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Olgu Sunumu/ Case Report

ÖN BÖLGE DİŞ EKSİKLİĞİ VE YER DARLIĞI OLAN DUDAK DAMAK YARIKLI BİR OLGUDA ESTETİK YAKLAŞIMLAR

ESTHETIC APRROACH OF THE CLEFT PALATE PATIENT WITH NARROW ANTEIOR REGION AND TOOTH LOSS

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ÖZET

Amaç: Kliniğimize başvuran Dudak-Damak yarıklı hastanın ön dört keser diş eksikliğinin giderilip; estetik, fonksiyon ve fonasyonu tekrar kazandırılması amaçlanmıştır.

Olgu: Tek taraflı Dudak-Damak Yarıklı 24 yaşında erkek hasta, Atatürk Üniversitesi Diş Hekimliği Fakültesi Protetik Diş Tedavisi A.D öğretim üyesi kliniğine, ön dört keser diş eksikliğinin giderilmesi için başvurmuştur. Alınan anamnezde anne ve babasının akraba olmadığı, ailede Dudak-Damak yarıklı başka bir birey olmadığı tespit edilmiştir. Ancak hastanın, Çernobil Nükleer Santralinin patladığı 1986 yılında doğduğu ifade edilmiştir. Hasta ilk dudak-damak yarığı ameliyatını iki aylıkken geçirmiş. Dişlerde bulunan malpozisyon ve diastemalar nedeniyle 2006 yılında ortodontik tedavisine başlanmıştır. 2007 yılında uygulanan cerrahi tedavide, kalçadan greft alınarak çeneye yerleştirilmiştir. 2009 yılının Şubat ayında maxillayı öne almak için yeni bir cerrahi girişimde bulunulmuştur. Mayıs 2010 tarihine kadar cerrahi ve ortodontik kontrollerine devam edilmiştir. Ancak, hastanın ortodontik tedavisi hasta ve hekime bağlı sebeplerden tamamlanamadığı için, üst ön bölgede eksik dişlerin estetik olarak yerleştirilmesine imkân sağlayacak bir dişsiz alan bulunmadığı için özel illüzyon teknikleriyle mevcut aralığa yerleştirilmesi gereken dört keser diş mümkün olan en estetik form ve oranlarda restore edilmeye çalışılmıştır.

Sonuç: Dudak-damak yarıklı bir hastada üst ön dört keser diş kaybının protetik restorasyonu yapılmıştır. Böylece hastanın Dudak-Damak Yarığı sonucu kaybettiği estetik, fonksiyon ve fonasyon yeniden kazandırılarak hastanın yıllardır yaşadığı sorunlar giderilmiştir ve hasta memnuniyeti sağlanmıştır

Anahtar Kelimeler: Dudak-damak yarığı, protetik restorasyon, estetik.

ABSTRACT

Purpose: It is intended to restore the loss of upper four incisive teeth of patient who has applied to clinic with a Cleft Lip-Plate (CLP); and to provide with aesthetic, function and phonation.

Case: A twenty four aged patient with uni-lateral Cleft Lip-Palate has applied to faculty clinic of Prosthodontics. In order to, restore the loss of upper four incisive teeth. After anamnesis, it has been determined that mother and father have not been relatives and there was no other individual in the family with Cleft Lip-Palate. But it has been stated that patient was born in 1986 when Chernobyl Nuclear Power Plant exploded. Patient had gone through his first Cleft Lip-Palate operation when he was two months old. Orthodontic treatment was started in 2006 due to the malposition and diastemas of teeth. In the surgical treatment in 2007, graft, taken from hip, was placed in jaw. In February 2009 a new surgical initiative was performed to move maxilla forward. Surgical and orthodontic controls were continued until May 2010. However, for the orthodontic treatment had not been completed because of causes related to the patient and dentist; and there was no enough area which would enable the missing teeth in the front part to be placed aesthetically; four incisive teeth, which had to be placed in present space with special illusion techniques, were tried hard to be restored in best possible aesthetic form and proportion.

Conclusion: Prosthetic restoration of upper four incisive teeth loss of patient was done. Thus, the aesthetic, function and phonation of patient which had been lost as a result of Cleft Lip-Palate have been regained; and patient, far from problems he has had for years, is satisfied

