CASE REPORT

Treatment of Complex Mandibular Odontoma in a Child: A Clinical Case

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Abstract

Introduction: Among the neoplasms of the jaw bones, odontomas occupy a special place, which is due to the lack of consensus on the origin, variety of clinical manifestations, morphological structure. In the conditions of the growth of the facial skeleton, these moments can cause late diagnosis and, accordingly, violations of the eruption of permanent teeth, displacement of dental rudiments, the presence of pronounced deformation of the jaw bones.

Diagnosis of odontoma is currently considered one of the most difficult tasks of modern dentistry. Knowledge of the basic diagnostic criteria makes it possible to distinguish this pathology from other diseases, which will contribute to timely successful treatment.

Case Presentation: A clinical case of a complex odontoma localized on the lower jaw on the left, diagnosed in a patient aged 3 years, is presented. Her treatment was performed surgically under general anesthesia. After 1 year, there is a complete restoration of the bone structure in the area of surgical interventions.

Conclusion: The clinical case demonstrates the need for regular examinations by a pediatric dentist, X-ray examination of the jaws in order to timely identify abnormalities in the development of the child's dental system, diagnosis and treatment of malformations and tumors in children.

Keywords: complex odontoma, radiograph, surgical removal

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Introduction

Neoplasms of the jaw bones – one of the important sections of surgical dentistry and maxillofacial surgery in children.[1] Currently, there is a high frequency of such a tumor disease of the maxillofacial region as odontoma.[2] The neoplasm can be localized in any part of the upper or lower jaw.[3] The frequency of its occurrence in children is lower than in adults.[4] The reason for this is the slow asymptomatic growth of the odontoma.[5,6] Unlike adults, the removal of this tumor in children should be carried out immediately after its diagnosis, since further development of the neoplasm can lead to such consequences, as a violation of the formation and eruption of permanent teeth, displacement of dental rudiments, a change in the position of teeth in the dentition, thinning of the cortical plate of the jaw bones.[7,8] That is why much attention should be paid to the timely detection of this disease, its monitoring at any age in order to prevent complications.

Case Presentation

A 3-year-old patient was admitted to the department of pediatric dentistry and orthodontics with complaints, according to her mother, of swelling of the gums in the lower jaw area on the left, which her mother noticed 1 week before going to the doctor. Transferred and concomitant diseases: the child is registered with a neurologist (tonus disorder syndrome), an oculist. An allergic reaction to the drug "Actovegin" was observed in the anamnesis. The general condition of the child at the time of the examination is satisfactory.

The configuration of the face is not changed, regional lymph nodes without signs of inflammation. The dental formula corresponds to the age. There are no teeth 55 and 75 in the dentition. In the retromolar region behind the tooth 74 there is a deformation of the alveolar process, passing to the vestibular surface, 1.5 cm in diameter, of a dense elastic consistency, covered with an unchanged mucous membrane, painless on palpation. After the X-ray examination, it was not

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possible to diagnose the disease due to the superimposition of many shadows on each other. A tomographic examination (CBCT - cone-beam computed tomography) was performed (Figure 1).

A nonhomogeneous radiopaque mass surrounded by a thin X-ray transparent line was revealed on the CBCT study. The formation is closely related to the rudiment of tooth 75, which is at the stage of root formation. Perforation of the lingual cortical plate was revealed. Interestingly, the absence of dental rudiments 15, 25, 35, 45 is determined radiologically, which confirms the relationship of the development of odontoma with a violation of the formation of dental rudiments and

