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Case Report/Olgu Sunumu

A treatment of a pediatric patient with isolated oligodontia: case report

İzole oligodonti gözlenen çocuk hastanın tedavisi: olgu sunumu

Kamile Nur TOZAR[1], Merve ERKMEN ALMAZ[2]

[1]Adıyaman Universty Faculty of Dentistry, Department of Pediatric Dentistry, 02040, Adıyaman-Turkey
[2]Kırıkkale Universty Faculty of Dentistry, Department of Pediatric Dentistry, 71450, Kırıkkale-Turkey

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Abstract
Oligodontia is defined as the congenital absence of six or more teeth, excluding the third molars. In these patients, aesthetic and functional disorders due to a large number of missing teeth should be rehabilitated. A 6-year-old girl admitted to our clinic with the complaint of missing teeth. Radiological examinations revealed that a total of sixteen permanent tooth germs were found to be missing excluding the third molars. In order to rehabilitate aesthetics and phonation, pediatric partial dentures were made. The dentures were considered to be renewed every 6 months.
Keywords: Oligodontia; Hypodontia; Congenital tooth deficiency; Developmental disorder; Pediatric prosthesis.

Öz
Oligodonti, 3. molar dişler haricinde, 6 veya daha fazla sayıda sürekli diş germinin eksikliği olarak tanımlanmaktadır. Bu hastalarda fazla sayıda diş eksikliği nedeniyle oluşan estetik ve fonksiyonel bozuklukların rehabilite edilmesi gerekmektedir. 6 yaşındaki kız hasta kliniğimize çoklu diş eksikliği şikayetiyle başvurmuştur. Radyolojik muayene sonucu 3. molar dişler haricinde toplam 16 adet daimî diş jerminin olmadığı tespit edilmiştir. Estetik ve fonasyonun rehabilite edilmesi amacıyla hastaya parsiyel çocuk protezi yapılmıştır. Hastanın 6 ayda bir protezinin değiştirilmesi planlanmıştır.
Anahtar Kelimeler: Oligodonti; Hipodonti; Konjenital diş eksikliği; Gelişimsel bozukluk; Çocuk protezleri.

Yazışma Adresi/Address for Correspondence: Kamile Nur TOZAR, Adıyaman Universty Faculty of Dentistry, Department of Pediatric Dentistry, 02040, Adıyaman-Turkey, E-mail: ktozar@adiyaman.edu.tr
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Introduction

The term agenesis used in dentistry is defined as the congenital absence of the primary or permanent teeth.[1,2] Oligodontia or severe hypodontia was defined as the congenital absence of six or more teeth, except the third molar teeth.[3,4] The prevalence of oligodontia varies between 0.08% and 1.58%.[1,5,6]

Case Report

A 6-year-old girl lacking multiple teeth was admitted to the Department of Pedodontics, Faculty of Dentistry, Kırıkkale University. Informed Consent was signed by the patient's parent. This research was carried out by depending on Helsinki Rules Declaration. Written informed consent was taken from the clinic where the study was applied.

The anamnesis taken from the parents revealed that the central mandibular primary teeth were extracted. The clinicians whom the parents consulted previously suspected ectodermal dysplasia, but no related syndrome was detected as a result of the examinations.

In the clinical examination of the patient, it was observed that the teeth 55, 54, 53, 63, 64, 65, 74, 75, 84, and 85 were in the oral cavity, and severe bone loss was observed in the mandibular anterior region (Figure 1). As a result of the radiological examination, it was found that 16 permanent tooth germs did not exist (17, 15, 12, 22, 23, 24, 25, 27, 31, 32, 33, 37, 41, 42, 43, 47), except for the third molar teeth (Figure 2). Partial pediatric prosthesis was planned.

