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### *Rare cases of supernumerary teeth*

The supernumeracy of teeth (*hyperdontio*) is a state in which the number of teeth in an individual group or groups of milk or permanent teeth increases, as well as a condition where – apart from the normal number of milk or permanent teeth – tooth-like growths occur.

*Hyperdontio* develops as a result of hyperfunction of the dental ledge. Factors that affect the activating of dental ledge can be tensions occurring in the jaws and the premaxilla as well as the movement of separate facial outgrowths that cause dental ledge cleavage. As a result of dental ledge deformation a larger number of tooth are formed or there occurs a cleavage of tooth buds in the embryonic period (1). The trait may be inherited autosomally and dominantly without penetration in particular populations. As the result of dental ledge deformation there arises a larger number of tooth buds or there occurs the cleavage of tooth buds in germinal period. According to Tomy, overactivity of the dental ledge may be connected with the proliferation of other epithelial structures. According to Costack, overactivity of the dental ledge is an isolated disorder within ectoderm. Cadenat claims that the occurrence of supernumerary teeth in the jaw's anterior segment is caused by endurance of sphenopalatine artery, which, in normal conditions disappears with the passage of embryonic development of an individual (13).

Hyperdontia can negatively influence facial aesthetics and might be the reason of such abnormalities as: crowding of teeth, diastemata, inclinations and rotations, as well as retention of adjoining teeth and persistence of milk teeth (15, 16, 21). Hyperdontia also causes occlusal defect through an influence on the shape and reciprocal arrangement of the alveolar arches (2). Moreover, supernumerary teeth might undergo adhesion with proper teeth, which disturbs the aesthetic qualities of dentition and hinders or even makes the eruption of secondary dentition impossible.

The early and right diagnosis of supernumerary teeth is a *sine qua non* for avoiding complications that may occur irrespectively of whether orthodontic treatment has been undertaken or not. A radiological examination is of basic importance here; however, it can be imprecise due to interference of dental structures in an X-ray. Atypical clinical or radiological picture can cause difficulties in diagnosing this dental anomaly (3).

#### DESCRIPTION OF CASES

Case 1. Patient (aged 6) reported to the Department of Paedodontics, at the Medical University of Lublin in October 2005, referred by a dentist from a local clinic in order to consult disturbances of tooth eruption. As a result of an extraoral examination no functional disorder of muscles and

no changes in facial features were observed. In an intraoral examination the occurrence of mixed dentition was revealed. In the maxilla erupted permanent teeth: 16, 21, 26, and milk teeth: 55, 54, 53, 52, 63, 64, 65 were observed. In addition, two partly erupted supernumerary middle teeth 11' and 12' could be seen. Tooth 11' took the place of retained incisor 11. Both middle teeth were cone-shaped. Tooth 21 erupted right behind tooth 21' in mezorotation and mezoinclination. Dentition in the mandible revealed no deviation from the standard, the presence of permanent teeth: 36, 31, 41, 46, and milk teeth: 75, 74, 73, 72, 82, 83, 84, 85 was confirmed. Intermaxillary relations showed I Angle's class on both sides. Panoramic X-ray of October 2005 showed that the patient had all permanent tooth buds apart from upper and lower third molars. The presence of two supernumerary cone-shaped middle teeth with root lengths similar to lateral incisors was confirmed. However, tooth 11 that had not yet come through was placed labially to tooth 11', so that the images of those teeth projected on each other in the panoramic radiograph.

The following diagnosis was made: dental abnormalities – the presence of two supernumerary middle teeth. Treatment plan included extraction of the supernumerary teeth, and then observation of the eruption of remaining permanent teeth in the aim of starting orthodontic treatment, if there was no self-regulation.



Fig. 1. Case 1 – clinical picture

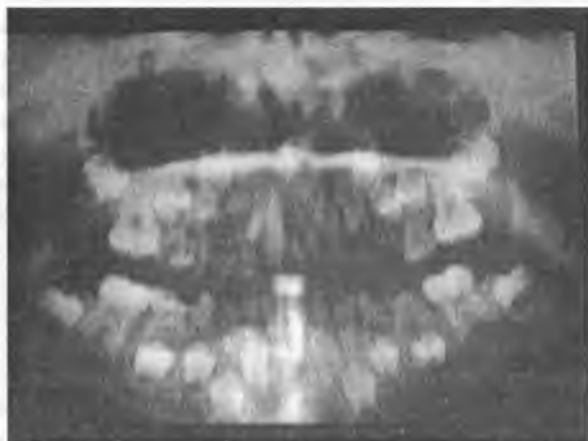


Fig. 2. Case 1 – radiological picture

Case 2. Patient (aged 9) reported to the Department of Paedodontics at the Medical University of Lublin in October 2005 for consultation and possible treatment. As a result of an extraoral examination no functional disorder of muscles and no changes in facial features were observed. In a clinical intraoral examination the presence of retained milk teeth 52, 51, 61, 62 were observed. In the oral cavity the following permanent teeth: 16, 14, 25, 26, 36, 35, 32, 31, 41, 42, 46 were found. Intermaxillary relations showed I Angle's class on both sides. The panoramic X-ray and occlusion pictures were taken. They revealed the occurrence of two supernumerary teeth in the incisor region. In the panoramic-picture all permanent tooth buds were revealed. The supernumerary teeth had probably been the reason for the upper permanent incisor retaining. After orthodontic consultation a decision was made to extract the retained milk teeth: 52, 51, 61, 62. After a month permanent upper lateral incisors started coming through, but permanent central incisors were still missing. In January 2006 the patient was referred for a surgery. In anaesthesia an incision into the 12-22 tooth segment was performed. After detachment of mucoperiosteal flap the supernumerary teeth were extracted. The patient remains under observation.



