pISSN:2349-5707 Volume:13,Issue 4, April -2026 eISSN:2349-5715

AMELOBLASTOMA: THE MOST COMMON ODONTOGENIC TUMOR – FEATURES OF DIAGNOSIS AND TREATMENT

TULANBAYEV FAYZULLO SHUXRATBEK O'G'LI

Assistant of therapeutic dentistry department at Kimyo International University

XUDOYBERGANOVA NILUFAR ALISHEROVNA

PO'LATOV ABDULLOH ANVAR O'G'LI

MIRXOSILOVA MUSLIMA MIRJAMOL QIZI

ORIFJONOVA MUMTOZABEGIM OLIMJON QIZI

Annotation

This article examines ameloblastoma, the most common benign but locally aggressive odontogenic epithelial tumor of the jaws. Its clinical and radiographic forms (follicular, plexiform, desmoplastic, etc.) are described in detail, along with their characteristic slow but infiltrative growth, leading to asymptomatic jaw deformity. Particular attention is paid to diagnostic methods, with computed tomography (CT) playing a key role in assessing the true tumor boundaries. The primary focus is on surgical treatment, including the principles of choosing between resection and enucleation, and the importance of achieving clean resection margins to prevent recurrence. The complexity of prognosis due to the high susceptibility to recurrence and the need for long-term follow-up are emphasized.

Keywords: ameloblastoma, odontogenic tumor, benign tumor of the jaw, locally aggressive tumor, cystic form, solid form, jaw resection, relapse, maxillofacial surgery, histological picture.

Introduction

Ameloblastoma occupies a special and significant place among maxillofacial tumors. It is the most common benign odontogenic epithelial tumor. Despite its histological benignity, it is characterized by locally destructive growth, capable of causing significant jaw deformation, tooth root resorption, and cortical plate thinning. This characteristic makes it a serious clinical problem, requiring a radical surgical approach and a clear understanding of its biological behavior.

What is ameloblastoma?

Ameloblastoma is an odontogenic epithelial tumor, histologically resembling enamel tissue in the early stages of tooth development. Unlike odontoma, it is a true neoplasm (tumor) capable of infiltrative growth in the cancellous bone, which explains its tendency to recur with insufficient surgical intervention. It most often occurs between the ages of 30 and 50, predominantly localizing in the mandible (more than 80% of cases), particularly in the angle and ramus.

Classification and types

Classification of ameloblastoma is based on clinical, radiological and histological features.

According to the clinical and radiological picture:

pISSN:2349-5707 Volume:13,Issue 4, April -2026 eISSN:2349-5715

1. Cystic (polycystic) form: More common. On x-ray, it appears as a multi-chambered "soap bubble" or "honeycomb" cyst with distinct sclerotic edges. It can be unicameral, mimicking a radicular or follicular cyst.

2.Solid (massive) form: Occurs less frequently, has less clear boundaries and a more aggressive course.

By histological structure (WHO):

• Follicular type: Islands of epithelium in connective tissue stroma.

• Plexiform type: Intertwined strands of epithelium.

• Acanthomatous type: Presence of squamous cell metaplasia with keratinization.

• Granular cell type: Presence of granular cells in the cytoplasm.

• Basal cell type: Resembles basal cell carcinoma of the skin.

Desmoplastic ameloblastoma: A special form with dense fibrous stroma, more often in the anterior parts of the jaws, can radiographically resemble fibrous dysplasia.

Clinical picture and symptoms

Ameloblastoma is characterized by slow, asymptomatic growth over many years, leading to late diagnosis.

Typical clinical signs:

• Painless thickening or deformation of the jaw is the main symptom. The patient or doctor notes facial asymmetry.

• Loosening of teeth in the tumor area.

• Malocclusion.

• Paresthesia of the lower lip (numbness) is a late and ominous sign indicating pressure from the tumor on the mandibular nerve (if localized in the lower jaw).

• Perforation of the cortical plate with the formation of a “bone drum” (on palpation - crepitus, bending of the thinned bone).

• If infected – pain, inflammation, fistula.

Diagnostics

1. Radiography (orthopantomogram): The primary detection method. Characterized by multilocular radiolucencies with clear, sometimes sclerotic, edges, often associated with an unerupted tooth (usually a wisdom tooth). Root resorption of adjacent teeth is possible.

2. Computed tomography (CT, CBCT): A critically important step. Allows for an accurate assessment of:

• 3D volume and boundaries of the tumor.

• Condition of the cortical plates (thinning, perforation).

pISSN:2349-5707 Volume:13,Issue 4, April -2026 eISSN:2349-5715

• Relation to the mandibular canal, the bottom of the maxillary sinus, the base of the skull.

• Intraosseous architecture (partitions, “soap bubbles”).

3. Cytological examination of the puncture: Can be useful (straw-colored liquid with cholesterol crystals), but not always informative.

4. Histological examination (biopsy): The gold standard for diagnosis verification. An incisional biopsy (removal of a tumor fragment) is performed to determine the histological type before planning the extent of surgery.

Treatment

Treatment for ameloblastoma is exclusively surgical. The choice of surgical extent is a key factor determining the risk of recurrence.

Principles of surgical treatment:

Enucleation (excision) with cryotherapy or phenolization of the tumor bed: This is rarely used and only for small cystic tumors (up to 1-2 cm) with intact cortical tissue in young patients. It carries a high risk of recurrence (55-90%).

Jaw resection within healthy tissue: The primary treatment method. The tumor is removed, including at least 1-1.5 cm of visually intact bone beyond the tumor. This is the only way to completely remove tumor growths that penetrate the bone trabeculae.

Resection without disrupting the continuity of the jaw (marginal resection): While preserving the lower edge of the mandible.

Segmental resection: With complete removal of a section of the jaw.

Urgent or delayed bone reconstructive intervention: To restore the shape and function of the jaw after resection, autochthonous bone grafts (from the ilium, fibula) or reconstructive plates are used.

Complications and prognosis

The main and common complication is recurrence. Its risk directly depends on the adequacy of the initial surgery:

• After enucleation – 55-90%.

• After resection – 10-15%.

Other complications: damage to the mandibular nerve, pathological fracture of the jaw, suppuration, relapse with malignancy (extremely rare, into ameloblastic carcinoma).

The prognosis is favorable, as the tumor does not metastasize. However, the prognosis for function and quality of life depends on the timeliness of diagnosis and the thoroughness of the initial surgical intervention. Lifelong follow-up (clinical examination, X-ray) is mandatory.

Conclusion

Ameloblastoma presents a complex clinical challenge for maxillofacial surgeons. Its insidious nature lies in its asymptomatic course and infiltrative growth. Current approaches require aggressive primary surgery (resection of healthy tissue), as this is the most effective way

pISSN:2349-5707 Volume:13,Issue 4, April -2026 eISSN:2349-5715

to prevent multiple recurrences and severe deformities. Timely diagnosis using CT and adequate surgical treatment are key to a successful outcome and maintaining the patient's quality of life.

Source of information: The article is based on data from fundamental textbooks and manuals on maxillofacial surgery, oncology and pathology, such as:

• “Maxillofacial surgery” edited by A.A. Timofeev.

• “Tumors of the head and neck” edited by V.I. Chissov, S.L. Daryalova.

• WHO classification of tumors of the head and neck (4th edition, 2017).

• R.J. Gorham, P.J. Sculari. "Fundamentals of oral and maxillofacial pathology."

• National clinical guidelines for the diagnosis and treatment of odontogenic tumors of the jaws.