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## **An odontoma causing a delay in teeth eruption in an 11-year old boy. Case report**

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**Abstract:**

Odontomas are the benign tumors, which are usually discovered by chance in radiographic images taken because of anomalies such as delayed eruption of teeth or malocclusion. Case study shows the course of diagnosis of an asymptomatic odontoma in youth, followed by a failure in teeth development.

**Keywords:** odontoma, teeth development, odontogenic tumor

**Introduction:**

Odontogenic tumors are rare neoplasm of mandible and maxilla that differentiate into tooth structures[1]. Classified as changes, which were formed from various tissues of tooth, e.g. pulp, enamel, dentina, cementum[2]. The etiology is unknown, however, some authors list potential causes such as inflammation, injuries during odontogenesis and genetic disorders (Gardner and Herman syndrom)[3]. The permanent dentition is much more frequently affected [4].

Odontomas are benign changes, which account for 7% of all oral pathologic lesions found in children and adolescents[5] and show no gender predilection[1,6]. Two main types recognized by WHO classification from 2005 are distinguished: an odontoma- complex type (OC) and odontoma- compound type (OCp)[6]. The OC type occurs mostly in the posterior part of mandible and production of enamel and dentin is not enough to develop into an actual tooth[1,6]. The OCp is defined as tumor like malformation (hamartoma) with varying number of tooth like elements(odontoids), more commonly occurring in the anterior parts of maxilla[6]. Both tumors are diagnosed among children and adolescents[6]. Histologically, compound odontomas are presented as tooth-like structures similar to pulp, surrounded by dentinal tissues and partially covered with enamel[7]. Radiographically, they depict several small, well-defined, rudimentary teeth, surrounded by a radiolucent halo made from fibrous capsule. In this structure, teeth are dwarfed and malformed, having simple roots[2].

On the contrary, complex odontomas composed of dentin, enamel and pulp tissues are arranged in haphazard way in histological findings. In Radiographic features it is presented as an irregular mass with no similarity to dental structures. Additionally radiological findings enables to evaluate a development stage due to calcification process [8].

The most common localization of odontoma is anterior maxilla, where area of incisors and canines are impacted most frequently [4].

**Case report:**

An 11-year-old patient was admitted to the Maxillofacial Surgery Clinic, Medical University of Lublin. The reason of the first doctor's visit was a delay in eruption of permanent teeth. In June 2017 a cone beam computed tomography (CBCT) was performed, which revealed an odontoma-like change with dimensions 10,3x8,6x9,2mm localized in the alveolar process of maxilla.



**Pic.1** Odontoma in CBCT scan

A physical examination performed on admission day, showed no externally visible changes. In the internal examination of oral cavity a tough, palpable change of tooth 11 to 13 area was observed, covered by unchanged mucous membrane. The research has proved a scarcity of permanent teeth in areas 12 to 13 of alveolar process.

An odontoma-like change was removed during a one day surgery in general anesthesia. A lesion was excised completely from an intraoral passage, with the incision of alveolar process. A wound was provided with stiches and pharmacological treatment –Ampicilin 2x0,5g was implemented. An excision was sent to the histopathological research. After the intervention there were no complications. Next day the patient was discharged from hospital in a general good condition with indications of liquid diet, increased oral cavity hygiene and next week's control visit in an outpatient clinic.

### **Discussion:**

Pathologic changes are mainly painless, sometimes may be accompanied by swelling of a maxilla/mandible or displacement of adjacent teeth.[6] They are usually revealed by

radiographs taken by chance in teeth eruption or jaw's enlargement. Both compound and complex odontomas are approached through intraoral mucosal incisions, which may permit the eruption of tooth blocked by the lesion.[8]

According to metaanalysis based on 3065 odontomas cases obtained from a literature review, the most frequent clinical manifestations were delayed eruption of permanent teeth (in 55.4% of the patients); swelling (14%); the persistence of temporal teeth in the mouth (in 12.7); agenesis of permanent teeth (7.2%); pain (4%); infection or inflammation (3.3%); dental malpositioning (1.1%); and other non-specified manifestations (2.3%) [3].

In the differential diagnosis ameloblastic fibroma, ameloblastic fibroodontoma and odontoameloblastoma must be taken into consideration [3].

Treatment consists of a complete excision of the tumor with removal of the conjunctive tissue capsule that surrounds it. During surgery samples for the histo-pathological study are preparers that will support an accurate diagnosis. The prognosis is good [9]. The relapse rate increases when operation is performed during first stage of calcification [9].

The forgoing case study's description has confirmed that odontomas are mainly asymptomatic tumors and showed how important is regular internal oral cavity examination, especially among children and adolescents in order to prevent failures in teeth development and eruption.

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