



A Rare Case of Post COVID-19 Osteonecrosis of Mandible: A Clinical Rarity

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Abstract

We report an unusual case of post-COVID osteonecrosis of mandible in a 35-year-old male patient without any known systemic disease 15 month after recovery from severe COVID-19 symptoms.

Introduction

COVID-19 pandemic affected the lives of almost everyone. people affected by COVID-19 infection not only suffered from its symptoms but many of them also developed post-COVID complications which are still being reported. These complications affected almost every system of body. Number of patients reporting with osteonecrosis of maxilla and mandible increased surprisingly in post-COVID patients. Khan et al. [1] recently published a largest unicentric study of 13 cases of post-COVID osteonecrosis of jaw, purpose of this study was to ascertain the correlation between COVID-19 infection and jaw osteonecrosis, along with the identification of risk factors that could be associated with the development of the condition. They concluded that a triad of post-COVID coagulopathy, steroid administration, and a provocative dental treatment may contribute to jaw osteonecrosis which may be seen in patients without pre-existing systemic illness and may present as late as 21 months after COVID-19.

Case Presentation

A 38-year-old diabetic male reported to OPD of our Department of Oral and Maxillofacial Surgery with the complain of pain in left lower teeth region for 6 months. Upon taking the history the pain first appeared 6 months back, pain was accompanied by mobility in left lower teeth. Patient consulted local dentist where extraction of 34 was carried out and medication were prescribed. Patient noticed swelling in left mandibular region which increased with time. On extra oral examination diffused swelling was present on left mandibular region extending from left commissure of lip to posterior border of ramus of mandible. Intra orally bone was exposed in region of 32, 33, 34, 35 was present extending from 31 to distal of 38. There was no pus discharge present. Mobility was present in relation to 31, 36, 37, 38 teeth. OPG was done which reveals pathological fracture of left condyle and destruction of left mandibular body with missing teeth 32, 33, 34, 35. Paresthesia was present on left lower lip. On enquiring patient had history of COVID symptoms one and half year back for which he was admitted to hospital for 15 days and treated with corticosteroids and

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Figure 1: Pre-op extra oral photograph.



Figure 2: Pre-op intra oral photo.



Figure 5: Intra-op Debridement of involved bone.



Figure 3: Showing 3D CT reconstruction.

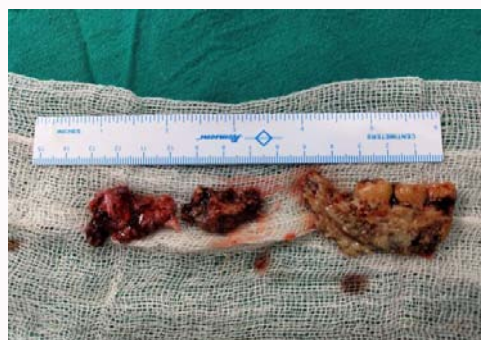


Figure 6: Necrosed bone.



Figure 4: Showing orthopantomogram of involved mandibular bone.

broad-spectrum antibiotics. There was no history of radiation. For further evaluation CECT face was performed which was suggestive for destructive lesion in body and ramus of left mandible extending to right para symphysis with bony sequestration. A provisional diagnosis of chronic osteomyelitis of mandible was made. Incisional biopsy was done which was suggestive of chronic osteomyelitis.

Surgical debridement and curettage were performed and sample was sent for histopathological examination which later on confirmed initial diagnosis. A course of antibiotic Amoxicillin clavulanic acid -1.2 gm was started thrice a day for a week to prevent any postoperative infection. patient was kept on follow up for 6 months to check for any recurrence. There was no recurrence (Figures 1-6).

Discussion

Cases of aseptic and bacterial osteonecrosis involving hipbone, femur, and vertebrae were reported as early as within a few weeks of COVID-19 [2]. In the maxillofacial skeleton such cases were reported as early as 8 days after COVID-19 [3]. Recently, Maharawy et al. [4] published a series of 12 cases of jaw osteonecrosis in COVID survivors

and identified four main factors for this observation (1): The viral infection induced hyperinflammatory and hypercoagulable state, drugs used for treatment of the hyperinflammatory syndrome and cytokine storm (steroids and Tocilizumab), bacterial or fungal co-infections and diabetes. Also, all the cases in the series by Maharawy et al. [4] involved maxilla, the cause of which was attributed to high concentration of ACE-2 receptors in the oral and nasal mucosal epithelium which were directly downregulated by the virus. However, our patient had the lesion in mandible and we are in agreement with the hypothesis put forward by Khan et al. [1] that COVID-19 associated coagulopathy resulted in increased susceptibility of mandibular bone to necrosis after tooth extraction following the pathogenetic process similar to that seen in osteoradionecrosis. Our patient was hospitalized for COVID 15 months back and was diagnosed as diabetic during the treatment of COVID. In affirmation with the observation by Khan et al. [1], we are of the opinion that diabetes may be complication of COVID-19 just like osteonecrosis of jaw rather than being causative factor of osteonecrosis. Slavkova and Nedevska [5] also reported a similar case in a patient without any known comorbidities.

However, we agree with Maharawy et al. [4] that secondary infection may play a role in progression of osteonecrosis but we believe that inoculation of the microorganism came from dental extraction in our patient.

Conclusion

Based on the presentation of our case, we are inclined to concur with the hypothesis put forward by Khan et al. [1] that glucocorticoid administration, diabetes, COVID-19 induced coagulopathy and microbial coinfection may not be the only risk factors but a provocative event like dental extraction may additionally contribute

to increased risk of osteonecrosis of jaw in COVID survivors.

References

1. Khan MA, Rahman T, Rahman SA, Hashmi GS, Ansari MK, Danish M, et al. Is Post-COVID Osteonecrosis of Jaw (PCONJ) Masquerading as osteomyelitis? A largest unicentric report of 13 cases. *Adv Oral Maxillofac Surg.* 2023;11:100435.
2. Sulewski A, Sieroń D, Szyluk K, Dąbrowski M, Kubaszewski Ł, Lukoszek D, et al. Avascular necrosis bone complication after active COVID-19 infection: Preliminary results. *Medicina (Kaunas).* 2021;57(12):1311.
3. Arewar A, Beseekar S, Dhankikar S, Manwatkar K. Post COVID-19 mandibular osteomyelitis: An alarming oral health concern. *Eur J Dent Oral Health.* 2021;2(4):1-3.
4. Al-Mahalawy H, El-Mahallawy Y, Dessoky NY, Ibrahim S, Amer H, Ayad HM, et al. Post-COVID-19 Related Osteonecrosis of the Jaw (PC-RONJ): An alarming morbidity in COVID-19 surviving patients. *BMC Infect Dis.* 2022;22(1):544.
5. Slavkova N, Nedevska M. Aseptic osteonecrosis of the maxilla after severe COVID-19 infection and its treatment. *Radiol Case Rep.* 2022;17(9):3228-32.