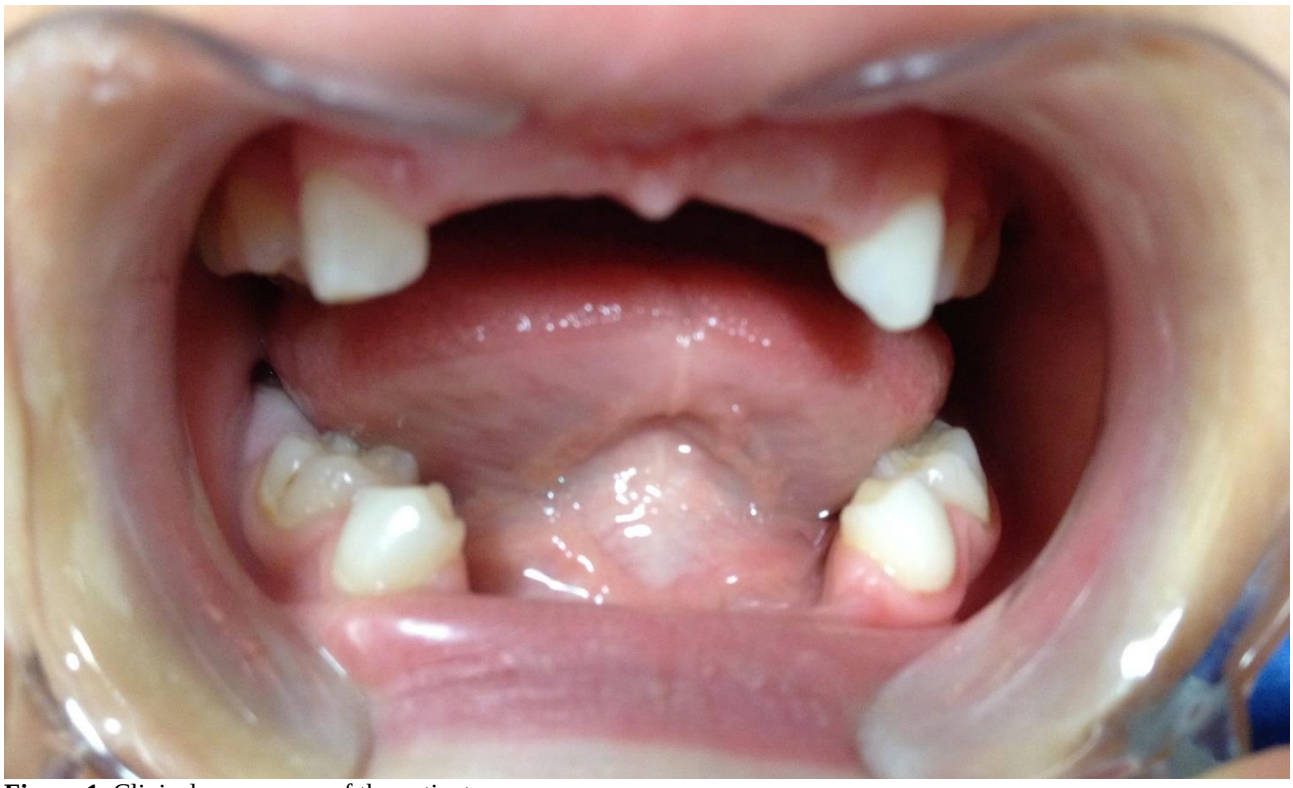

Figure 1. Clinical appearance of the patient.

After taking proper measurements of the patient, vertical size determination was made via wax up and the teeth were selected according to the mesiodistal dimensions of the missing teeth. Existing teeth in the patient's mouth were taken into consideration when choosing the color of the teeth. The patient underwent partial child prosthesis for rehabilitation of aesthetics and phonation (Figure 3). The prosthesis of the patient was changed every 6 months (Figure 4). Before the third prosthesis of the patient, it was seen that the teeth 11 and 21 started to erupt and the anterior region of the prosthesis was planned to be suitable for the eruption of the teeth (Figure 5).