Key Words: Cleft Lip-Palate, Prosthetic restoration, esthetic

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INTRODUCTION

Non-syndromic oro-facial clefts, which include cleft lip and palate, and cleft palate alone, comprise a range of disorders affecting the lips and oral cavity. The causes of which remain largely unknown. Effects on speech, hearing, appearance, and cognition can lead to long-lasting adverse outcomes for health and social integration. Clefts of the lip and palate are generally divided into two groups, isolated cleft palate and cleft lip with or without cleft palate, representing a heterogeneous group of disorders affecting the lips and oral cavity. These defects arise in about 1·7 per 1000 live born babies, with ethnic and geographic variation. Effects on speech, hearing, appearance, and psychology can lead to long-lasting adverse outcomes for health and social integration. Affected children need multidisciplinary care from birth until adulthood and have higher morbidity and mortality throughout life than do unaffected individuals.[1]Patients with cleft lip and palate usually present dental anomalies of number, shape, structure and position in the cleft area and the general dentist is frequently asked to restore or extract those teeth. Dental porcelain has been frequently used in prosthodontics for esthetic rehabilitation. High-strength all-ceramic systems have been developed for FPDs. Zirconium ceramics may be an alternative treatment modality both in the anterior and the posterior regions. Zirconium ceramic bridge was selected for the patient's treatment to ensure adequate strength on upper anterior teeth. The primary advantage of a zirconium restoration is esthetic benefit, as it is translucent and tooth-colored. A metal-free ceramic crown can transmit a great amount of incident light through to a ceramic core where light is scattered in a natural fashion.[2]Thus, the appearance of definitive restorations may be very close to that of a natural tooth.

Multidisciplinary management of patients with CLP has been well recognized and considered to be the standard for cleft care. This case report describes a management of a Cleft Lip-Plate patient with anterior narrow region and tooth loss.

CASE REPORT

A twenty-four aged patient with uni-lateral cleft Lip-Palate has applied to faculty department of Prosthodontics, Faculty of Dentistry, Atatürk University, in order to remove the deficiency of front four incisive teeth. After anamnesis, it has been determined that mother and father have not been relatives and there was no other individual with cleft Lip-Palate. But it has been stated that patient was born in 1986 when Chernobyl Nuclear Power Plant exploded. Patient had gone through his first Lip-Palate cleft operation when he was two months old. Orthodontic treatment was started in 2006 due to the malposition and diastemas of teeth. In the surgical treatment in 2007, graft, taken from hip, was placed in jaw. In February 2009 a new surgical initiative was performed to move maxilla forward. Surgical and orthodontic controls were continued until May 2010. However, for the orthodontic treatment had not been completed because of causes related to the patient and dentist; and there was no enough area which would enable the missing teeth in the front part to be placed aesthetically; four incisive teeth, which had to be placed in present space with special illusion techniques, were tried hard to be restored in best possible aesthetic form and proportion.

Abutment teeth (#14, #13, #23, #24) were prepared with a knife-edge finish line. Impressions for the maxillary prostheses were made using a vinyl-polysiloxane impression (Elite HD, Zhermak, Italy) material. The impression was cast with type IV dental stone (Hera, Moldano,Hanou, Germany) and the stone cast was mounted in a semi adjustable articulator (Dentatus ARHtype; Dentatus AB, Stockholm, Sweden) with an opposing mandibular cast. The shade of the restoration was determined and recorded, and then the zirconium (Noritake, Alliance, Higashiyama, Japan) framework was veneered using the dental porcelain (White Peak,Essen,Germany) specially designed for zirconium. (Fig.1-3) Definitive restorations were evaluated, adjusted for optimal contacts, contours, and esthetics. The bridge was luted with Polycarboxylate cement (3M ESPE Durelon,İstanbul, Türkiye) After prosthetic management, the patient was instructed about individual oral hygiene care of fixed prostheses.

Fig 1. Pretreatment intraoral photograph.

Fig 2. Pretreatment intraoral occlusal photograph

Fig 3. Post treatment photograph

DISCUSSION

A smile has been said to be one of the most important interactive communication skills of a person.[3] The ultimate objective of aesthetics in dentistry is to create a beautiful smile, with teeth of pleasing inherent proportions to one another, and a pleasing tooth arrangement in harmony with the gingiva, lips and face of the patient.[4]

The aesthetics of facial structure are used by humans to measure not only one's beauty but also his or her personality, intelligence, social class, trustworthiness, social skill, popularity, and overall "goodness" [5-8] That individuals born with cleft lip and/or palate (CL/P) are often stigmatized and face much psychosocial adversity growing up is well described. Teasing, bullying and unsolicited questioning about facial appearance and impaired speech has been reported widely. [9]

The cleft lip and palate patient is mainly characterized by the presence of an oro-nasal communication, malformation or agenesis of the teeth close to the cleft and deficient sagittal and transverse growth of the maxilla. These patients require various treatments involving a multidisciplinary team, which may include a maxillofacial surgeon, an orthodontist, a speech therapist, a pediatrician, a general dentist, a prosthodontist, an ENT specialist, a psychologist and all those professionals who can help provide functional, aesthetic and psychological improvement. In terms of physiopathology several authors have found dental anomalies in these patients, and report a variation in the number of teeth and their position, as well as a reduction in teeth size, the presence of root and crown malformations, and even a delay in tooth development. As regards morphological anomalies there is a predominance of enamel hypoplasia[10-16]. Treatment of the patient with cleft lip and palate represents a real problem from both functional and esthetic points of view. Today a functional result is not enough. An esthetic result is both necessary and possible to improve the quality of life.[17]

