IMPLANT THERAPY IN PATIENT WITH SEVERE PERIODONTAL DISEASE

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INTRODUCTION

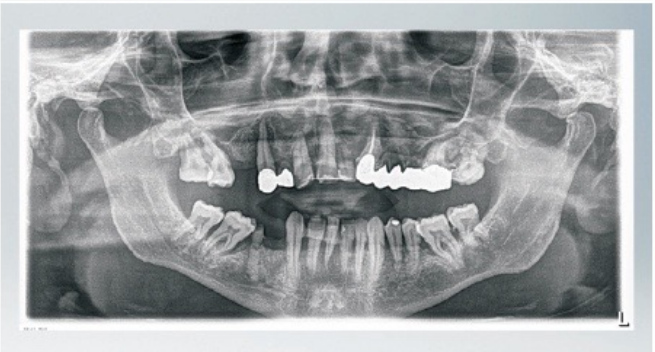
Periodontitis is defined as an inflammatory disease of the supporting tissues of the tooth, caused especially by gram- negative bacteria, resulting in progressive destruction of the bone-supporting tissues of the tooth.The undeniable role of bacterial infection in the pathogenesis of the periodontitis is known to be accompanied by the individual's immune and inflammatory response under the influence of external, such as dental plaque, and internal factors. However, the dental plaques represent the main risk factors related to periodontitis occurrence and development.(1-2)

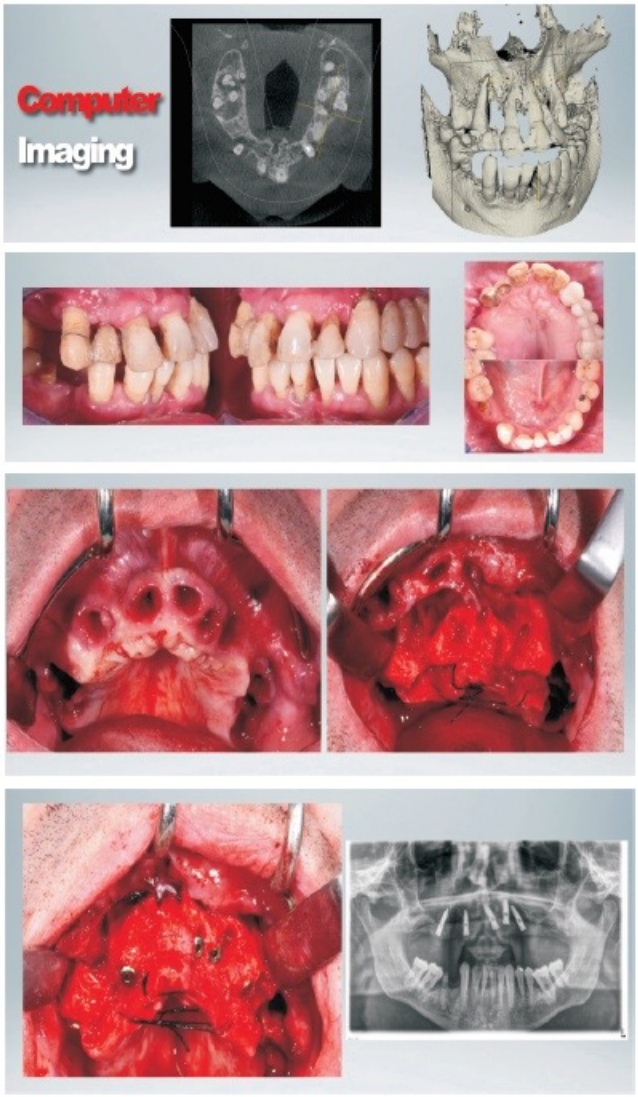
From the epidemiological point of view, there are an increasing proportion of adults retaining their teeth until late in life, and, nowadays, periodontal disease is a serious problem in older adults. Moreover, the risk of the concomitants oral problems, such as root caries, tooth mobility, and tooth loss, can be increased by the presence of periodontal disease, which has also been associated with a growing list of chronic systemic diseases and impaired cognition .Dental implant science has rapidly moved into the mainstream of dentistry in the last 10 years with a phenomenal growth based on rapidly expanding technology, increasing public interest, and the reporting of sound scientific data. Indeed, dental implants have been widely used to retain and support cross-arch fixed dentures. However, biological complications, including peri-implant diseases (i.e., peri-implant mucositis and peri-

implantitis), along with technical complications, have emerged as follow-up periods have been extended.(3-4-5) Peri-implantitis was first defined as "inflammatory reactions with loss of supporting bone in the tissues surrounding a functioning implant" . The outcomes of various treatment approaches for peri-implantitis are not always successful or predictable . Moreover, alveolar bone defects around the implant destroyed by peri-implantitis cannot be regenerated in a reliable and predictable way, although various efforts to do so have been made over the last few decades . Hence, prevention of peri-mucositis, the precursor of peri-implantitis, has been suggested as the best approach to treat peri-implantitis . If an infection of supporting tissues around the implant cannot be properly controlled, it will eventually result in loss of the implant . According to another opinion, the significance of peri-implantitis is over-exaggerated. It has been suggested that most implants can function properly over long-term periods since bone loss around the implant does not continue in mostcases.(6-7-8-9) In relation to population samples, ethnicity might affect the prevalence of peri-implantitis because the prevalence of periodontitis has been shown to be high in certain ethnic groups. Various risk factors for peri-implantitis have been evaluated in the literature . They are mainly categorized as implant- or patient-related factors and as systemic or local factors . Implant surface design, implant position and angulation, and prosthesis design in terms of performing plaque control have been suggested as implant-related/local factors while a history of periodontitis and smoking are the most frequently analyzed patient-related/ systemic factors associated with peri-implantitis . Like supportive periodontal therapy for the prevention of recurrent periodontal disease, regular maintenance therapy after implant placement has been emphasized as a way to prevent peri-implantitis periodontal therapy. (10-11)