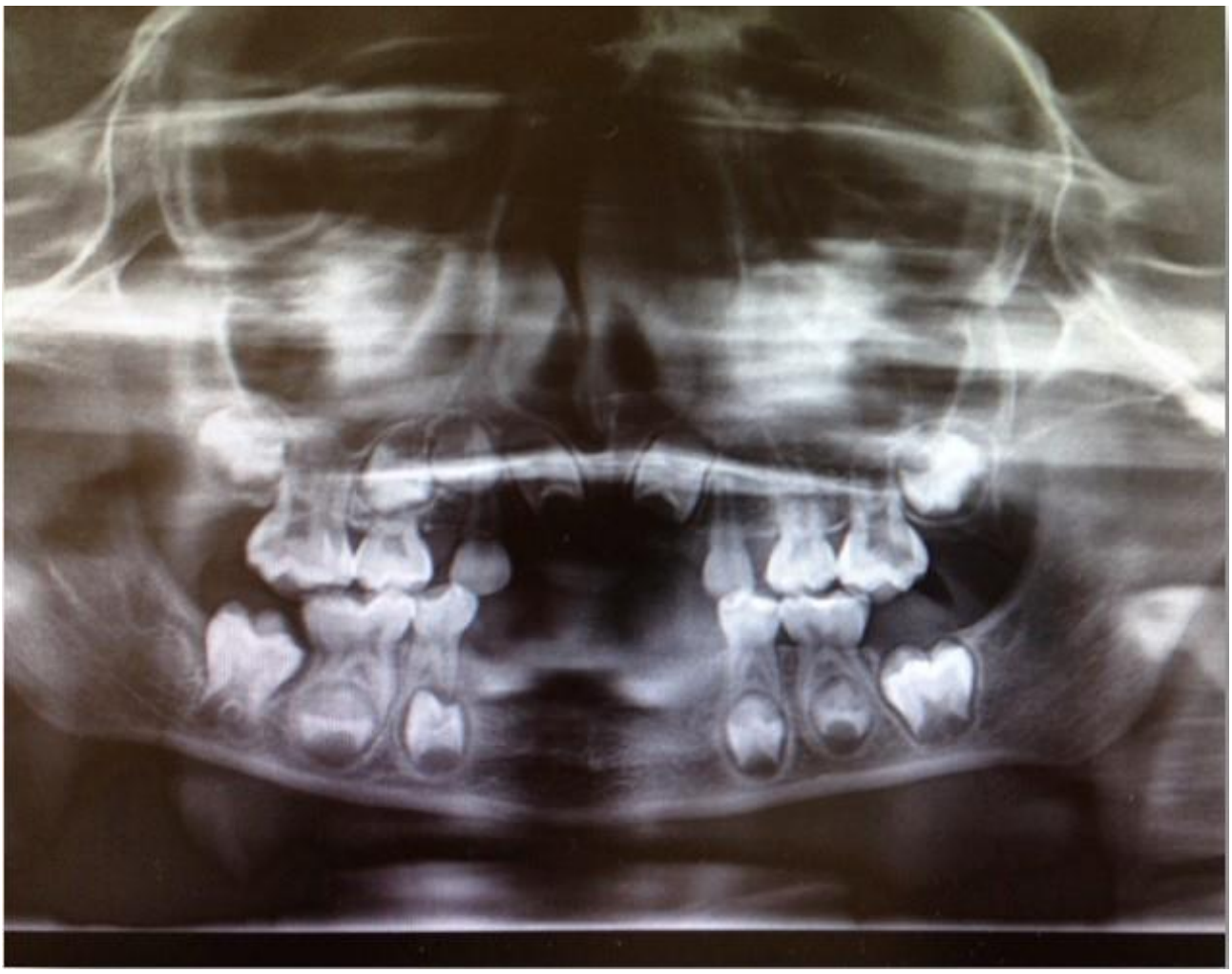

Figure 2. Panoramic radiography of the patient.

