**Supernumerary teeth and mental retardation: the importance of early surgical intervention**

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**ABSTRACT.** *Aim* This paper reported a rare case of hyperdontia in a children of 10 years old who revealed a mixed dentition and a light mental retardation. *Materials and methods* The therapeutic approach has been based on interdisciplinary cooperation between the pediatric dentist, orthodontist and oral surgeon. TC-Dentascan, with a panoramic and occlusal radiographs revealed the presence of two supernumerary teeth in the premaxillary region and clinical examination showed an abnormality of dentoalveolar complex. Both impacted supernumerary teeth were extracted under general anesthesia. Clinical examination revealed that they appeared two premolars in shape with fully formed crowns and partly formed roots. *Results* Three months after the extraction of supernumerary teeth there was a spontaneous eruption of permanent central incisors and left lateral incisor. *Conclusion* The authors emphasized the importance of removal of supernumerary teeth to eliminate the cause of a delayed eruption of permanent teeth.

**KEYWORDS:** Supernumerary teeth, Mental retardation.

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**Introduction**

Supernumerary teeth or hyperdontia means extra teeth; they are known to occur in conjunction with cleft lip and palate, cleidocranial dysplasia, Gardner’s syndrome, Down syndrome etc. [Primosch, 1981; Rubin et al., 1981; Turner and Hill, 1986; Brattstrom and Mc William, 1989; Yamamoto et al., 1989; Jesen and Kreiborg, 1992; Odell and Hughes, 1995; Tasar et al., 1995; Wynne et al., 1995; Atasu et al., 1996; Atar et al., 1997; Tane and Uzamis, 1999]. However, only a few investigators studied the relationships between supernumerary teeth and intellectual development, although the possibility of a correlation has raised questions [Wynne et al., 1995].

Reports of supernumerary teeth are quite common in mental retardation, such teeth often being discovered on radiographic examination of dental patients who are totally unaware of their existence [Ranalli et al., 1988; Wynne et al., 1995].

Many authors reported that supernumerary teeth occur anywhere in the dental arches but most commonly are found in the maxilla [Luten, 1967; Nazif et al., 1983; Solares, 1990; Scheiner and Sampson, 1997]. Luten [1967] reported that 97% of supernumerary teeth are located in the anterior area; Nazif [1983] found that 80% of these teeth with impeded that eruption occurred in the maxillary anterior region.

Supernumerary teeth may appear in a variety of shapes; they can be conical, tubercular or supplemental. Zilberman [1992] observed that the most common shape of supernumerary teeth is conical (61%), followed by premolar morphology. At the same way Liu [1995] reported on 152 supernumerary teeth, 67.7% is conical, 28.3% is tuberculate shape and 4% is a supplemental type.

Supernumerary teeth may occur singly, or in multiples. Zilberman [1992] in a group of 100 patients with a total of 130 supernumeraries found that 74 children had one, 23 had two, 2 had three and in 1 child there were four teeth. Liu [1995] registred on 152 supernumerary teeth among the 112 patient analyzed, 64.3% had one supernumerary tooth; 35.7% had two supernumerary teeth.

This report describes the occurrence of hyperdontia in a child with mental retardation and the authors emphasize the importance of interdisciplinary cooperation.
management for early removal of supernumerary teeth to eliminate the cause of a delayed eruption of permanent teeth with a premaxillary deformation.

**Case report**

The subject, referred to the orthodontist for examination by his dentist, was a boy of 10 years who revealed a mixed dentition.

The mother’s chief complaint, at the time of the examination, was the noneruption of the maxillary permanent left lateral and central incisors after the exfoliation of primary teeth. He had a history of slight mental retardation with no history of facial trauma.

Clinical examination revealed a characteristically convexes profile and labial incompetence. The patient was in mixed dentition comprising the first permanent molars, maxillary permanent right lateral incisor, maxillary permanent left first premolar and mandibular permanent incisors (Fig. 1).

The alveolar bone resulted more developed in the premaxillary region. Maxillary primary central incisors and lateral incisors had exfoliated but the maxillary permanent had not erupted.

Panoramic radiographic evaluation demonstrated the presence of upper permanent incisors with an irregular crown and normal roots. Latero-lateral and status-x radiographic inspections denoted the presence of two supernumerary teeth in the premaxilla. They were apparently tuberculate in shape interfering with the normal eruption of maxillary permanent incisors (Fig. 2-3).

The use of TC-Dentascan with a panoramic radiograph and an occlusal radiograph has been advocated to localize unerupted maxillary anterior supernumerary teeth. The examination was effected with assial scansion of 1 mm in thickness followed by tridimensional reconstructions, dentalscan and tridimensional reconstructions. TC-Dentascan evaluation confirmed the presence of two supernumerary teeth localised in the body of the premaxilla behind the upper permanent incisors unerupted. Supernumerary teeth resulted slightly smaller than incisors and their root’s development was not complete (Fig. 4-6).

The decision to remove supernumerary teeth was made to facilitate the eruption of the maxillary incisors. This treatment plan was explained to his family and with their permission the teeth were extracted together. Both impacted supernumerary teeth were extracted under general anesthesia. The patient tolerated the procedure well and the extractions were uncomplicated (Fig. 7).

Clinical examination revealed that both supernumeraries had fully formed crowns and partly formed roots, and they appeared to be of the same morphology of a normal premolar.

Three months later there was the spontaneous eruption of the permanent central incisors and left lateral incisor (Fig. 8).

The early treatment was achieved without complication and the patient is now under regular monitoring.
Fig. 4, 5, 6 - TC-Dentascan showing the position and the side of the supernumerary teeth.

Fig. 7 - Intraoral view during surgical removal of supernumerary teeth.

Fig. 8 - After 3 months extraction of supernumerary teeth.

Fig. 9 - Final frontal view of patient.
review regarding future fixed orthodontic therapy (Fig. 9).

Discussion

Failure of eruption of permanent incisors is often caused by the presence of one or more supernumerary teeth, localized in the pathways of eruption. Most problems associated with supernumerary teeth are due to their capacity to interfere with normal eruption and alignment with the adjacent teeth [Winserburg and Boering, 1981; Kock et al., 1986; Liu, 1995]. Complications of the developing occlusion may result in impaction, delayed eruption, or ectopic eruption of the permanent incisors, or could contribute to the development of a maxillary midline diastema [Acton, 1987]. However a review of the available literature revealed little or no information concerning the relationship between supernumerary and development of premaxilla.

In this patient the premaxillary complex is more developed since the eruption pattern of series’ teeth is altered because of the presence of supernumeraries; in fact due to the hyperdonta the basal bone growth is increased and the alveolar bone results more developed in the premaxillary region.

Early surgical intervention is preferred to induce spontaneous eruption of the permanent incisors, prevent anterior space loss, midline shift, and extensive surgical/orthodontic treatment [Grijalva and Kuster, 1993; Babu et al., 1998; Gallas and Garcia, 2000]. However mental retardation of the patient led to serious difficulties in motivation due to limited understanding at the initial phase of treatment. Behavior modification techniques can be effectively applied in dental treatment of this unfortunate patient and therefore his compliance, in spite of mental retardation problem, had affected treatment outcome positively.

Our patient presented two supernumerary teeth in the premaxillary region and because of their shape they can be considered two molariform supernumeraries.

Conclusion

This paper reports an unusual case of supernumerary teeth and mental retardation. The most important thing in this case is to enumerate and to identify the present teeth clinically and radiographically; only after this you will be able to give a definitive diagnosis and to formulate a treatment plan.

Further, it emphasizes the necessity of the cooperation between orthodontist and oral surgeon.

References


