

Multidisciplinary Treatment of an Adult Patient with Unilateral Cleft Lip and Palate: A Case Report¹

UNİLATERAL DUDAK-DAMAK YARIKLI ERİŞKİN BİR HASTANIN MULTİDİSİPLİNER TEDAVİSİ: OLGU SUNUMU

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Summary

Purpose: Cleft lip and palate (CLP) results from developmental variations that occur during the embryonic and the very early fetal period. Patients with CLP experience social, functional and psychological problems in their further lives. Multidisciplinary management of patients with CLP has been well recognized and considered to be the standard for cleft care. The purpose of this case report is to present multidisciplinary treatment of an 18 year old girl with unilateral CLP.

Case Report: An 18 year old girl with unilateral CLP referred to University of Süleyman Demirel, Faculty of Dentistry, because of the unaesthetic appearance of her anterior teeth. An alveolar cleft was present between maxillary left central incisor and maxillary left deciduous canine. Secondary bone grafting was applied for treatment of the alveolar cleft. Following operation, patient was referred to Orthodontics Department. Metal brackets with 0.018*0.022” slots were bonded to maxillary and mandibular teeth. Orthodontic leveling and finishing stages were performed in 16 months period. After fixed appliance therapy, fixed prosthodontic restorations were applied to achieve ideal aesthetic appearance, function and stability.

Conclusion: This case report demonstrated the need for multidisciplinary treatment in patients with CLP.

Key Words: Cleft lip, cleft palate, multidisciplinary treatment, secondary bone grafting

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Özet

Amaç: Dudak-damak yarıkları (DDY) embriyonik ve erken fetal dönemde oluşan, gelişim varyasyonlarının sonucu olarak gelişmektedir. DDY’li hastalar ilerleyen yaşamları boyunca sosyal, fonksiyonel ve psikolojik problemlerle karşılaşır. Dudak damak yarıklı hastaların multidisipliner olarak tedavi edilmesi gerekliliği bugün herkes tarafından kabul edilmektedir. Bu olgu sunumunun amacı, 18 yaşında unilateral DDY’li bir kız hastanın multidisipliner tedavisini sunmaktır.

Olgu Sunumu: On sekiz yaşında dudak damak yarıklı kız birey Süleyman Demirel Üniversitesi Diş Hekimliği Fakültesi’ne ön dişlerinin estetik olmayan görüntüsü nedeniyle başvurmuştur. Maksiller sol santral kesici diş ile maksiller sol süt kanin arasında alveol yarık tespit edilmiştir. Alveol yarığının tedavisi için ikincil kemik grefti uygulanmıştır. Operasyon sonrasında hasta Ortodonti Anabilim Dalı’na yönlendirilmiştir. Hastanın alt ve üst dişlerine 0.018*0.022” slotlu metal braketler yapıştırılmıştır. Ortodontik seviyelendirme ve bitiş safhaları 16 ayda tamamlanmıştır. Sabit tedavi sonrası, ideal estetik görünüş, fonksiyon ve stabilite için sabit protetik restorasyon uygulanmıştır.

Sonuç: Bu olgu sunumu dudak damak yarıklı hastalarda multidisipliner tedavi gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Yarık dudak, yarık damak, multidisipliner tedavi, ikincil kemik greftleme

Cleft lip and palate (CLP) results from developmental variations that occur during the embryonic and the very early fetal period (1). The reported frequency of CLP is 0.95 per 1000 live births in Turkish population (2). The etiology of clefts is complex and multifactorial (3). Patients with CLP experience social, functional and psychological problems in their further lives. Multidisciplinary management of patients with clefts of the lip and palate has been well recognized and considered to be

the standard for cleft care (3,4). This report presents multidisciplinary treatment of a case with unilateral CLP.

Case Report

An 18 year old girl with unilateral CLP referred to our department because of the unaesthetic appearance of her anterior teeth. She was the third child of the family and no familial incidence of clefting was determined in the history.

In another hospital, her lip was surgically closed at the age of 1 month and her plate at the age of 3 months. After, she did not receive any routine dental or medical treatment.