In this case has been reported that patient was born in 1986 when Chernobyl Nuclear Power Plant exploded. Cleft lip palates (CLP) are caused by a variety of factors. Ionizing radiation is only one of these factors. Zieglowski and Hemprich[18] reported that the meltdown of the nuclear reactor at Chernobyl on

April 26, 1986, and the subsequent radioactive fallout did not cause any acute radiation sickness in Germany. Cleft lip and palates occur with a frequency of between 1 and 2 cases in 1000 live births and thus belong to the most frequent congenital anomalies. During a 10-year period from 1980 to 1989, the average number of CLP newborns in the German Democratic Republic GDR was 1.88 per 1,000 live births. A significant prevalence increase was recorded in 1983, 1987 und 1988. In comparison to the mean rate in the period from 1980 until 1986, 1987 demonstrated an increase of 9.4%. The results support the allegation of the influence of radiation-induced increase of CLP newborns after the Chernobyl reactor accident.[18-19]

It can be difficult to achieve superior anterior esthetics in fixed partial dentures (FPDs). Zirconia ceramics with high flexural strength and esthetic can be treatment options for FPDs. The success of all-ceramic crowns and patient demands for metal-free, tooth colored restorations have led to the development and introduction of restorative systems for all-ceramic fixed partial dentures (FPDs).[20] Occlusal plane, negative spaces, smile symmetry, dental components, gingival harmony and illusion all affect smile design. More natural and highly patient tolerant treatments can be made with illusion techniques in porcelain restorations.[21] In dentistry, the same optical concepts are used to improve the appearance of dentition. By incorporating optical illusion, it is possible to significantly alter the perception of a patient's smile. It is the complex interaction among the features of tooth shape, size, texture, shade, position, and light source that ultimately determine dental esthetics. Altering the embrasure form affects the appearance of tooth width. Smaller embrasures make teeth appear wider. When tooth form is altered, the ambient light changes its direction of reflection. Flatter and smoother surfaces reflect more light directly back to the observer and therefore appear wider and larger.[22](Fig 4,5)

In this case, there was no enough area which would enable the missing teeth in the front part to be placed aesthetically; four incisive teeth, which had to be placed in present space with special illusion techniques, were used to be restored in best possible aesthetic form and proportion.

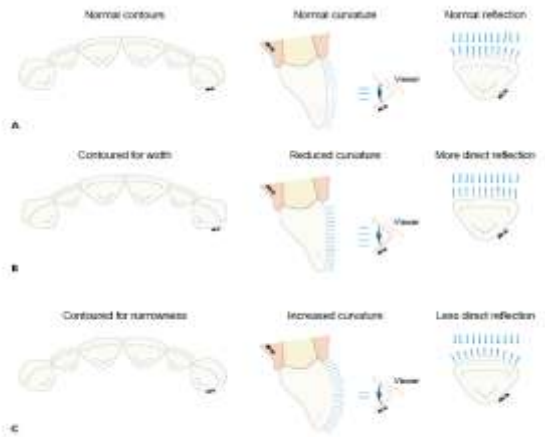

Fig 4. Schematic of the impact of altering contours to affect the perception of tooth length and width: *A*, normal contours;
B, teeth contoured to reduce curvature and light reflection and create the appearance of greater width; and *C*, teeth contoured
to enhance curvature and light reflection and create the appearance of less width.

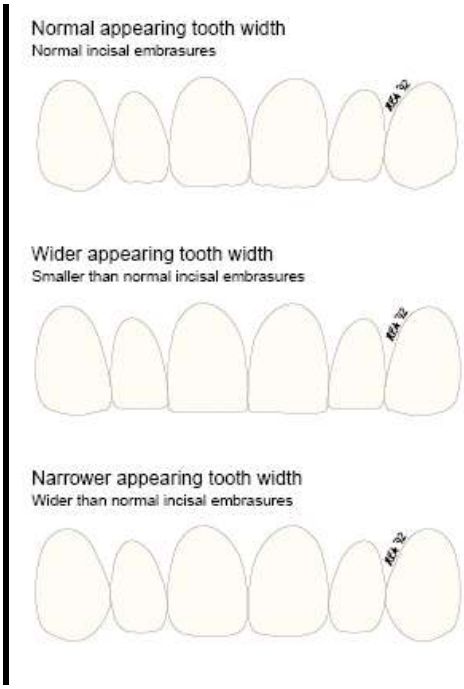

Fig 5. Schematic of the impact of altering incisal embrasure form to affect the perception of tooth width. As incisal embrasures are enlarged, teeth appear narrower.

CONCLUSSION

It must be remembered that true excellence in Cleft Lip and Palate treatment is dependent on a multidisciplinary approach. In this case, upper four incisive teeth loss was restorated with prosthetic rehabilitation. Thus, the aesthetic, function and phonation of patient, which had been lost as a result of Cleft Lip-Palate, have been regained; and patient, far from problems he has had for years, is satisfied.

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