Fig. 3. Case 2 – clinical picture



Fig. 4. Case 2 – radiological picture

## DISCUSSION

As it appears from the bibliography mentioned below, supernumerary teeth develop more often in the anterior part of the maxilla and are connected with incisors (6, 7, 12, 17). Supernumerary teeth are twice as common in boys as in girls (6, 7, 17), yet Grzesiak-Janias (4) holds another view. Supernumerary teeth are usually untypically shaped and retained (5, 11, 20). Normally they are placed palatally or glossally in relation to the correct dentition (8, 9, 11). They most commonly occur individually with the localization in the area of the premaxilla (5, 8, 9, 11, 12, 19, 20). They also accompany many genetically determined syndromes, and birth defects, like cleidocranial dysplasia, hare lips (cleft lips), cleft palates, Down syndrome, Gardner syndrome, Marfan syndrome, dwarfism.

The most common form of hyperdontia is *mesiodens* – supernumerary middle tooth that occurs in the area of central incisors with the frequency of 0.5-0.7% (2). It is usually icicle- or sheath-shaped, has a cone-shaped crown and a short root (14, 18). It is hereditary in the autosomal dominant way. The development of the above described supernumerary teeth proceeded faster than it does in the case of normal teeth (10). The root development of these teeth had already stopped while the root development of central incisors was in divergent stage. Komorowska observed such a correlation in 11,3% of cases which was the least percentage of all the teeth (12). Most frequently (in 49.3% of cases) those teeth were developing at similar pace. It has a practical significance, because the gouging out of supernumerary teeth can be a threat to typical teeth, especially to those which have not yet completely developed.

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#### SUMMARY

Two cases of supernumerary teeth occurring in the area of incisor teeth are presented hereunder. The supernumeracy of teeth (*hyperdontia*) is a state in which the number of teeth in an individual group or groups of milk or permanent teeth increases, as well as a condition where – apart from the normal number of milk or permanent teeth – tooth-like growths occur. Hyperdontia can negatively influence facial aesthetics. The early and right diagnosis of supernumerary teeth is a sine qua non for avoiding complications. Case 1: patient (aged 6), in an intraoral examination two partly erupted supernumerary middle teeth 11' and 12' could be seen. Tooth 11' took the place of retained incisor 11. Both middle teeth were cone-shaped. Treatment plan included extraction of the supernumerary teeth and then observation of the eruption of remaining permanent teeth. Case 2: patient (aged 9), in a clinical intraoral examination the presence of retained milk teeth 52, 51, 61, 62 was observed. The panoramic X-ray and occlusion pictures were taken. They revealed the occurrence of two supernumerary teeth in the incisor region. After orthodontic consultation a decision was made to extract the retained milk teeth and the supernumerary teeth.

#### Rzadkie przypadki zębów nadliczbowych

Opisane zostały dwa przypadki występowania nadliczbowych zębów w okolicy zębów siecznych szczęki. Nadliczbowość zębów (*hyperdontia*) to stan, w którym zwiększa się liczba zębów w poszczególnych grupach lub grupach zębów mlecznych czy stałych, jak również stan w którym oprócz normalnej liczby zębów mlecznych lub stałych występują twory zębopodobne. Hiperodoncja może mieć negatywny wpływ na estetykę twarzy. Wczesne i prawidłowe rozpoznanie zębów nadliczbowych jest warunkiem uniknięcia powikłań. Przypadek 1: pacjent lat 6, w badaniu zewnątrzustnym stwierdzono dwa częściowo wyrżnięte nadliczbowe zęby środkowe 11' i 21',

z których 11' wyróżnął się w miejscu zatrzymanego siekacza 11. Oba zęby środkowe były kształtu stożkowatego. Plan leczenia przewidywał ekstrakcję zębów nadliczbowych, a następnie obserwację wyrzynania pozostałych zębów stałych. Przypadek 2: pacjent lat 9, badaniem klinicznym wewnątrzustnym stwierdzono obecność przetrwałych zębów mlecznych 52, 51, 61, 62. Wykonano zdjęcia pantomograficzne oraz zgryzowe, które wykazały obecność dwóch zębów nadliczbowych w okolicy zębów siecznych szczęki. Po konsultacji ortodontycznej podjęto decyzję o ekstrakcji przetrwałych zębów mlecznych oraz zębów nadliczbowych.