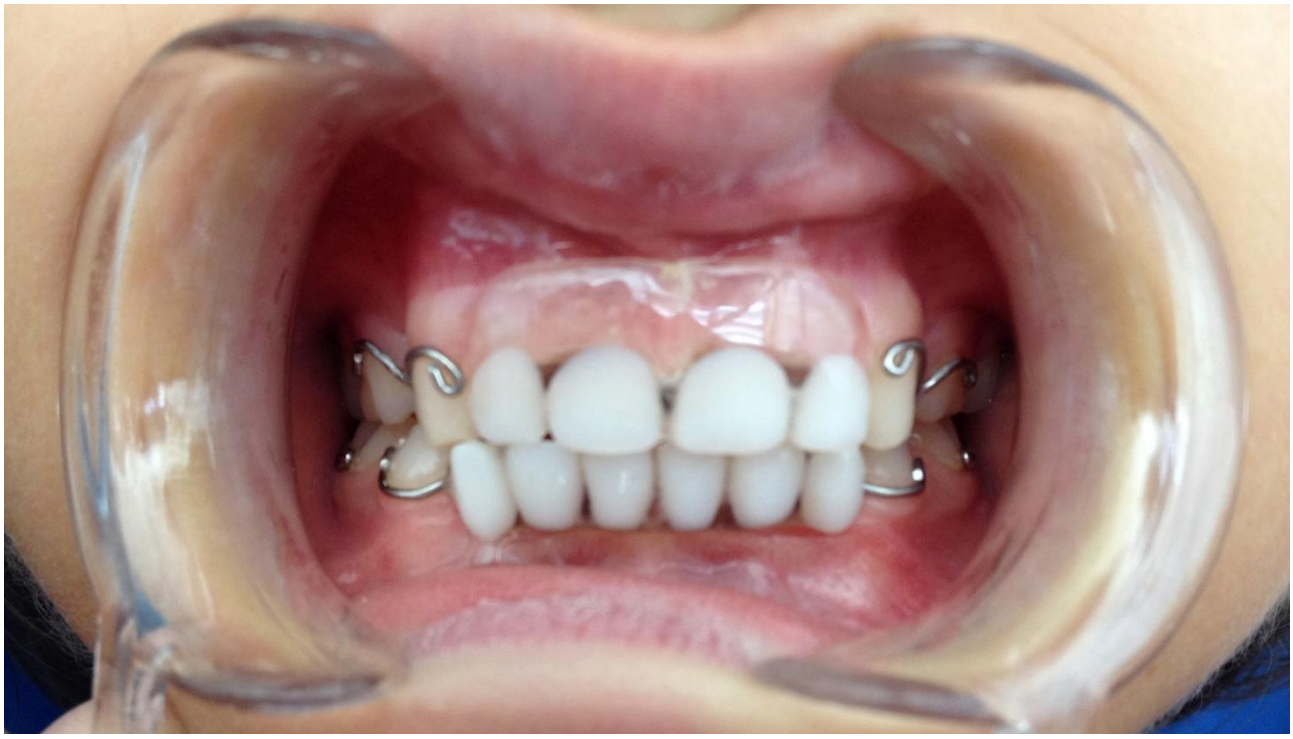

Figure 3. Appearance of the patient after the first prosthetic rehabilitation.

