

SOLITARY MEDIAN MAXILLARY CENTRAL INCISOR: A CASE REPORT

Soliter Median Maksiller Santral Kesici: Olgu Sunumu

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ABSTRACT

The absence of maxillary central incisor is a rare condition. One central incisor with a symmetrical crown can be seen in both deciduous and permanent dentition at the midline and it is clinically the common sign of solitary median maxillary central incisor (SMMCI). SMMCI can be seen as a isolated dental anomaly as it can be seen with other midline defects.

The prevalence of SMMCI is 1:50.000 and the etiology is unknown. In the study SMMCI as a rare dental condition is taken into consideration for its systemic approach and treatment.

Keywords: *Solitary median maxillary central incisor, tooth agenesis, central incisor*

ÖZ

Üst orta kesici diş eksikliği nadir görülen bir durumdur. Kuron şekli simetri gösteren tek bir orta keser, hem süt hem de daimi dişlenme döneminde orta hatta konumlanabilir. Bu da klinik olarak soliter median maksiller santral kesici (SMMCI)'nin görülen en belirgin bulgusudur. SMMCI izole bir dental anomali olabileceği gibi çeşitli orta hat defektleri ile de görülebilir. Görülme sıklığı 1:50.000 olan SMMCI'nın kesin etyolojisi bilinmemektedir. Bu olgu sunumunda nadir rastlanan soliter median maksiller santral kesici saptandığında sistemik yaklaşım ve uygulanabilecek tedaviler açısından değerlendirilmiştir.

Anahtar kelimeler: *Soliter median maksiller santral kesici, diş agenezi, orta keser*

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Introduction

Agenesis of maxillary central incisors is a rare condition (1, 2). Solitary median maxillary central incisor (SMMCI) has symmetrical crown borders and is positioned in the midline of maxillary alveolar bone in deciduous and permanent dentitions (3). SMMCI might be observed either as an isolated dental anomaly or accompanied by several midline defects (1-2, 4-5). Other conditions that might accompany SMMCI are mental retardation, congenital heart anomalies, coloboma, nasal malformation (choanal atresia, nasal stenosis, piriform aperture stenosis), cleft lip and palate, hypopituitarism, hypothyroidism, holoprocencephaly (HPE) (2-4, 6-9).

The prevalence of SMMCI is 1:50.000 and its etiology is still unknown. It is thought that a mutation in Sonic Hedgehog (SHH) gene might lead to SMMCI formation (1, 3-5, 8-12). Sex predominance for SMMCI is a controversial issue while some studies state female predominance, where some studies state no sex predilection (1, 3, 10). Syndromes that can be seen along with SMMCI are: CHARGE syndrome, VACTERL syndrome, velocardiofacial syndrome, triple X (XXX) syndrome, Goldenhar syndrome and ectodermal dysplasia (3-9).

In this case report, systemic approach and possible treatments are evaluated in the presence of SMMCI.

Case

A systemically healthy, 17 years old female patient was referred to Dentomaxillofacial Radiology Faculty of Dentistry Istanbul University clinic for esthetic concerns. Single maxillary central incisor was observed during intraoral examination. The maxillary central incisor had symmetrical crown borders on the

mesial and distal edges and was positioned in the midline (Figure 1). According to patient's history, taken both from herself and her parents, the patient had no tooth extraction and there was no history of trauma to anterior part maxillary alveolar bone. Short maxillary labial frenulum was observed (Figure 2).



Figure 1. Patient's one central incisor with symmetrical crown in the midline.



Figure 2. Patient's maxillary labial frenulum.

Bilateral cross-bite and maxillary retrognathia were detected (Figure 3). Panoramic radiography revealed no impacted tooth in the anterior part of maxillary alveolar bone (Figure 4).

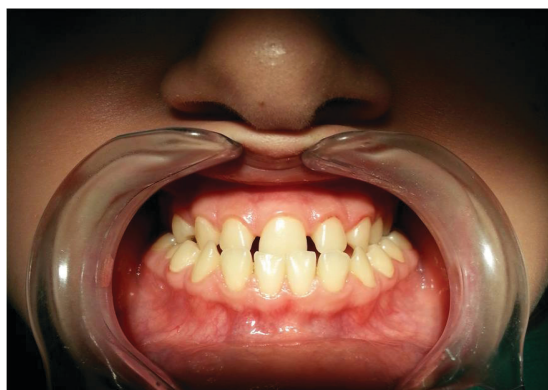


Figure 3. Patient's bilateral cross bite and maxillary retrognathia.

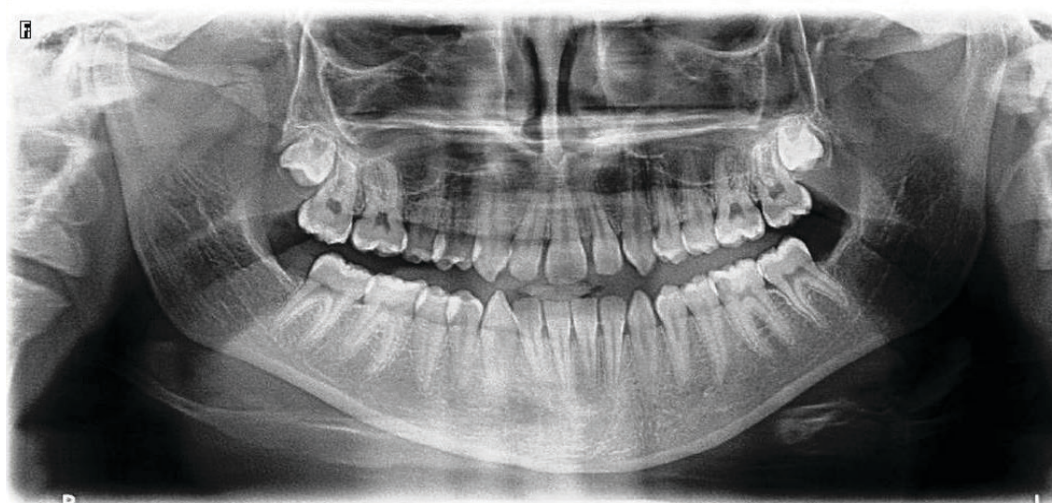


Figure 4. Patient's panoramic radiography.

