

Prosthetic Rehabilitation of an Edentulous Maxilla with Microstomia, Limited Interarch Space, and Malaligned Implants: A Clinical Report

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Introduction

Microstomia is described as an abnormally small oral orifice (1). It can occur as a result of trauma, including injury to facial tissues from animal bites, electrical and thermal lesions, and chemical burns (2). The condition can also result from genetic disorders or syndromes (3,4). Surgical treatment for orofacial cancers and reconstruction of lip defects can cause microstomia as well (5). Prosthetic rehabilitation of microstomia patients presents difficulties at all stages, from the preliminary impressions to fabrication of the prostheses. Because these patients typically have a small oral opening and a limited interarch space, it may be really difficult to make impressions and fabricate dentures using conventional methods (6).



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Abstract

Background: Although dental implant treatment is a very successful option today, a meticulous treatment planning and close collaboration between the oral surgeon and restorative doctor is crucial to eliminate undesired outcomes.

Purpose: To present a challenging case restored with a maxillary screw-retained fixed prosthesis using malpositioned/malaligned implants.

Materials and Methods: A 47-year-old female had a Lefort I fracture and lost all maxillary teeth due to traumatic injury in a traffic accident. Seven maxillary implants were placed using a 1-stage surgical approach, 6 months after open reduction surgery in a private practice. Radiographic and clinical evaluation indicated marginal bone loss around 3 anterior implants. The malposition and malalignment of implants made impression and casting procedures very complicated. The other challenging factors with this patient were microstomia, limited mouth opening due to scar tissue from previous plastic surgery, and a very small maxilla. The 1-piece metal framework did not fit accurately so it was sectioned into 3 segments. The 3 separate segments were screwed on the abutments individually, then connected to each other using an acrylic resin. The 3 framework segments were laser welded. After the laser welding, a passive fit of the framework was achieved.

Conclusion: It has been suggested that providing an implant treatment to a patient with implants placed in wrong positions with undesired angulations can be very difficult. Also, laser welding may be a viable option to eliminate misfit of full-arch metal frameworks.

KEY WORDS: implant, maxilla, malaligned, microstomia, laser welding.

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