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### *Hard dental tissues defects – Turner's tooth. A case report*

Etiology and pathogenesis of developmental disorders concerning hard dental tissues has not been thoroughly explained. It is thought that a series of factors, such as metabolic diseases, hormonal disorders, chronic renal insufficiency, inadequate diet, high-risk pregnancy, genetic features, environmental aspects, medicines used, as well as dental caries, deciduous teeth injuries, long lasting chronic periapical parodontitis (especially the one located in deciduous molar roots bifurcations) may influence the occurrence of enamel structure disorders (1, 3, 4, 5, 10, 11, 12, 13, 14, 15).

Disorders occurring in the process of odontogenesis concerning abnormalities in the development of the enamel matrix may lead to lesions in the structure of this tissue. In atomic force microscopy, it has been established that it is characteristic of hypoplastic enamel to have a porous surface, smaller enamel grains, as well as decreased enamel thickness. On the basis of nationwide epidemiological and clinical studies performed in 1995, it was concluded that in 7-year-old patients enamel hypoplasia occurred in 2.8% of the studied children, while in 12-year-old patients in 7.8% of the studied children (2, 7, 9).

Hypoplasia of the hardest tissue in the human organism may concern either several teeth or just one. Turner's teeth constitute an example of localized disorders of tooth mineralization. They occur most often in permanent maxillary incisors and mandibular premolars. Clinical picture of this localized form of hypoplasia includes tooth crown size decrease with coexisting partial lack of enamel. Simultaneously, in some cases, there can occur yellow and brown, white or dark brown turbidity of this dental tissue, as a result of abnormal course of mineralization process. Sometimes it can also be observed that the tooth crown is covered with cement-like tissue. There can also appear root structure deformities (6, 8, 9, 15).

#### CASE REPORT

A 9-year-and 3-month-old patient visited the Chair and Department of Paedodontics at the Medical University of Lublin for a follow-up examination. At history data gathering, the patient's mother reported that she was worried about early eruption of tooth 35 (at the age of 7 years and 6 months). At the same time she said that for several months before tooth 35 eruption the patient had been treated for *periodontitis periapicalis chronica purulenta* of tooth 75. Persisting active fistula by tooth 75 led to the decision to extract the tooth. At the time of the patient's visit to the Chair and Department of Paedodontics, no lesions were found in extraoral examination. In intraoral examination, mixed dentition was found. Caries was present in teeth 55, 54, 64, 65, 26, 74, 84, 85 (Fig. 1, 2).

On the basis of abnormal structure of the mandibular left second premolar tooth, the presence of enamel loss on its surface and yellow and brown enamel discoloration, a diagnosis of Turner's tooth was made. In order to confirm this finding, the patient was referred to the radiologist for panoramic radiography (Fig. 3).

On the basis of the radiogram, it was observed that the patient had all tooth buds except for the third permanent molars and that the deciduous teeth have numerous carious defects. In the area

of periapical parodontium of teeth 84–85, 74, chronic inflammatory process was found. At the same time it was observed that tooth 44 demonstrated abnormal position in its alveolar process. On the radiogram, tooth 35 had abnormal structure – visible uneven enamel and dentine structure with enamel losses. Wide root canal with unfinished development of apex suggested Turner's tooth.

The patient had teeth 84–85, 74, 55 and 65 extracted – because there was no indication for conservative treatment, due to both inflammatory changes in periapical parodontium and advanced carious process of the hard dental tissues. Extended sealing of tooth 26, scaling of teeth 16, 36, 46 and varnishing of teeth 12–22 and 32–42, as well as all first permanent molars was performed. After orthodontic referral, the patient had tooth 35 extracted and further orthodontic treatment using space maintainer and permanent appliances was recommended. Currently the patient is followed-up at the Chair and Department of Paedodontics at the Medical University of Lublin.



Fig. 1. Maxillary teeth

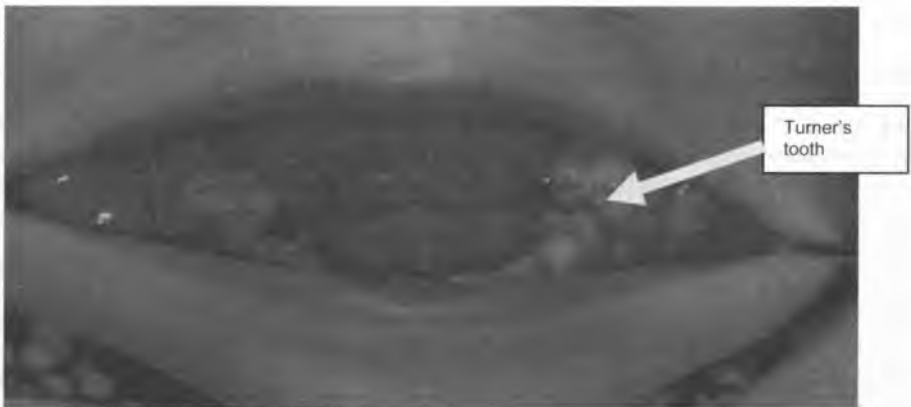


Fig. 2. Mandibular teeth

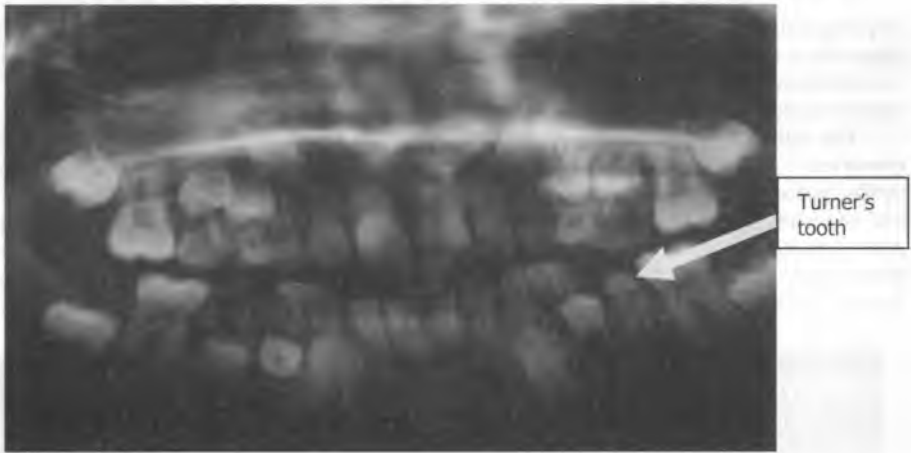


Fig. 3. Panoramic radiography

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## SUMMARY

Occurrence of various developmental disorders of hard dental tissues is a relatively frequent problem in pediatric dentistry. In this study, local hypoplasia of the second mandibular premolar has been described. The defect resulted from chronic periapical periodontitis of the second deciduous molar. Comprehensive conservative-surgical-orthodontic treatment taking the principles of esthetic dentistry into account has also been presented in the study.

## Zaburzenia mineralizacji twardych tkanek zębów – ząb Turnera. Opis przypadku

Występowanie różnorodnych zaburzeń rozwojowych twardych tkanek zębów jest problemem, z którym lekarz pedodonta spotyka się relatywnie często w praktyce klinicznej. W pracy opisano hipoplazję miejscową dotyczącą drugiego przedtrzonowca zuchwy, powstałą w związku z przewlekłym toczącym się zapaleniem przyzębia okołowierzchołkowego drugiego zęba trzonowego mlecznego. Przedstawiono również zintegrowane leczenie zachowawczo-chirurgiczno-ortodontyczne z uwzględnieniem zasad stomatologii estetycznej.