Mesiodens - case report

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ABSTRACT: Mesiodens is supernumerary tooth which is situated between the central incisors. The most frequent type of supernumerary tooth is a mesiodens. Supernumerary teeth may also disturb the teeth eruption and cause several complications, such as ectopic eruption and midline diastema. A 13 year-old girl (VA), with mesiodens in the upper jaw was presented in this article. She has esthetics, diastema mediana and ectopic position of the left central incisor was present. Orthopantomogram investigations revealed the presence of excessive teeth, in the upper jaw. According to the orthopantomogram’s and clinical findings, the patient was sent at the Department of Oral Surgery for the extraction of the mesiodens. Early and regular dental visits will help to diagnose and avoid problems that mesiodens can cause. Extraction of the mesiodens in the early mixed dentition was recommended, to decrease the risk of clinical complications, lighter spontaneous eruption of adjacent teeth and reduced need for orthodontic treatment after surgery.

Keywords: Impacted teeth; Supernumerary tooth; Mesiodens.

1. INTRODUCTION

Supernumerary are additional teeth compared to normal dentition. Mesiodens is supernumerary tooth which is situated between the central incisors. They represent one of the dental developmental problems in children. More often they occur in the central part of the upper or lower jaw, less commonly in the lower jaw, most often appearing on one side, but can also be found on both sides [1, 2]. Supernumerary teeth may also disturb the eruption and placement of other teeth (incorrect position and delayed eruption of adjacent teeth), forming retention places where the food can easily be retained and make it difficult to maintain proper oral hygiene. Supernumerary teeth may occur within some syndromes and be present as part of the symptoms e.g. disostosis cleidocranialis, orofaciodigital syndrome and Gardner syndrome. But they can also occur in patient without any problems or syndromes. Positive family history is one of the predisposing factors. Some supernumerary teeth never erupt and are detected randomly on an X-ray. The most common type of supernumerary tooth is mesiodens.
Mesiodens is a supernumerary tooth present in the midline between the two central incisors. It has a conical appearance, commonly localized in the premaxilla near the suture median and usually is located between the two central incisions on the palatal side.

Usually results in oral problems such as malocclusion, poor oral hygiene status, disturbed and poor dentofacial aesthetics, and cyst formation. The prevalence of mesiodens varies between 0.09% and 2.05% in different studies [3]. Mesiodens can be either unilateral or bilateral. The presence of several inferior teeth is called "midiodentes". The occurrence of mesiodens in the primary dentition is quite rare and in permanent dentition it is even considered the most common dental abnormality [2]. It has been reported that in 82% of cases it occurs in the maxilla, especially in the premaxillary region [4]. Only a few studies reported the occurrence of mesiodens in the anterior mandible region [3]. Morphologically three common types of mesiodens were described by many authors [3, 5], namely, conical or peg shaped, tuberculate and supplemental (tooth like) have been reported. However mesiodens usually has conical.

Usually mesiodens erupted normally, but may be impacted or erupted in a different position. Sometimes it is also likely that these teeth have an abnormal route of eruption and take an ectopic position. Different complications may arise as a result of the presence of a abnormal root formation, delayed eruption of the mesiodens, causing change in the path of eruption of permanent teeth, a median diastema, cystic lesions, intraoral infection, rotation, root resorption of adjacent teeth or even eruption of incisors in the nasal cavity, etc.

Kim et al. investigated the three-dimensional (3D) positions of mesiodens using cone-beam computed tomography (CBCT). The investigation was conducted within 293 Korean children (383 supernumerary teeth) aged 4-10 years with regard to the 3D positions of mesiodens, apical maturity of the permanent first molars, delayed development of the central incisors relative to the apical maturity of the permanent first molars (Nolla's stage), and eruption-related complications of mesiodens. The conclusion of this retrospective study was that eruption-related complications of the mesiodens were present in 33.7% of the patients [6].