Extraoral examination revealed distortion of the base of the nostril and depression of the alar base on the cleft side (Figure 1). An alveolar cleft was present between maxillary left central incisor and maxillary left deciduous canine (Figure 2).

Secondary bone grafting was applied for treatment of the alveolar cleft. Bony margins of the cleft were exposed with the incisions performed at the mesial and distal sides of the cleft. Nasal mucosal tissues were dissected, approximated and sutured to form the floor of the nose. Mucosal tissues of the palatal area were also approximated and sutured. Spongy bone was harvested from the medial surface of the anterior iliac crest through a cortical window and alveolar bone grafting was performed (Figure 2). The cortical bone part that was opened was than placed at the base of asymmetrical alar cartilage. Nasoplastic operation was also performed at the same session. Following the nasal surgery “nostril retainer” was applied to insure symmetry and stability (Figure 3).



Figure 1. Extraoral front view of the patient before surgery.

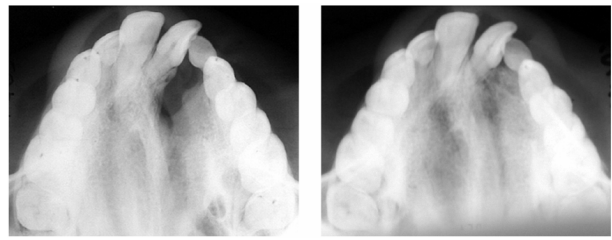


Figure 2. Preoperative and postoperative occlusal radiographs of the patient.

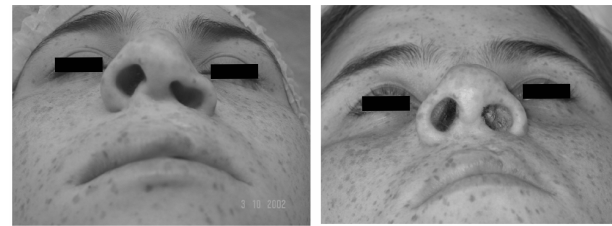


Figure 3. Preoperative and postoperative views after rhinoplasty. Alar base was supported during alveolar grafting.

Following operation, patient was referred to Orthodontics Department. Extraoral and intraoral examination revealed a normocephalic pattern, rotated position of maxillary left central incisor, absence of the maxillary left lateral incisor and mandibular left 2nd premolar. Maxillary left central incisor was narrower than the right central. Maxillary left deciduous canine and mandibular left 2nd deciduous molar were retained. Maxillary midline was shifted 1 mm to the left. No impacted tooth was determined in the radiographic examination. Cephalometric evaluation indicated that she had a skeletal Class II Malocclusion with a decreased mandibular plane angle (Figure 4). The positions of upper incisors were retrusive and lower incisors were protrusive (Table 1). Metal brackets with 0.018*0.022” slots were bonded to maxillary and mandibular teeth. The rotation of the maxillary left central incisor was corrected with the help of force couple obtained by elastic rondels attached to the cleat and bracket. Orthodontic leveling and finishing stages were performed in 16 months period. Space for maxillary left lateral incisor was preserved. Maxillary left deciduous canine was extracted during treatment. But, retained mandibular left 2nd deciduous molar was

