Implants in periodontally compromised sites
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Abstract
Dental implant treatment is becoming increasingly popular and is a well-accepted option for the replacement of missing teeth giving successful outcomes. But the success of dental implant treatment in periodontally compromised patients is less clear. This paper report a case of block bone onlay grafting on a knife edged ridge with buccal concavity in the anterior maxillary area followed by implant after one year.

Key Words: Implants;Periodontics;Dental Implants

Introduction
Even though dental implants have become a reliable procedure for replacing missing teeth, it is still considered a challenge to place an implant in compromised sites with successful results. In 1965, Branemark placed the first titanium dental implant. His breakthrough research on osseointegrated implants at the 1982 Toronto Conference on Osseointegration in Clinical Dentistry opened the gateway for the wider usage in dentistry. Since then, prostheses anchored by titanium implants have continuously expanded.(1) Debate continues on whether similar success and survival rates can be anticipated in periodontally compromised patients.(2)

Periodontally Compromised Sites: The term, periodontally compromised means damage in quality and dimension of remaining alveolar ridge due to history of periodontal disease and consequential loss of teeth.(3) Once the teeth are lost, a continuous resorptive process results in diminished volume and strength of residual bone, loss of facial vertical dimension, impaired masticatory function, difficulty choosing a balanced diet, speech difficulty, facial soft tissue changes and pathologic fracture possibility.(4) This paper report a case of block bone onlay grafting on a knife edged ridge with buccal concavity in the anterior maxillary area followed by implant after one year.

Case Report
A patient aged 26 years reported to the Department of Periodontics at Sree Balaji Dental College and Hospital with a chief complaint of missing upper front tooth for last 3 years followed by a road traffic accident. No relevant medical history was present. Intraoral examination revealed Seibert’s class I ridge defect in 21, bleeding on probing, pockets in the posterior teeth, class I recession in 33 and 43 and presence of stains and calculus (Fig 1a). On investigation, routine blood examination was found to be within the normal limits. The patient was diagnosed with generalized mild chronic periodontitis.

Treatment Done: Initially scaling and root planning was done and patient was evaluated after two weeks for elimination of inflammatory conditions so that the tissue handling properties are improved. The recipient site was anaesthetised with 2% lignocaine 1:80,000 and incisions were given and the mucoperiosteal flap reflected. The ridge defect was measured with a periodontal probe. Bilateral mandibular nerve blocks were given using local anaesthesia followed by local infiltration in the symphysis i.e., donor area (Fig 1b). Vestibular incision was made in alveolar mucosa 5 mm or more apical to mucogingival junction. Distal extent of incision was limited to canine area as it reduces the incidence of temporary mental nerve paraesthesia. Markings were made and #702 bur was used to cut the block. Before harvesting the block, two stainless steel screws (1.6 mm) were placed to prevent rotation and micromovement. The block was then harvested to the recipient site and fixed (Fig 1c) and both the donor and recipient sites were sutured. Advantage of this technique was no interference with gingiva around anterior teeth, no mentalis muscle detachment hence accurate repositioning can be done with reduced risk of facial ptsosis and two step suturing. Disadvantages are initial shallow incision site hence the need for blade redirection, more bleeding, edema and invisible scarring. After 1 year, implant placement was done. A paracrestal incision was given to raise the flap and screws were exposed (Fig 1d). Removal of the screw was done and the threaded implant measuring 3.3 by 10 was placed in the augmented region (Fig 1e, 1f). After 3 months angled abutment of 15 degrees was placed by flapless method. And restoration placed (Fig 1g, 1h).
Discussion

Casado et al. stated that periodontally compromised patients can successfully be treated with minimally or moderately rough implants, in the presence of maintenance therapy. (5) Buser, D implied that implant survival rate in patients with history of chronic periodontitis is above 90% for both short term (<5 years) and long term (>5 years). (6) Misch, C. E told that in patients with aggressive periodontitis, short term implant survival rate is above 95%, while long term is uncertain. (2) Another study by Albrektsson, T evaluated the outcome of implant therapy in periodontally compromised patients in need of additional functional tooth support. (3) Results indicated that periodontally compromised patients, who have experienced a considerable loss of alveolar bony support, can be successfully treated with implants. The 3-year and 5-year follow-ups show that osseointegrated implants may be successful in oral rehabilitation of partially edentulous patients treated for generalized aggressive periodontitis and generalized chronic periodontitis. (3)

Conclusion

With success and survival rates similar to those observed among periodontally healthy patients, there is no substantial evidence to exclude implant treatment options for patients with a past history of periodontitis. After analysis and clinical evaluation, implant placement and restoration can be considered a good treatment modality for periodontally compromised patients with acceptable long term results. However further researches and studies are required to improve the various treatment modalities to improve the success rate of placing implants in compromised sites.

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