“Raising the Bar” with an Obturator Overdenture for a Professional Singer

Rachel Brooke, DDS[1], Kenneth S. Kurtz, DDS, FACP[2], Patrick Nolan, DDS, FACS[3]

Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY

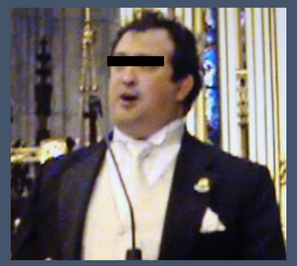
[1]PGY 3 resident, Department of Dentistry, Division of Prosthodontics, [2]Attending Faculty, Department of Dentistry, Division of Prosthodontics,
[3]Attending Faculty, Department of Dentistry, Division of Oral and Maxillofacial Surgery

References

Introduction

The incidence of cleft palate (with or without cleft lip) is 1:2,500[1]. Cleft palate treatment is multidisciplinary and longitudinal, including naso-alveolar molding (NAM), surgical lip and palate repair, orthodontics, additional surgical procedures and prosthetic replacement of missing dentition[1]. Cleft patients experience a high degree of morbidity due to extensive scarring from multiple surgeries and lack of supporting structures in the cleft site. Patients who present with a residual cleft palate often experience challenges with phonation, deglutition and mastication[2]. Lifelong prosthodontic care for this population is imperative to enhance esthetics, replace missing teeth and minimize the number and extent of invasive procedures.

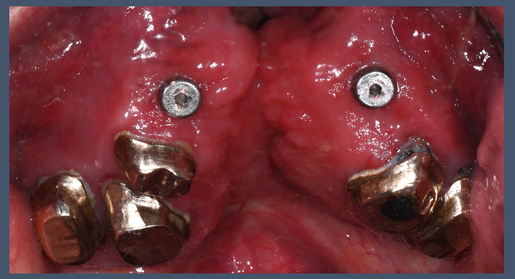
Patient Presentation



A 60-year-old male presented to Montefiore Medical Center with a residual cleft palate. His tooth borne, overlay obturator lacked retention due to the mobility of his anterior teeth (#’s 6 and 11). As a professional opera singer, he relied heavily on prosthetic obturation for optimal performance. Clinical evaluation revealed #’s 6 and 11 were non-restorable. The treatment pursued was a 2-implant bar, obturator overdenture.

Panoramic x-ray

Clinical Treatment



Extracted non-restorable anterior maxillary dentition. Immediately placed Nobel Conical Connection 3.5 x 11.5mm implants in sites #’s 6 and 11. Inserted straight MUA’s for fabrication of an abutment-level bar.

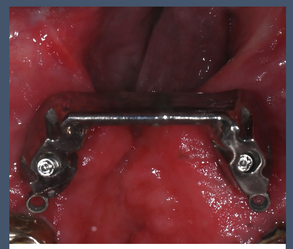
Implant Bar Design

Bar dimensions were determined using a silicone index of an artificial tooth set-up[3] and cast in Cr-Co.

1. Anterior Hader bar
2. Milled B/L retention grooves
3. Distal Micro-ERA’s[4]

Bar Insertion

Approximate VDO



Occlusal view

Framework Design

Cast Cr-Co framework features:

1. Loops to retain Hader clips[5]
2. Loops to retain Micro-ERA’s
3. Copings with beading for retention of acrylic
4. Engagement into buccal/lingual retention grooves

Prosthesis Delivery and Obturation

Discussion

The prosthetic rehabilitation of a residual cleft palate poses many challenges due to the presence of an oronasal fistula, a deficient premaxilla lacking lip support, missing anterior dentition, a class III skeletal relationship, lack of keratinized tissue in the cleft site, a V-shaped palatal arch and a large interocclusal distance. The treatment of this adult cleft patient with an implant bar, obturator overdenture enhanced the design of his previous prosthesis by providing additional support, retention and stability. For a professional singer with a complex oral condition, an overdenture retained by an implant bar and posterior dentition, successfully obturated the defect and restored the precise production of his vocal sounds.