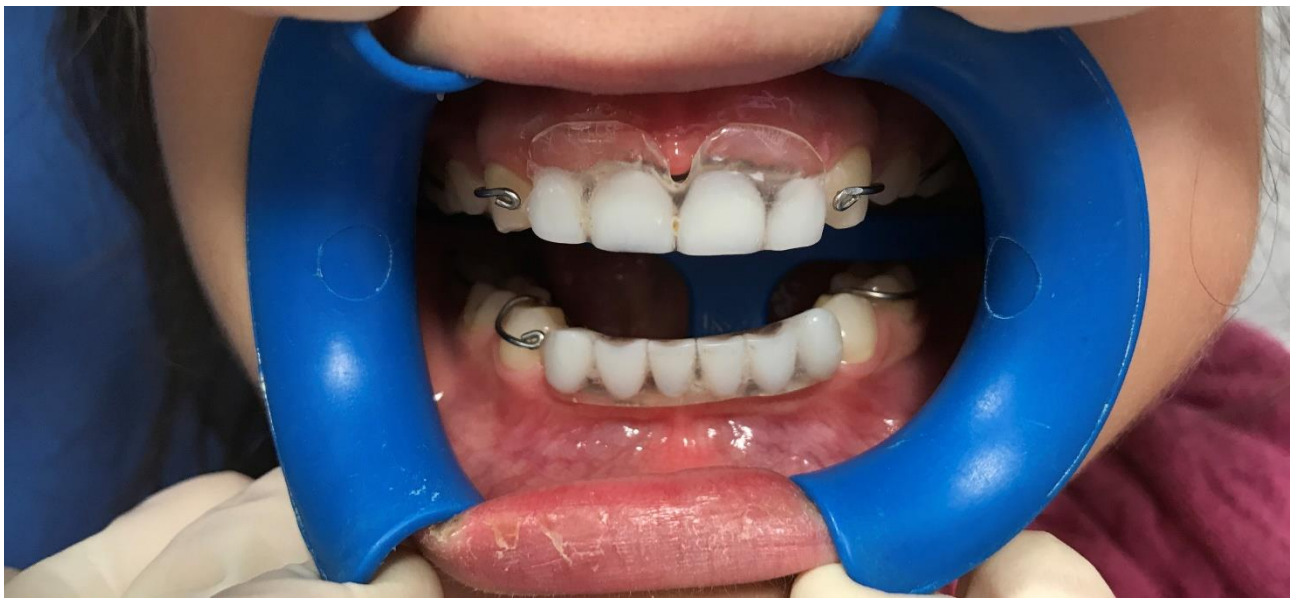

Figure 4. Appearance of the patient after the second prosthetic rehabilitation.

