



A CASE REPORT OF DENTAL IMPLANT THERAPY IN HIV SEROPOSITIVE PATIENT

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ABSTRACT

Human immunodeficiency virus (HIV) causes an immune incompetence that weakens the body's defense against pathogens. It has been supposed that HIV-positive patients are more likely to develop both early and late postoperative complications, such as septicemia and poor wound healing. This has not been corroborated by more recent studies but seems to depend on the patient's level of CD4 cells and his or her general condition. A case report addressing the successful placement and osseointegration of dental implant therapy in an HIV-positive patient is presented.

Key words: Dental Implant, Human immunodeficiency virus

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INTRODUCTION

Dental implants are considered a favourable treatment option for the rehabilitation of patients who present partial or total edentulism, as survival and success rates are high. However, treatment longevity can be reduced in patients with a compromised medical status or systemic conditions. In addition, the effects of general health problems on implant failure rates are still poorly documented, especially in human immunodeficiency virus (HIV)- positive patients.¹⁻³

Human immunodeficiency virus (HIV) infection is a major public health problem. According to estimations of the United Nations, 34 million people throughout the world suffer from HIV/Acquired Immune Deficiency Syndrome (AIDS). The disease is characterized by progressive immune system failure that gives rise to the development of

opportunistic infections and neoplasms. The virus invades CD4+ T lymphocytes, macrophages and dendritic cells, and the CD4+ T cell counts gradually decrease as a result of direct cytopathic action or cytotoxic CD8+T lymphocyte-mediated attack.^{4, 5} Cellular immunity is affected once the lymphocyte count has dropped to below a critical point, and the patient becomes vulnerable to opportunistic infections. On the other hand, if HIV viral replication is not inhibited, the resulting immune activation increases the risk of cardiovascular events, tumors and kidney, liver and neurological disorders, among other problems.^{6- 9} Hence; we have presented a case report of dental implant therapy in HIV seropositive patient.

CASE REPORT

A 64-year-old female patient reported with chief complaint of missing mandibular first



molar. Complete oral examination was done and intra-oral findings were evaluated. Serum biochemical analysis was done. On assessing medical history, patients were found to be HIV positive and was on EPZICOM. Patient was also suffering from breast cancer for which, she had undergone chemotherapy and

mastectomy. CD4+ count was evaluated. All the dental implant procedures were carried out under strict septic conditions. Follow-up was done and crown was placed. On two years, complete osseo-integration of dental implant was observed.

DENTAL IMPLANT IN HIV PATIENT: A CASE REPORT



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

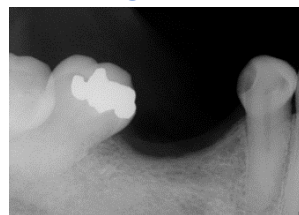


Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13

Figure 1,2,3: Extraoral examination

Figure 4,5,6: Intraoral examination

Figure 7: Pre-operative IOPA

Figure 8,9,10: Pre-operative occlusion evaluation

Figure 11,12,13: Post-operative occlusion evaluation

DISCUSSION

Infection can be a serious complication of operations that involve the placement of dental implants. Patients taking immunosuppressive drugs have an increased

risk of infection. In such patients, the risk of wound sepsis must be weighed carefully against the potential benefits of surgery. Patients who are infected with human immunodeficiency virus (HIV) suffer

progressive deterioration in immunity as indicated by a fall in the T-helper (CD4) cell count. Studies suggest that in such patients the risk of wound infection increases as the immune status deteriorates. Pronounced immunosuppression (CD4+ T cells <200/ μ L) has been associated with a higher risk of postoperative complications.⁸⁻¹⁰

In the present case report, we reported case of a 64-year-old female patient who reported with chief complaint of missing mandibular first molar. Complete oral examination was done and intra-oral findings were evaluated. Serum biochemical analysis was done. On assessing medical history, patients were found to be HIV positive and was on EPZICOM. Oliveira MA et al evaluated a group of HIV-positive people from a previous study who had received dental implants for 12 years after oral rehabilitation and functional loading. Nine patients with a total of 18 implants participated in their study. Viral load was undetectable in 8 patients, with 1 who had 48 copies/milliliter. The cluster of differentiation 4 T lymphocyte count ranged from 227 through 1,000 cells/cubic millimeter, mean (standard deviation [SD]) 564 (271.13) cells/mm³. Five of the 9 (55.5%) patients had visible plaque, and 5 (55.5%) had bleeding on probing with no implant mobility. Radiographs obtained at 6 months, 12 months, and 12 years of functional loading showed mean (SD) marginal bone losses of 0.32 (0.23) mm, 0.37 (0.23) mm, and 2.43 (1.48), respectively. These results suggested that dental implant treatment in HIV-positive patients achieved long-term survival, with a success rate comparable with that observed in healthy patients, indicating that implant rehabilitation is not a contraindication for HIV-positive patients.¹⁰ HIV infection continues to be a life-threatening disease. In 2009, an estimated 2.6 million newly infected cases were reported. Although the growth rate has plateaued in the last decade, numbers still run high. Prevention efforts, scientific research, and the

development of new medication have led to improve the quality and life expectancy of HIV-positive patients.^{11, 12}

In the present case report, CD4+ count was evaluated. All the dental implant procedures were carried out under strict septic conditions. Follow-up was done and crown was placed. On two years, complete osseointegration of dental implant was observed. Ata-Ali J et al determined whether human immunodeficiency virus (HIV) infection has an impact upon dental implant osseointegration. The combinations of search terms resulted in a list of 132 titles. Nine studies finally met the inclusion criteria and were selected for inclusion in the systematic review. A total of 173 dental implants were placed in 80 patients (135 implants in 56 HIV-positive subjects and 38 implants in 24 HIV-negative patients), and a single loss of dental implant osseointegration was recorded in an HIV-positive patient. Their results suggested that dental implant placement in HIV-positive patients does not increase the dental implant failure rate.¹³ In a study of 40 dental implants placed in 20 HIV-infected patients, no implant osseointegration failures were recorded after 6 months of follow-up. Likewise, in another study of 39 dental implants placed in 24 HIV-infected patients, no implant osseointegration failures were recorded after one year of follow-up. The above findings have been corroborated by several studies in HIV-infected individuals in which no dental implant osseointegration failures were observed.¹⁴⁻¹⁶

Conclusion

From the above case report, it appears that dental implants are suitable for the rehabilitation of HIV-positive patients with controlled risk factors.



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