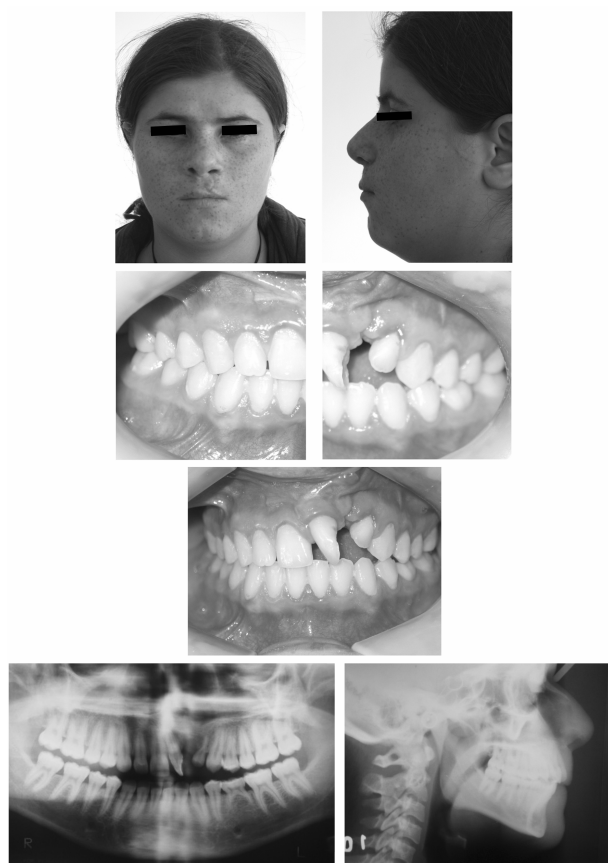


Figure 4. Extraoral, intraoral photographs and radiographs before orthodontic treatment.

Table 1. Cephalometric measurements before and after treatment.

	Before treatment	After treatment
SNA (°)	90.0	90.0
SNB (°)	82.5	82.0
ANB (°)	7.5	8.0
SND (°)	79.0	79.0
Upper Incisor-NA (°)	10.0	6.0
Upper Incisor-NA (mm)	-1.0	-1.0
Lower Incisor-NB (°)	35.0	35.0
Lower Incisor-NB (mm)	6.0	6.0
Po-NB (mm)	1.0	1.0
Interincisor angle (°)	127.0	131.0
Occusal Plane-SN (°)	17.0	15.0
GoGn-SN (°)	26.0	27.0

kept in mouth and a good occlusion was achieved (Figure 5). Cephalometric values before and after treatment were presented at Table 1.

After fixed appliance therapy, fixed prosthodontic restorations were planned to achieve ideal aesthetic appearance, function and stability. For this aim, upper incisors and canines were prepared and metal supported veneer ceramic crowns were applied (Figure 6).

After multidisciplinary treatment patient had an acceptable facial appearance and occlusion with ensuring good stability.

Discussion

CLP is the most common congenital craniofacial malformation. The child with CLP undergoes several surgical procedures to create an esthetically pleasing lip and nose, an intact palate and an intact alveolar ridge (1). Generally, the surgical closure of the lip is performed within the first few months of life (1). On the other hand there has been a controversy about the application of primary bone grafting. Some authors reported that primary bone grafting was a reliable method that provides intact anterior palate and better tooth position (5-7). On the other hand several authors advocated that this procedure interferes with normal maxillary growth (8,9). Secondary bone grafting performed between 9 and 11 years when the adjacent unerupted canine root is one-fourth to two-thirds complete is the most favorable timing in most centers (10). However, it is not always possible to meet the patients in secondary grafting period, so as in this case, late grafting can be performed in order to stabilize the maxillary arch and to achieve a firm anatomic base to aid orthodontic and prosthodontic management as well as to support the alar base for improving the aesthetics of the face.

Calvarial bone, mandibular symphyseal bone and iliac crest bone were tried for closure of alveolar clefts and iliac crest bone was reported as the most favorable graft for closure of residual alveolar clefts (3,11-14). Nasoplastic operation performed at the same session also contributed to a more esthetic facial appearance. Supporting the alar base during alveolar cleft reconstruction not only provides a better growth but also helps to reach better results after rhinoplasty. In the present

