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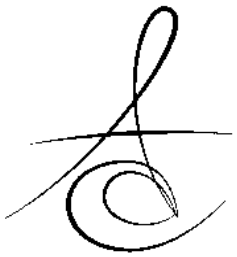

PROSTHODONTIC REHABILITATION OF A PATIENT WITH OLIGODONTIA A CASE REPORT

OLİGODONTİALI BİR HASTANIN PROTETİK REHABİLİTASYONU

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ABSTRACT

Hypodontia is characterized by partial or total congenital missing of one or more teeth, on one or both dentitions. Removable partial prosthesis, fixed prosthesis, overdentures and adhesive prosthesis are alternative treatments; and the indication is type dependent. The aim of this study was to describe a clinical case of an thirteen-year-old child with 27 missing permanent teeth of idiopathic etiology. The patient had facial and skeletal symmetry, normal development and was not related to any syndrome.

The treatment plan was done initially by the documentation of the case for teeth analysis (study casting models, periapicals and panoramic x-rays, and photographs). A removable appliance of heat cured acrylic resin with acrylic teeth used for maintenance of functional space and occlusion was planned and carried out.

The term tooth aplasia comprises hypodontia, oligodontia and anodontia. Oligodontia has been defined by several authors as agenesis of six or more permanent teeth, third molars excluded. Oligodontia of permanent teeth is rarely seen. Oligodontia is commonly associated with specific syndromes and / or severe systemic abnormalities. The mechanism causing congenitally missing permanent teeth in this patient is obscure.

Keywords: hypodontia, oligodontia, prosthesis

ÖZET

Hipodontia her iki dişlenmede bir ya da daha fazla dişin tamamen veya kısmen doğuştan kaybıyla karakterizedir.Endikasyon tipine bağlı olarak hareketli parsiyel protezler, sabit protezler, yapıştırma protezler, implant üstü protezler alternatif tedavilerdir. Bu çalışmada amaç idiopatik etyolojisiyle 27 kalıcı dişin eksik olduğu on üç yaşında bir çocuğun klinik vakasını tanımlamaktır.Hasta yüz ve iskelet simetrisi yönünden normaldi, ve herhangi bir sendromla ilişkilendirilmedi .

Tedavi planında ilk olarak dişsel analizle vakanın dökümantasyonu yapıldı. Fonksiyonel aralığın korunması ve okluzyonun sağlanması için hareketli bir protez planlandı ve yapıldı.

Hipodontia oligodontia ve anodontia diş eksikliğini kapsayan terimlerdir. Oligodontia üçüncü molar dişler hariç altı ya da daha fazla kalıcı dişin gelişmemiş olması şeklinde tanımlanmıştır.Oligodontia kalıcı dişlerde nadiren görülür.Oligodontia spesifik sendromlar ya / ya da ciddi sistemik anomalilerle birlikte daha çok görülür.

Bu hastada doğuştan kalıcı dişlerin kaybı mekanizmasının nedeni belirlenemedi..

Anahtar Kelimeler: Hipodontia, Oligodontia, Protez

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INTRODUCTION

Tooth development involves a serial of complex, temporal, cellular interactions and is influenced by genetic and environmental factors. Dental enamel originates from the ectodermal germ layer, which is formed in the gastrulation process. In humans, this process occurs during the third gestational week; the embryo develops from a bilaminar to a three-layered oval disc, comprising ectoderm, mesoderm and endoderm. The cells in each layer have different and distinct developmental 'destinies', and become more and more specialized throughout development [1].

Congenital absence of teeth may arise from[1] physical obstruction or disruption of dental lamina[2], space limitation[3], functional abnormalities of the dental epithelium[4], failure of induction of the underlying mesenchyme; and genetic factors have also been suggested [2].

The term tooth aplasia comprises hypodontia, oligodontia and anodontia. Oligodontia has been defined by several authors as agenesis of six or more permanent teeth, third molars excluded [3,4]. Oligodontia of permanent teeth is rarely seen. However, the numbers of missing teeth very rarely exceed eight. By using data from studies on hypodontia the frequency of oligodontia may be calculated, and varies between 0% and 0.5%. [1]

This report presents a very rare case of oligodontia with missing 27 teeth in permanent dentition.

CASE REPORT

This case was conducted on a 13 years old male child who has applied to Pediatric Dentistry of Faculty of Dentistry of Atatürk University. The patient had some discomfort because of his unerupted teeth. Intraoral and extraoral examinations were made after a detailed anamnesis.

