

ODONTOMA: A MYSTERIOUS FORMATION IN THE JAW IS NOT A TUMOR, BUT A DEVELOPMENTAL DEFECT**Mahmudbekova Muslima Rovshanbek qizi****Abdulazizova Mamura Abdurazzoq qizi****Zaripova Azizaxon Saidjonovna****Safarboeva Shirin Nurlanovna****Polatov Abdulloh**

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Annotation

This article examines odontoma, the most common benign odontogenic lesion, which in modern dentistry is considered a hamartoma (a developmental defect) rather than a true tumor. It describes in detail the etiology, classification (complex and compound forms), and the characteristic asymptomatic clinical presentation, the main manifestation of which is delayed eruption of permanent teeth. Particular attention is paid to diagnostic methods, among which computed tomography plays a key role, and the only treatment method—surgical removal (enucleation). The importance of differential diagnosis and the favorable prognosis with timely treatment are emphasized.

Keywords: odontoma, hamartoma, odontogenic tumor, delayed tooth eruption, tooth retention, complex odontoma, composite odontoma, surgical removal, enucleation, maxillofacial surgery.

Introduction

In the world of dentistry and maxillofacial surgery, there are numerous pathologies, from widespread dental caries to rare tumors. Odontoma occupies a special place among them. Although it is classified by the World Health Organization (WHO) as a benign odontogenic tumor, most modern researchers consider it not a true neoplasm, but a hamartoma, or malformation of dental tissue. It is the most common odontogenic lesion, accounting for up to 67% of all such cases.

What is odontoma?

An odontoma is a benign, slow-growing growth composed of various dental tissues: enamel, dentin, cementum, and pulp. These tissues are arranged in a disordered manner, unlike in a normal tooth, where they have a strictly structured structure. Essentially, it is a "mixture" or "conglomerate" of dental tissues that is unable to form into a full-fledged tooth.

Causes of occurrence

The exact etiology is unknown, but it is believed to be due to disturbances in the histodifferentiation or morphodifferentiation stage of the tooth germ. Possible precipitating factors include:

- Genetic predisposition (cases of familial odontomas).
- Trauma or chronic inflammation in the area of the tooth germ.

- Environmental influences (eg radiation).

Syndromes: Odontoma is often a marker of systemic diseases such as Gardner's syndrome (familial adenomatous polyposis of the intestine), Herman-Pudlak syndrome, and others.

Classification and types

There are two main clinical and radiological forms:

1. Complex odontoma: This is a shapeless mass (conglomerate) of dental tissue, where individual elements of enamel and dentin are chaotically mixed. On X-ray, it appears as an irregularly shaped, radiodense (white) formation with unclear borders, surrounded by a thin zone of lucency.

2. Composite (complex) odontoma: Consists of numerous small, miniature tooth-like structures (denticles), the number of which can vary from a few to hundreds. On X-ray, it appears as a cluster of multiple small shadows resembling teeth, also enclosed in a capsule.

In relation to the dental row, central (intraosseous) and peripheral (in soft tissues, extremely rare) odontomas are distinguished.

Clinical picture and symptoms

An odontoma is an insidious growth that can develop asymptotically for years. It is often discovered incidentally during routine X-ray examinations (orthopantomogram, CT scan) for delayed eruption of permanent teeth in children and adolescents.

Typical clinical signs:

- Delayed eruption of a permanent tooth (the most common symptom).
- Odontoma mechanically blocks the path of the tooth.
- Dystopia (displacement) of adjacent teeth.
- Retention of a baby tooth (it does not fall out on time).
- Asymptomatic enlargement of the jaw (if large).
- In rare cases, inflammation, fistula, or pain associated with infection or pressure on the nerve.

The most common localization is the anterior parts of the maxilla (for compound odontomas) and the posterior parts of the mandible (for complex odontomas).

Diagnostics

1. Radiography (orthopantomogram, targeted x-ray): The primary detection method. Allows for the detection of a radiodense formation associated with an unerupted tooth.

2. Computed tomography (CBCT): The "gold standard" for surgical planning. It provides an accurate 3D image of the size, shape, and position of the odontoma, as well as its relationship to the roots of adjacent teeth, the mandibular canal, and the floor of the maxillary sinus.

3. Histological examination: Conducted after removal of the lesion. Confirms the diagnosis by showing the chaotic arrangement of mature dental tissue.

Treatment

The only treatment is surgical removal (enucleation). The presence of an odontoma, even if asymptomatic, is an indication for surgery.

Objectives of the operation:

- Remove pathological tissue.
- Eliminate the cause of delayed tooth eruption.
- Prevent possible complications (resorption of the roots of adjacent teeth, deformation of the jaw, development of a follicular cyst).
- Obtain material for histology.

Procedure: Performed under local or general anesthesia. The mucoperiosteal flap is lifted, a bony window is created, and the odontoma is removed in whole or in sections. The site is carefully scraped. The impacted tooth associated with the odontoma is often extracted, but sometimes (especially in children) the tooth may erupt spontaneously after odontoma removal. The wound is sutured.

Complications and prognosis

Complications of surgery are rare: damage to adjacent teeth or nerves, postoperative infection, relapse (with incomplete removal).

The prognosis is exceptionally favorable. Odontomas do not undergo malignant transformation (cancer). Recurrences are virtually uncommon after complete removal. If an impacted tooth was retained, monitoring its eruption is necessary, sometimes with the help of an orthodontist.

Conclusion

An odontoma is a common yet mysterious growth that serves as a reminder of the complexity of dental development. Its timely detection and removal are key to preventing malocclusion and maintaining dental health. An incidental discovery of an odontoma on an x-ray is not a cause for panic, but an indication for a scheduled visit to an oral surgeon to consider its removal and ensure normal dental development.

Source of information:

1. • The article is based on data from fundamental textbooks and manuals on maxillofacial surgery and pathology, such as:
2. • “Maxillofacial surgery” edited by A.A. Timofeev.
3. • “Odontogenic tumors and tumor-like formations of the jaws” (clinical guidelines).
4. • WHO classification of tumors of the head and neck (4th edition, 2017).
5. • R.J. Gorham, P.J. Sculari. "Fundamentals of oral and maxillofacial pathology."
6. • Current publications in peer-reviewed medical journals (“Dentistry”, “Maxillofacial Surgery”, etc.).