

Supernumerary teeth in clinical practice

Anna K. Szkaradkiewicz¹, Tomasz M. Karpiński²

¹University of Medical Sciences in Poznań, Department of Conservative Dentistry and Periodontology, Poznań, Poland

²University of Medical Sciences in Poznań, Department of Medical Microbiology, Poznań, Poland

ABSTRACT

Introduction: Hyperdontia is the condition of having supernumerary teeth, or teeth which appear in addition to the regular number of teeth. The prevalence rates of supernumerary teeth in the permanent dentition amounts 0.1-6.9%, and in deciduous dentition 0.4-0.8%. The presence of supernumerary teeth can be found in everyday dental practice.

Case presentation: We describe 3 cases of patients with supernumerary teeth. First patient had supernumerary lateral incisor 12s, second - premolar fused, multicuspid, supernumerary deciduous tooth 64s of having several interconnected roots, and third - erupted odontoma between teeth 13 and 14. In all cases treatment involved the removal of the supernumerary tooth.

Conclusions: The decision on proceeding with the supernumerary teeth should be based on the full clinical picture and interview. Early diagnosis and removal of supernumerary teeth allow to avoid or reduce possible complications.

Key words: Hyperdontia, supernumerary teeth, supernumerary incisors, fused teeth, odontoma.

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Corresponding author:

M.D., Ph.D. Anna K. Szkaradkiewicz
University of Medical Sciences in Poznań
Department of Conservative Dentistry and Periodontology
Bukowska 70, str., 60-812 Poznań, Poland
e-mail: aniaszk@op.pl

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<http://jbes.strefa.pl>

e-mail: jbes@interia.eu

INTRODUCTION

Hyperdontia is a rare alteration of odontogenesis defined as the presence of any tooth or tooth substance in excess of the normal dental formula.

The prevalence rates of supernumerary teeth in the permanent dentition, reported in the literature, vary between 0.1 and 6.9% [1-6]. In deciduous teeth, prevalence is lower amounting to 0.4-0.8% [4-7].

The presence of supernumerary teeth may be part of developmental disorders. The most common syndromes that show a significant incidence of multiple supernumerary teeth are cleft lip and palate (16.7% of patients) [8], Gardner's syndrome [9] and cleidocranial dysostosis [10].

Sexual dimorphism in hyperdontia is reported by most authors, with males being more commonly affected. The reporting rates of between 1.1:1 and 6.5:1 are depending on the respective population [1, 3-6, 11-13].

Supernumerary teeth are classified according to their morphology and location. In the permanent dentition, there are four different morphological types: conical, tuberculate, supplemental and odontoma [7].

Area particularly predisposed to the formation of the supernumerary teeth is the maxillary anterior region. The most often supernumerary teeth are observed in the central incisors region (so-called mesiodens). Backman and Wahlin make known, that in the chosen Swedish children population as much as 78% of supernumerary teeth are mesiodens [14]. According to studies in the general population they appear in 0.15-1.9% [3-6, 14-16]. Next in relation to the occurrence frequency are supernumerary premolars (0.034-0.84% of the population) [3-6, 17]. Supernumerary teeth in the molar region are usually rudimentary paramolars or distomolars [18-20]. Fourth molars are very rare disorder relating to the teeth number and usually their presence is noticed not until on the radiographs [3, 6, 21, 22].

CASE PRESENTATION

Case 1

An 13-year-old female presented with an erupted tooth on the palate. The patient, despite his young age, pay attention to the health and appearance of their teeth. This tooth was a supernumerary lateral incisor 12s situated palatally just outside the arch.

At the same time was a slight rotation of teeth 11 and 12 (Fig. 1). Treatment involved the removal of the supernumerary tooth. The patient was referred for further orthodontic treatment.



Fig. 1. Case 1 - supernumerary lateral incisor 12s situated palatally.

Case 2

An 7-year-old female was referred by the orthodontist to extract the premolar supernumerary 64s deciduous tooth (Fig. 2). The tooth was located vestibularly. At the same time deciduous premolars 64 and 65 were moved in the palatal direction. Treatment involved the removal of the supernumerary tooth. Tooth 64s had features of fused, multicuspoid tooth of having several interconnected roots.



Fig. 2. Case 2 - extracted supernumerary fused, deciduous premolar 64s.

Case 3

An 24-year-old female reported for the purpose of re-endodontic treatment of tooth 14. In a clinical examination, between teeth 13 and 14, found a small additional tooth, which was defined as

odontoma (Fig. 3). The diagnosis of odontoma was confirmed by X-ray photograph and after-extraction examination. Treatment involved the removal of the odontoma, next endodontic treatment and prosthetic restoration of tooth 14.



Fig. 3. Case 3 - radiogram of erupted odontoma between teeth 13 and 14.

DISCUSSION

The etiology of hyperdontia is not completely understood. Various theories exist. One theory suggests that the supernumerary tooth is created as a result of a dichotomy of the tooth bud. Another theory, suggests that supernumeraries are formed as a result of local, independent, conditioned hyperactivity of the dental lamina. Heredity may also play a role, because supernumeraries are more common in the relatives of affected children than in the general population [23, 24].

The cases described above represent a small sample of the possible presentations for cases involving supernumerary teeth. Most cases of supernumerary teeth does not give clinical symptoms, they are detected during radiographic examination, incidentally [25]. Supernumerary teeth may erupt regularly in the oral cavity or be retained in the jaw. Eruption frequency is reported to vary between 15 and 34% in the permanent dentition [26], while in the milk dentition about two-thirds of

the supernumeraries erupt [26, 27]. In case of our patients all supernumerary teeth were erupted.

Supernumerary teeth may cause the following clinical problems: failure of eruption, displacement or rotation, crowding, abnormal diastema or premature space closure, dilacerations, delayed or abnormal root development of permanent teeth, cystic formation and ectopic eruption [7, 11, 18, 19, 23, 27-31]. Our patients had supernumerary teeth exclusively in maxilla, with predilection for the anterior and premolar region. At the same time in each of these cases noted clinical problems, particularly rotation or displacement of surrounding teeth.

Supernumerary teeth are more often found in males than females [1, 3-6, 11-13]. In our study all patients were female. It is possible that females compared to males, more likely report to the dentist, noting abnormal appearance of the teeth and wanting to improve this.

One from our patients (Case 3) had supernumerary tooth diagnosed as odontoma. Odontoma is a category of supernumerary teeth, not universally accepted. Odontomas are benign odontogenic tumors composed of enamel, dentine, cement and pulp tissue. They are usually clinically asymptomatic, but often associated with tooth eruption disturbances. In exceptional cases the odontoma erupts into the mouth [32], and such exception was at our patient.

Treatment of hyperdontia depends on the respective case. In all cases of our patients supernumerary tooth extraction was performed. In the permanent dentition with regard to the possible complications it is advisable to remove supernumerary teeth, including those not erupted [18, 19]. In cases of normal eruption and settings of supernumerary teeth, when they do not cause disturbances of the arc regularity it is possible to desist from this rule.

The final decision about the need to remove should undertake the physician, after clinical and radiographic image consideration. Therefore, prior to treatment should be performed panoramic radiogram, and in case of doubt additionally dental or occlusal X-ray.

CONCLUSIONS

The decision on proceeding with the supernumerary teeth should be based on the full

clinical picture and interview.

Early diagnosis and removal of supernumerary teeth allow to avoid or reduce possible complications.

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