

Split Crest Surgery for the Management of Resorbed Mandibular Ridge

Vesile Elif TOY¹, Mustafa Özay USLU²

¹Specialist, Department of Periodontology, Faculty of Dentistry, Inonu University, Malatya/TURKEY

ORCID ID: 0000-0001-5183-6295

²Assistant Professor, Department of Periodontology, Faculty of Dentistry, Inonu University, Malatya/TURKEY

ORCID ID: 0000-0002-9707-1379

Corresponding Author:

Dr. Vesile Elif TOY,

Department of Periodontology, Faculty of Dentistry, Inonu University, Malatya/TURKEY

etoy71@hotmail.com, +90 532 470 2326

Abstract

Introduction: Alveolar bone resorption after tooth loss often prevents dental implants from being placed in ideal positions and requires additional augmentation procedures. Many techniques including guided bone regeneration, distraction osteogenesis, inferior alveolar nerve reposition, sinus lift approach with bone grafts and alveolar ridge split are successfully performed to overcome this problem. This report presents a split crest surgery supported by a free gingival graft (FGG) to eliminate horizontal ridge deficiency.

Case Report: A 55-year-old female patient was admitted to our clinic with the request of dental implant for right mandibular first molar. To enhance the width of alveolar ridge which was insufficient for dental implant placement split crest technique was performed. After flap elevation, mandibular buccal wall was split with piezosurgery, expanded and the gap was filled with xenograft (Cerabone 0.5-1 mm, Botis Dental GmbH, Germany) and covered with a resorbable collagene membrane (OsteoBiol Evolution 20 x 20mm, Tecross, Italy) and then sutured. Four months later, the implant was successfully inserted to replace the missing tooth in the augmented ridge. After 3 months of healing period, an FGG was carried out in order to enhance the amount of peri-implant keratinized tissue. One month after FGG surgery, the patient with healing caps was referred to the department of prosthodontics for prosthetic structure.

Discussion & Conclusion: Four years follow-up of the patient demonstrated that the amount of hard and soft tissue gained by the augmentation was satisfactory and periodontal health was maintained.

Hard and soft tissue deficiencies often interfere with implant placement in a desired position. Split crest technique combined with FGG exhibit a predictable method to treat insufficient mandible successfully.

Keywords: Dental implant, piezosurgery, split crest technique.