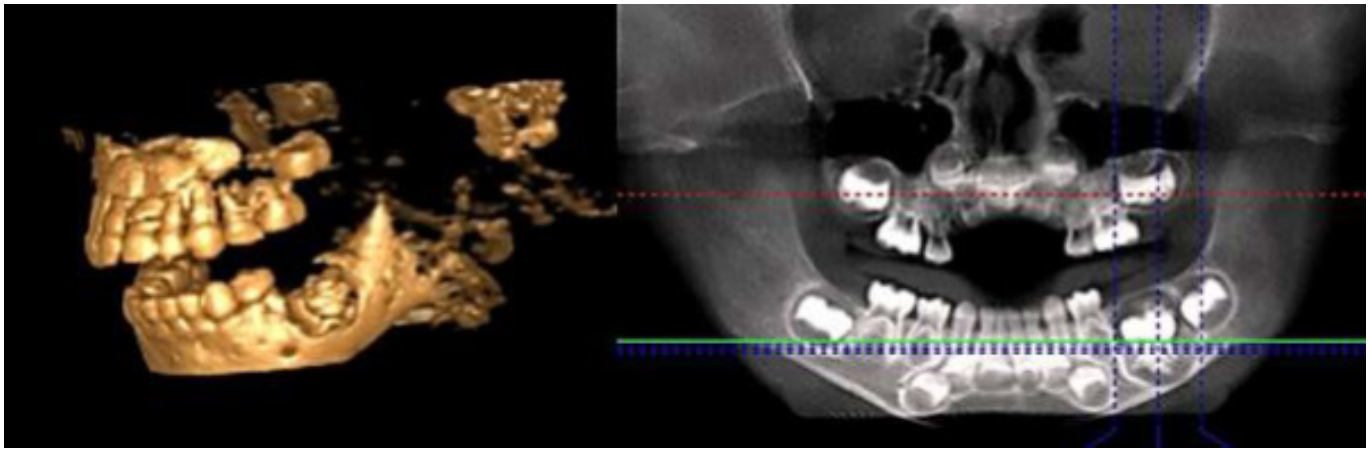

Fig. 1: Data from the CBCT study of a 3-year-old patient; diagnosis of a complex mandibular odontoma on the left