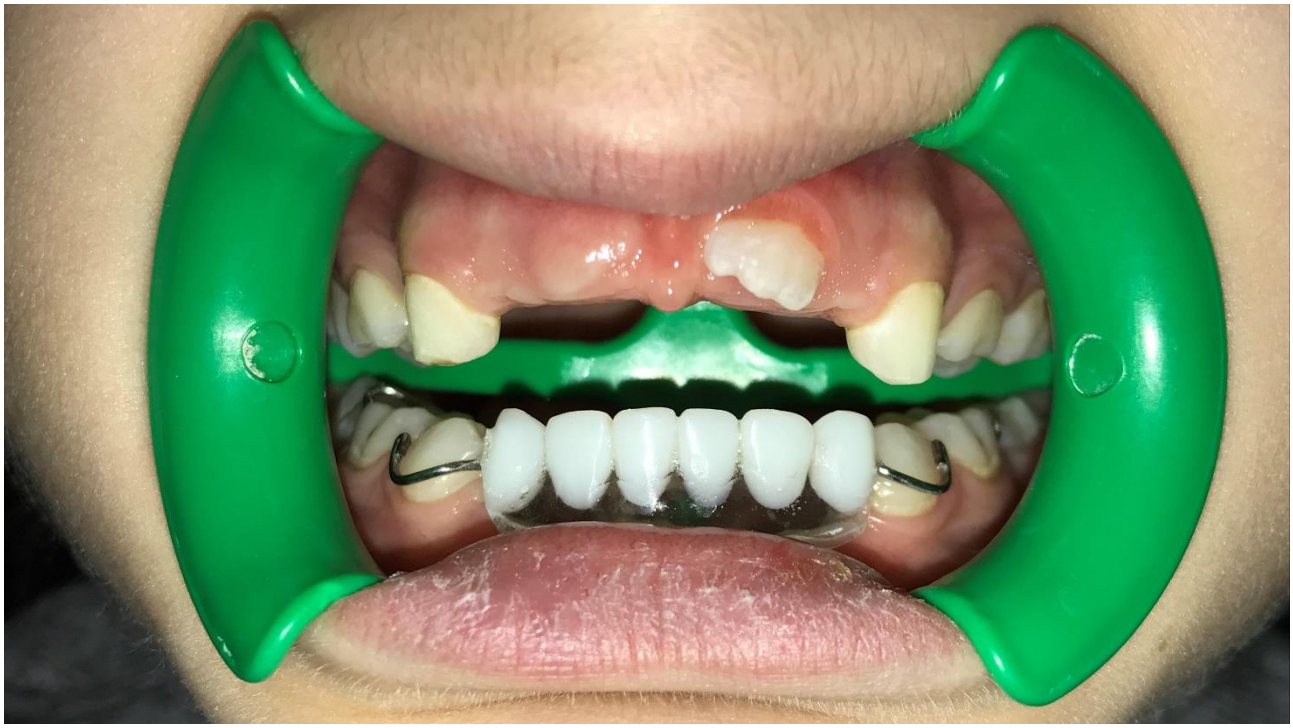

Figure 5. The appearance of the patient after the third prosthetic rehabilitation and the eruption of the tooth.

Discussion

Oligodontia cases may be associated with some syndromic conditions or independent from any syndrome.[7] The most commonly associated syndromes are ectodermal dysplasia and Down syndrome.[3] Deterioration in ectoderm-related tissues, such as skin, ears, eyes, and skeletal system, are observed in cases with syndrome.[8] In this case, the absence of the teeth was considered to be associated with ectodermal dysplasia as indicated by her sparse hair and face appearance of an old person. However, it was known from her previous examinations that she did not have any syndrome.

The etiology of the congenital absence of the teeth depends on various genetic and environmental factors.[8] Environmental factors include radiotherapy, infection, medicines, and endocrine and intrauterine problems.[8-11] In this case report, it was known from the patient's history that there was no systemic disease and she was not exposed to any of the mentioned environmental factors, so genetic factors were thought to be effective in the etiology of the missing teeth in this patient. In

addition, the absence of teeth in her sister supports the etiology of genetic origin.

It has been reported in previous studies that the absence of teeth in oligodontia cases were higher in the mandible than in the maxilla.[12] In the study of Şişman et al.[12] the absence of the mandibular teeth was found to be greater in patients with oligodontia, but another study reported that the absence of the maxillary teeth was more common. In the present case, it was seen that the lack of the mandibular teeth is more common compared to the absence of the maxillary teeth.

The treatment of oligodontia patients depends on the number of the missing teeth and the age of the patient, and includes several options such as total or partial removable prostheses, overdenture prostheses, fixed prostheses, implant-supported prosthesis applications, and orthodontic treatments.[13-15] Implants applied in children cause various problems since they cannot remain compatible with the growth of the adjacent alveolar bone.[15] In these patients, fixed prostheses or implants should be applied instead of removable prostheses only after growth and development is completed.[7] The advantage of applying removable prostheses in these patients during growth and development period is that changes that may be needed can be carried out more easily in case of any primary tooth loss.[7] In some studies, 3 months or 6 months after the application of the mobile child prosthesis, it is recommended to invite the patient for control, and renew the prosthesis if necessary.[7,14] In the present case, because of the age of the patient, a removable prosthesis was selected. Prosthesis was changed every six months to follow the jaw development.

The treatment of oligodontia cases is of great importance because it contributes to the aesthetics, the fulfillment of chewing functions, phonation correction, and the psychological development of the patient.[15] The most appropriate treatment in these patients should be selected by following a multidisciplinary treatment approach.[9] In addition, the delayed treatment of the patients with oligodontia limits the treatment options by causing structural defects in the primary teeth and bone resorption in the crest in toothless areas. These patients require a long-term follow-up to evaluate the physiological changes occurring and to replace the prosthesis accordingly.