It has been learned from his history that his permanent teeth had not erupted after his some primary teeth had extracted. No problem found at extraoral examination. At intraoral examination it has been seen that maxillary central and lateral teeth and mandibular left central tooth were missing, but primary canines and primary molars were present. The other mandibular primer incisor teeth were malformed. 27 missing permanent teeth were found out from the panoramic radiograph (Figure 1). After the diagnosis we concerned with any systemic problems related to missing teeth. The patient had facial and skeletal symmetry with normal development and there was not any associated systematic problem.

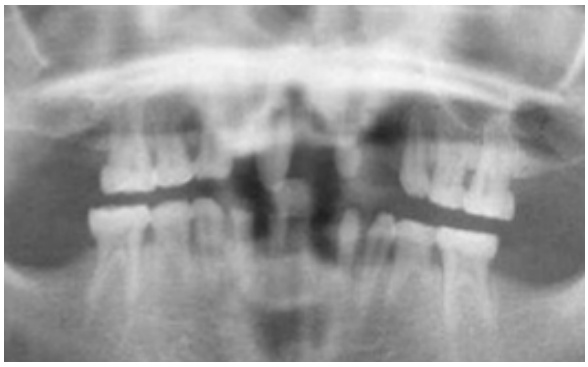

Figure 1: Panoramic radiograph was taken to find out whether or not permanent teeth germs were exist .

Following the diagnosis, prosthetic treatments of mandibular malformed incisors and removable dental prosthesis to maintain the space and occlusion were carried out. Firstly malformed mandibular right incisor, lateral and left incisor teeth were prosthetically treated. With this aim the teeth were prepared with a conical bur (Dia-Tessi, Vanetti SA, Gordevio Swiss). Prefabricated polycarbonate crown (3M Dental Products St. Paul, MN 55144-1000) was adapted after isolation of teeth with cotton rolls. Adaptation of the polycarbonate crown was made with a special scissor (Unitek Stainlies, Germany) and crown pliers and marginal adaptation was made using Sof-Lex polishing discs (3M ESPE AG Dental Products D-82229, Seefeld, Germany). To improve the crowns retention to teeth, inner side of each crown was roughened with a round bur. Tooth was dried with air syringe and aglass ionomer cement (Aquameron, Voco GmbH 27457 Cuxhaven/ Germany) was filled into the crown after mixing with a ratio of 1:1. Crowns were adapted to teeth with finger pressure, after a few seconds excessive cement was removed with a probe and the

binding part of the crown was cut. The procedure was finished following the final polishing. Then, removable partial prosthesis was made Tooth color was determined by using vita shade scale (Vita Zahnfabrik H.Rauter GmbH&Co.KG Bad, Sackingren,Germany). The impressions of the maxilla and mandibula were obtained using an irreversible colloidal impression material (Orthoprint alginate impression material, Zhermack, Italy). C-clasps were prepared to primary second molars and canines with a round wire of 0.7mm in diameter (Dentaurum 75228 İspringen, Germany). The prosthesis was processed with a heat-cured acrylic resin (Meliodent Heraus- Kulzer, **Germany)** with acrylic teeth (Major Prodotti Dentari S.P.A Moncalieri, Italy). After laboratory processes, the occlusion of the teeth was arranged. Prosthesis was delivered to the patient and recommendations were made recalling to visit after 3 months.

A

B

Figure 2 (a,b). Pre-and post-operative intraoral photographs

DISCUSSION

According to Schulze [5], tooth aplasia is among the most frequent anomalies in the craniofacial area. Oligodontia is commonly associated with specific syndromes and / or severe systemic abnormalities [2]. Hypodontia is a frequent sign (80%) of Ectodermal dysplasia (ED) [6]. Ectodermal dysplasias are a hete-rogeneous group of inheritable disorders characterized by abnormal development of embryologic ectoderm derivatives. There are more than 150 different variants of ED [7]. The condition includes two major types, hypohidrotic, in which the sweat glands are absent or decreased significantly, and hydrotic, in which the sweat glands are normal [8, 9]. The dentition and hair are affected similarly in both forms, but the hereditary patterns and nail and sweat gland manifestations tend to differ [10]. Oral findigs can be significant and include multiple tooth abnormalities including anodontia and hypodontia with associated lack of normal alveolar ridge development [11]ED is characterized by developmental failure of 2 or more ectodermal structures. . Panoramic radiograph was taken to find out whether or not permanent teeth germs were exist(figure-1)

Oligodontia may occur without a family history of oligodontia, although it is often familiar. It may also occur as a part of a syndrome, although it usually occurs alone (isolated). Note that *isolated* in this use means not a part of a syndrome [12]. In this case, the patient had not any systemic health problem any ectodermal tissue problem. The mechanism causing congenitally missing permanent teeth in this patient was found to be obscured.

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