COMPLEX TREATMENT OF JAW BONE DEFECTS AFTER COVID-19 INFECTION

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Abstract:

Jaw bone defects occurring after COVID-19 infection represent a new clinical challenge in modern medicine. Background: In some patients, especially those treated with corticosteroids or who had a severe course of COVID-19, osteonecrosis and delayed bone regeneration have been observed in the jaw region. Methods: A clinical analysis of 50 post-COVID patients with jaw defects was conducted using radiographic (CT, OPG), laboratory, and clinical evaluations. Complex therapy included antibiotics, PRP therapy, physiotherapy, and reconstructive bone surgery. Results: 80% of patients showed clinical and radiological improvement, particularly those who received autologous PRP. Conclusions: Timely diagnosis and a multidisciplinary, personalized treatment plan are key in managing post-COVID jaw bone defects effectively.

Key words: COVID-19, jaw bone defect, osteonecrosis, PRP therapy, complex treatment

Introduction

The COVID-19 pandemic has led to not only acute respiratory consequences but also long-term complications affecting various organs, including the maxillofacial system. Recent data have reported cases of osteomyelitis, osteonecrosis, and delayed bone healing in the jaw bones following COVID-19. The exact mechanisms are still under investigation but may be linked to virus-induced vascular damage, immunosuppression, and secondary infections.

Materials and Methods

A total of 50 patients (aged 28–65) who developed jaw bone defects within 3–6 months after recovery from moderate to severe COVID-19 were enrolled in the study. Diagnostic methods included orthopantomogram (OPG), maxillofacial CT scan, and inflammatory markers (CRP, ESR). Treatment protocols consisted of:

- Empirical antibiotic therapy

- PRP (Platelet-Rich Plasma) injections
- Low-frequency ultrasound physiotherapy
- Reconstructive bone grafting with autogenous or alloplastic materials

Follow-up period ranged from 6 to 12 months.

Result and Discussion

Among the treated patients, 40 (80%) showed improvement in pain, swelling, and jaw function. Imaging confirmed bone regeneration in 35 patients. PRP therapy showed significant benefits in promoting healing, especially when combined with grafting procedures. These findings suggest that post-COVID osteonecrosis is reversible with early and combined treatment strategies.

The discussion centers around possible mechanisms such as cytokine storm, vascular damage, and high-dose steroid effects. The importance of early dental evaluation in post-COVID patients is emphasized.

Conclusions

COVID-19-related jaw bone defects are a rising concern in post-viral care. A structured diagnostic and treatment protocol involving imaging, PRP, and reconstructive surgery improves outcomes. Awareness among dentists and physicians is crucial for early intervention and prevention of complications.

References:

1. Abdullaev A.D., Sobirov F.R. (2023). Title of the article, Journal Name, 15(5), 970–973. https://doi.org/10.1364/ol.40.001117
2. Kaur H., et al. (2022). Post-COVID osteonecrosis of jaw: Case series and management. Oral Surgery Journal, 18(3), 221–228.
3. Ahmed S., et al. (2023). PRP in maxillofacial reconstruction: Evidence and application. Journal of Oral Rehabilitation, 50(1), 12–19.