The diagnosis and treatment of the patients with oligodontia should be performed in the early period and chin-face development should be monitored. The present patient was regularly called for follow-up appointments and scheduled to use a mobile child prosthesis until permanent restoration was performed.

Ethics Committee Approval

Informed consent was signed by patient's parent. This research was carried out by depending on Helsinki Rules Declaration. Written informed consent was taken from the clinic where the study was applied.

Informed Consent

Informed consent was signed by patient's parent.

Author Contributions

K.N.T: Conception, design, supervision, data collection, literature review and writer; M.E.A.: Interpretation, and critical review and design.

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Conflict of Interest

In the preparation and publication of this manuscript there was no conflict of interest.

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References

1. Niko CB, Lenz S, Ruiz-Heiland G, Ruf S. Nonsyndromic

oligodontia: Does the Tooth Agenesis Code (TAC) enable prediction of the causative mutation? *J Orofac Orthop*. 2017;78(2):112-120.
2. Akkaya N, Alpaslan S, Kanlı A. Oligodonti: Olgu Bildirimi. *Hacettepe Dişhek Fak Derg*. 2006;30(2):31-34.
3. Schalk-Van Der Weide Y, Bosman F. Tooth size in relatives of individuals with oligodontia. *Arch Oral Biol*. 1996;41(5):469-472.
4. Rølling S, Poulsen S. Oligodontia in Danish school children. *Acta Odontol Scand*. 2004;59(2):111-112.
5. Das P, Stockton DW, Bauer C et al. Haploinsufficiency of PAX9 is associated with autosomal dominant hypodontia. *Hum Genet*. 2002;10(4):371-376.
6. Hansen L, Kreiborg S, Jarlov H et al. A novel nonsense mutation in PAX9 is associated with marked variability in number of missing teeth. *Eur J Oral Sci*. 2007;115:330-333.
7. Ateş SM, Duymuş Z, Şişci T. Sendromla İlişkili Olmayan Bir Oligodonti Hastasının Tedavisi: Olgu Sunumu. *Atatürk Üniv Diş Hek Fak Derg*. 2016;26(2):330-333.
8. Ekren O, Benlidayi E, Karan S. Sendromsuz Bir Oligodonti Olgusunun İnterdisipliner Yaklaşım ile Rehabilitasyonu: Olgu Sunumu. *Atatürk Üniv. Diş Hek. Fak. Derg*. 2010;20(2):114-118.
9. Hu JC, Simmer JP. Developmental biology and genetics of dental malformations. *Orthod Craniofac Res*. 2007;10(2):45-52.
10. Muretic Z, Magdalenic M, Zarkovic MD. An interdisiplinary approach to the treatment of oligodontia. *Acta Stomat Croat*. 2001;35(2):117-120.
11. Pannu P, Galhora V, Ahluwalaı P, Gambhır RS. Non-syndromic oligodontia in permanent dentition: a case report. *Ghana Med J*. 2014;48(3):173-176.
12. Sisman Y, Uysal T, Gelgör I. Hypodontia. Does the prevalence and distribution pattern differ in orthodontic patients? *Eur J Dent*. 2007;1(3):167-173.
13. McDonald RE, Avery DR. Dentistry for the children and adolescent. 7th ed. Mosby: Inc; 2000.
14. Şaroğlu I, Oba A. İzole Oligodonti: Olgu Sunumu. *Cumhuriyet Dent J*. 2007;10(1):2-8.
15. Lederman PD, Hassel TM, Hefti AF. Osseointegrated dental implants as alternative therapy to bridge construction or orthodontics in young patients: Seven years of clinical experience. *Pediatr Dent*. 1993;15(5):327-332.