Case report

A 57 year old man affected by severe periodontitis ,no smoker with no contra indication for dental implants Anatomic conditions and pathology of the jaws were evaluated by panoramic radiograph and cone beam CT which highlighted the serious impairment of all maxilary teeth with high mobility(Fig 1,2,3). So we decided to extract them all and insert 6 implants (Biosafin Winsix) that will support a fixed prosthesis placement. In the jaw ,however all teeth are kept after periodontal therapy and surgery was performed under local anesthesia after premedication.with diazepam (0.2mg/kg) given orally 30 minutes before surgery.After crestal incision we reflected a full thickness flap. We extracted all teeth. removed necrotic tissues and all inflammatory residues. Then, the bone cavity was extended gradually, according to the intended implant diameter. Immediate loading was not done , but a temporary removable prosthesis was designed.





All the implants had a satisfactory primary stability.**(Fig.4-5-6)** The flap was sutured with suture points in 4/0 silk. Postoperative medications included antibiotics (1000mg amoxicillin and clavulanic acid twice daily for 7 days, starting on the day of surgery); an analgesic (600 mg ibuprofen as required every 6 hours); and 0.2% chlorhexidine mouthwash twice daily for 2 weeks, starting on the day after surgery. After 6 months to the healing of hard and soft tissues, a temporary followed by definitive fixed prosthesis was done . The patient was subjected to periodic controls and maintenance therapy every 3 months. At 12 months of follow-up, all the implants were considered to be successful, and it does not show any sign of mucositis and peri-implantitis.**(Fig7-8)**

CONCLUSIONS

Implant therapy in the periodontally compromised patient has a good predictability, The antibiotic therapy and the deletion of all inflammatory sites during open surgery could represent a fundamental step for bone regeneration and the implant stability. It is important for the long-term success to subject the patient to periodic and meticulous checks. every 3 months.

BIBLBIOGRAPHY

1. Dahlin C, Linde A, Gottlow J, Nymans :Healing of bone defects by guided tissue regeneration.Plast Reconstr Surg 1988;81:672-676
2. Dahlin C, GottlowJ, linde A, Nyman S. Healing of maxillary and mndibular bone defects

using a membrane technique .An experimental study in monkeys. Stand J Plast Reconstr Surg 1990, 24:13-19
3. Melcher AH, Dreyer CY. Protection of the blood clot in healing circumscribed bone defects J Bone Joint Surg 1962; 44B:424-430.
4. Nevins M, Mellonig JT The advantages of localized ridge augmentation prior to implant placement: a staged event Int JPeriodont Rest Dent 1994; 14:97-111
5. Parma Benfenati S, Tinti C, Albreksson T, Johansson C. Histologic evaluation of guided vertical ridge augmentation arounf implants in humans Int J Periododntics Restorative Dent 1999;19:425-437
6. Simion M, Trisi P, Piattelli A. Vertical ridge augmentation using a membrane technique associated with osseointegrated implants. Int J Periodontics Restorative Dent 1994;14:496-511
7. Tinti C, Parma Benfenati S, Vertical Ridge augmentation: surgical protocol and retrospective evaluation of 48 consecutively inserted implants. Int J Periodontics Restorative Dent 1998;18:435-443
8. Vanden Bogaerde L. A proposal for the classification of bony defects adjacent to dental implants, Int J Periodontics Restorative Dent 2004;24:26:264-271
9. Nocini P.F, De Santis D. Nuove prospettive in Implanto-protesi e in chirurgia rigenerativa Quintessenza Edizioni
10. Prevalence and risk indicators of peri-implantitis in Korean patients with a history of periodontal disease: a cross-sectional study Mi-Seon Goh , Eun-Jin Hong , Moontaek Chang J Periodontal Implant Sci. 2017 Aug;47(4):240-250
11. Mandibular regeneration after immediate load dental implant in a periodontitis patient A clinical and ultrastructural case report Maurizio Catinari, MD, Manuel Scimeca, PhD, Massimo Amorosino, MD, Mario Marini, Doctor, Elena Bonanno, MD, PhD, Virginia Tancredi, MD Medicine (2017) 96:15(e6600)

EVENTS

- **39th Asia-Pacific Dental and Oral Care Congress October 26-28, 2017 Osaka, Japan**
- **American World Dentistry November 13-14, 2017 San Antonio, USA**
- **27th Global Summit and Expo on Dental Marketing December 07-08, 2017 Madrid, Spain**
- **3rd Annual meeting of the International Academy for Digital Dental Medicine December 8-9, 2017, Marriott Hotel Berlin, Germany**