2. CASE REPORT

A 13 year-old girl (VA), with mesiodens in the upper jaw was presented in this article. She has esthetics, diastema mediana and ectopic position of the left central incisor was present (Fig. 1). Orthopantomogram investigations revealed the presences of excessive teeth, in the upper jaw (Fig. 2). According to the orthopantomogram’s and clinical findings, the patient was sent at the Department of Oral Surgery for the extraction of the mesiodens.

Mesiodens are detected by clinical examination and X-ray. Because during the X-ray recording was not suggested to the patient to take out her earrings, they are present on the orthopantomogram. No matter if the tooth mesiodens has clinically appeared in the mouth or not, an orthopantomogram should be made to exclude their presence in other parts of the jaw.
2.1. Diagnosis

Appropriate knowledge about dental anomalies by the dentists and knowledge about the position of teeth in the primary dentition and mixed dentition will allow early diagnosis of the mesiodens and prevention of further complications [7]. Mesiodens can cause asymmetry of jaws, retention of the maxillary central incision, or ectopic eruption of central incisors. In primary dentition, the mesiodens may have a normal shape and erupt in the most normal way, so it may not be noted.

In permanent dentition, the diagnosis of the mesiodens is easier if the eruption of anterior teeth is monitored. However, the diagnosis of mesiodens in permanent teeth usually was made by clinical examination and RTG recording. Supernumerary teeth are often unerupted and usually occur one by one. The
occurrence of single supernumeraries is in 76-86% of cases, while 12-23% of cases are bilateral [8]. If the mesiodens is positioned the anterior location, more problems will be caused due to disrupted growth and development of adjacent teeth in that region, the teeth most commonly erupted spontaneously after the extraction of the mesiodens [3, 5].

Chen et al. in their retrospective study reviewed the medical records of National Cheng Kung University Hospital patients who had undergone surgical intervention with general anesthesia between three years period. From the records of 165 patients, there were 185 supernumerary teeth in the maxilla and 56 in the mandible. In their conclusion they recommend panoramic radiographs and cone beam computed tomography for managing patients with possible multiple supernumerary teeth [9].

2.2. Classification

Classification of supernumerary teeth is based on the morphology and location of the teeth in the dental arches. According to the shape and size of the teeth, they are divided into two subclasses:
1) Eumorphic when the shape is the same as the central incisive
2) Dysmorphic when mesiodens may have a different form. The rarest form of mesiodens are molar-type extra teeth.

2.3. Therapy

The extra teeth have to be extracted because they can touch another permanent tooth root and can cause resorption of the root of the permanent tooth. Therapy of the supernumerary teeth depends on the type and position of the tooth. Immediate extraction of the mesiodens is indicated in these cases:
- when mesiodens cause inhibition or delay in the eruption of adjacent teeth
- move adjacent teeth,
- interference in the application of orthodontic appliances,
- causes a pathological state,
- spontaneous eruption of the supernumerary tooth.

There are two methods for extractions the mesiodens:
- early extraction - before the formation of the root of the permanent incision,
- late extraction - after the formation of the root of the permanent incision.

Some authors recommend the extraction of the mesiodens in early mixed dentition for easier eruption of central incisors. According to Altan et al. the treatment of mesiodens can be performed using three methods: (a) spontaneous eruption; (b) early intervention; and (c) delayed intervention. They found 82 mesiodens within 71 patients from pediatric population (4-14 year old children) from Tokat city in Turkey. In 76.8% of patients clinical complications were observed [10]. According to Kim et al. the optimal age for treatment, however, remains controversial [6].

Mesiodens are the most prevalent type of supernumerary teeth and in permanent dentition is not so rare condition. It is thought that genetic factors together with external factors can activate lamina dentis excessively and as a result of that condition, supernumerary teeth are formed. Extraction of the mesiodens in
the early mixed dentition was recommended, to decrease the risk of clinical complications [11] for a lighter spontaneous eruption of adjacent teeth and reduced need for orthodontic treatment after surgery [12]. However, if we have a case with no symptoms then it can remain untreated, with regular controls on the teeth.

3. CONCLUSION

Early diagnosis and appropriate surgical treatment of the mesiodens are important also for the minimization of the patient discomfort.

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REFERENCES