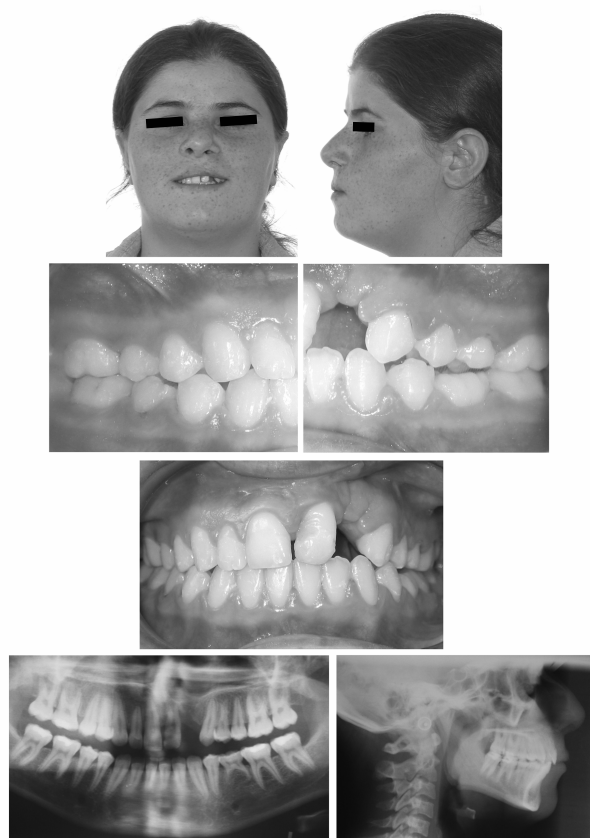


Figure 5. Extraoral, intraoral photographs and radiographs after orthodontic treatment.

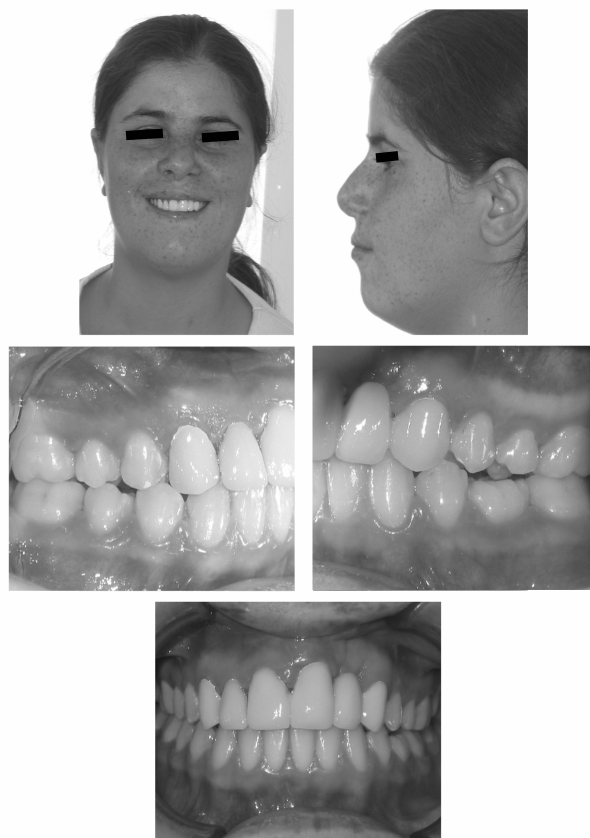


Figure 6. Extraoral and intraoral photographs after fixed prosthodontic treatment.

case, alar base was supported and the result of the rhinoplasty was satisfactory as alar wings became symmetrical (Figure 3).

Cephalometric evaluation of the patient revealed Class II Malocclusion and dentoalveolar compensation with retrusive maxillary incisors and protrusive mandibular incisors. This is an extreme situation as the maxilla often falls behind in growth and development in all three dimensions of space in many CLP cases. In this case, maxilla was normal in vertical and transversal dimension and hyperplastic in sagittal dimension. This may be due to hereditary growth pattern and incomplete cleft of the palate.

By fixed orthodontic treatment maxillary and mandibular teeth were successfully aligned and ideal occlusal relationship was achieved. Vargervik (15,16) pointed out that in addition to

missing lateral incisors, the central incisors are often narrower than normal. This was also true for this case as maxillary left central incisor was narrower than normal size. In addition to replace lateral incisor, restoration of the central incisor was also indicated.

In adult CLP patients, once alveolar bone grafting and all orthodontic treatment phases have been completed, missing teeth are replaced in a more permanent fashion, either with a fixed bridge or through the use of osseointegrated implants (1). In the present case an intercanine fixed bridge was preferred so as to ensure stability, aesthetics and function.

Conclusion

This case report demonstrated the need for multidisciplinary treatment in patients with CLP.

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