to the highly contagious virus. So for these kinds of mutants, we need to conduct studies more and more and find the virus. Individuals who are covid positive and the older patients should be first prioritized by the examiners or dental professionals so that there will be timely treatment done so that it increases the quality of the patient's life [47]. Patients with diabetes and multiple system disorders with poor oral health ⁶ are at high risk for getting infected due to covid [48]. Although the recovery was seen in the patients with the poor oral conditions, but it took some time for them to recover. The above said oral and maxillofacial manifestations like ulcers and lesions were caused due to covid and to recover, firstly proper hygienic conditions like oral hygiene have to be followed to improve the health of the patient effected by covid.

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