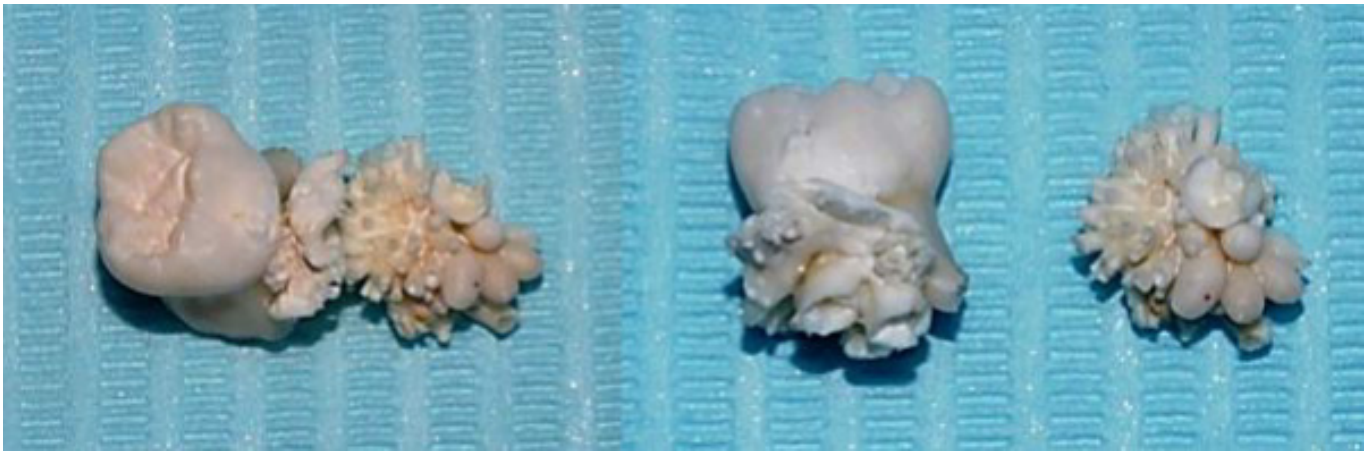

Fig. 2: Macroscopic surgical (operating) material

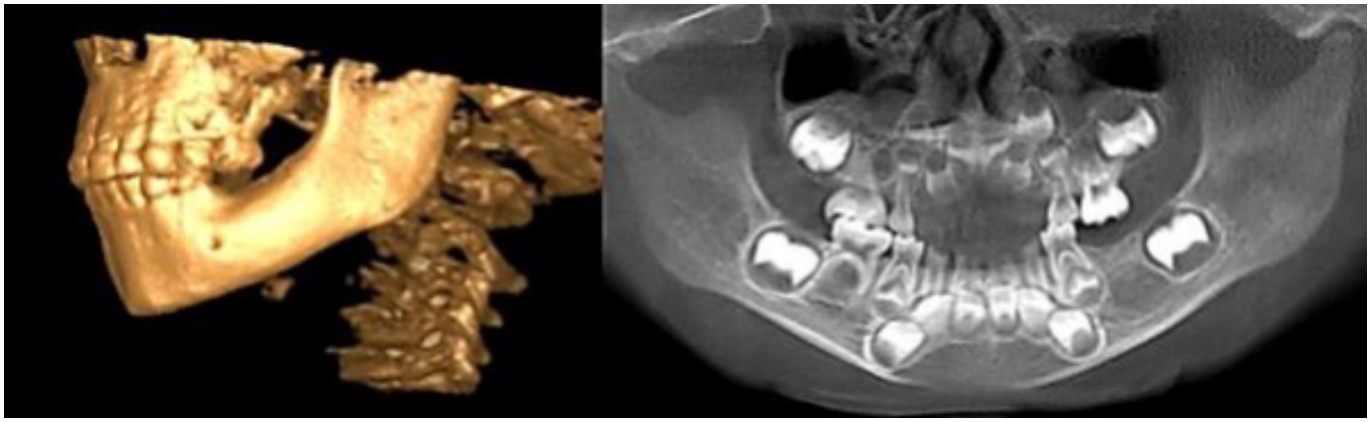

Fig. 3: Repeated CBCT examination of a 3-year-old patient 12 months after removal of a complex mandibular odontoma on the left

can indirectly serve as confirmation of the presence of a common etiological factor of their development. A preliminary diagnosis was made: A complex odontoma of the lower jaw on the left. Anomaly of the number of teeth. A plan of therapeutic and preventive measures has been drawn up: 1. Removal of odontoma under general anesthesia in a hospital. 2. Dispensary observation with repeated X-ray control after 1 year. 3 Treatment by an orthodontist. Treatment was carried out in a hospital setting.

Intraoral access was created under general anesthesia. The formation was completely enucleated together with the second milk molar. After thorough scraping, the wound was treated with an iodoform gauze swab. On the basis of clinical and X-ray examination, as well as examination of the material obtained during the operation, the diagnosis was clarified: Complex mandibular odontoma. (Figure 2)

The gauze swab was changed once a week for one month. Intraoral healing took place without complications. After the intervention, anesthesia or paresthesia was not observed in the areas innervated by the lower alveolar nerve. The child was placed on dispensary registration. The bone defect fully recovered after 6 months. After 1 year, repeated computed tomography was performed. The images show a complete restoration of the bone structure in the area of surgical interventions (Figure 3). Further treatment of this child will be carried out by an orthodontist.

Discussion

Complex odontomas account for about 22% of the total number of odontogenic tumors, being one of the most common tumors in this group of neoplasms.[9,10] The main method for diagnosing odontoma is X-ray examination. On an X-ray image, a complex odontoma is represented as a volumetric inhomogeneous dense shadow with uneven edges or in the form of small structures resembling teeth. Along the periphery, this formation has a zone of enlightenment, which passes into a limited sclerosed bone tissue.[11] The origin of the complex odontoma is unknown. There are several ideas about the origin of the odontome. According to Fomanko and co-authors, an odontoma is a malformation of one or more rudiments of teeth, which consist of epithelial or mesenchymal tissues representing a mixed odontogenic tumor.[12] According to Mirzoev and co-authors, odontomas are exclusively a tissue anomaly of development, as mesenchymal and epithelial cells can also be found in the structure of healthy tissues.[13] Pan'kevych and co-authors said that odontomas develop as a result of genetic mutations.[14] In a study by Sushchenko and co-authors, they found, that odontomas developed as a result of a trauma to the jaw tissues.[15] Odontoma occurs most often among young people, and rarely in old age. According to our observations, odontoma was more common in children during the period of a changeable bite from 6 to 12 years. The reason for going to the dentist was most often the retention of permanent teeth, less often – this neoplasm was an accidental radiological finding.

Treatment of odontoma consists in peeling the tumor together with a connective tissue capsule. After removal of the tumor, it is desirable to fill the bone cavity with an osteotropic substance. The prognosis is favorable.

Conclusion

In general, odontomas are common, but complex odontomas are rare and have large sizes that can lead to facial asymmetry. Surgical removal of an odontoma is the treatment of choice. Dentists should have sufficient knowledge to diagnose and treat such lesions at an early stage.

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