Occlusal radiograph showed distinct palatal suture (Figure 5). During extraoral examination, philtrum and upper lip's vermillion curvature in the midline were not observed (Figure 6). For further examination of syndromes which can accompany SMMCI, the patient was referred to the departments of Medical Biology and Genetics, Ophthalmology, Otorhinolaryngology departments. Consultations did not reveal another symptoms.

Orthodontic treatment followed by implant therapy was recommended to the patient as treatment choice.

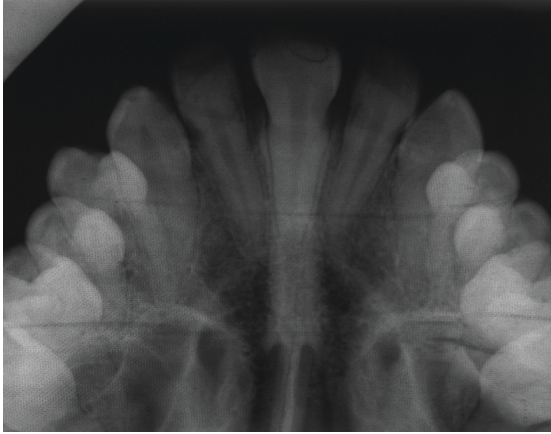


Figure 5. Patient's maxillary occlusal radiography.

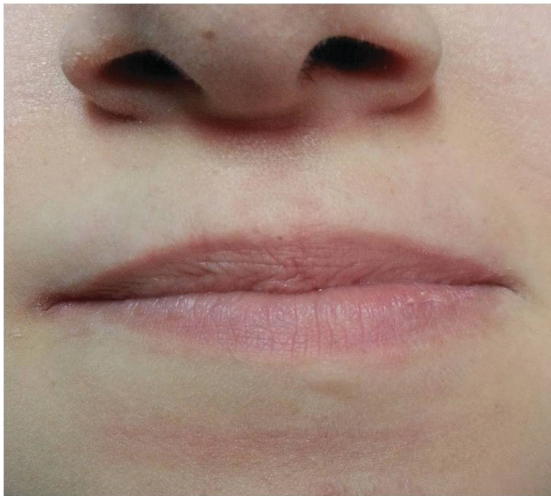


Figure 6. Patient's indistinct philtrum and arc shaped upper lip.

Discussion

Patients with SMMCI have normal maxillary jaw growth in vertical and horizontal dimensions; although, retrognathia may also be observed (1). Tooth's crown is symmetrical on mesial and distal borders and single incisor is positioned in the midline in deciduous and permanent dentitions (4, 8, 12).

In our patient, permanent maxillary central incisor with symmetrical crown borders was located in the midline. According to patient's history, only one central incisor was also present in deciduous dentition.

Due to the eruption of maxillary central incisor in the midline, upper lip's middle part elevates and leads to indistinct philtrum (1, 5-6, 8-9, 12). The curvature of upper lip's vermilion border and labial frenulum may not be present (1, 5-6, 8-9, 12). Incisive papilla may be absent (4, 8-9). A prominent ridge in the midline of palate from central incisor to soft palate can be observed (5, 8, 12). Mandibular prognathism, septal deviation or asymmetrical septa may be present (6, 12). Patients might have posterior cross bite (3, 8).

During extra oral examination of our patient, an indistinct philtrum was observed. Patient's upper lip was arc shaped and labial frenulum was present; however, the labial frenulum was shorter than normal. Our patient had bilateral cross bite.

As a dental symptom, a central incisor manifesting itself with symmetrical crown positioned precisely in the midline of maxillary arch, may be a precursor of other congenital malformations; therefore the presence of SMMCI should require attention (1, 5-6, 8-10). Consultations with the other clinics revealed no other symptom and patient's SMMCI was considered as an isolated dental anomaly.

The ideal treatment choice for patients with SMMCI is orthodontic treatment followed by prosthetic rehabilitation (1). After palatal expansion during permanent dentition, the SMMCI is shifted to one side of the midline and afterwards the patient received implant therapy or prosthetic rehabilitation. Conservative approach is recommended during deciduous dentition (4).

When patient's age and bilateral cross-bite are considered, full mouth crown restorations are not recommended. Severe malocclusion is not observed and due to the patient's age, orthognathic surgery is not recommended.

The recommended treatment plan is closure of diastemas and shifting of maxillary central incisor to one side by orthodontic treatment, followed by implant therapy. However, the patient did not accept the treatment because of long treatment procedures.

Conclusion

During deciduous and permanent dentition, a maxillary central incisor located precisely in the midline might be a precursor of various congenital anomalies, therefore it should be taken into consideration and patient should be evaluated systemically when SMMCI is present.

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