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CHORISTOMAS AND TERATOMAS OF ORAL CAVITY

Dr. Sona Baburathinam[1], Dr. Vidyrani Shyamsundar[2], Dr. Aravindha Babu.N[3], Masthan.K.M.K[4]

[1]Postgraduate, Department of Oral Pathology and Microbiology, Bharath Institute of Higher Education and Research, Sree Balaji Dental College and Hospitals.

[2]Professor, Department of Oral Pathology and Microbiology, Center for Oral Cancer Prevention Awareness and Research, Bharath Institute of Higher Education and Research, Sree Balaji Dental College and Hospitals.

[3]Professor, Department of Oral Pathology and Microbiology, Center for Oral Cancer Prevention Awareness and Research, Bharath Institute of Higher Education and Research, Sree Balaji Dental College and Hospitals.

[4] Professor & Head of the Department, Department of Oral Pathology and Microbiology, Center for Oral Cancer Prevention Awareness and Research, Bharath Institute of Higher Education and Research, Sree Balaji Dental College And Hospitals.

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Address for Correspondence: Dr. Sona Baburathinam, Postgraduate, Department of Oral Pathology and Microbiology, Bharath Institute of Higher Education and Research, Sree Balaji Dental College and Hospitals. Tamilnadu, Chennai-600100

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ABSTRACT:

A cohesive tumor-like mass consisting of normal cells in an abnormal location constitutes a choristoma, while teratomas are considered as true neoplasms, consisting of tissues derived from all three germ layers. The occurrence of these lesions in the oral cavity is rare. They are considered in the differential diagnosis of reactive and benign lesions that commonly occur in the oral cavity. This article provides an overview of the various choristomas and teratomas that can occur in the oral cavity.

Introduction

Choristomas are aggregates of histologically normal cells or tissues present in aberrant locations. Teratomas are composed of tissues from all three germ layers that exhibit varying levels of maturity. The non-salivary epithelial choristomas occur commonly in the tongue, while the tongue is an uncommon site for teratomas. Various types of choristomas and teratomas occur in the oral cavity [1].

Choristomas of the oral region:

Choristomas of the oral region have been classified by Chou et al [2]. The classification was based on the various types of tissue recognized at light microscopic level.

1. Salivary gland choristoma
a. Central
b. Gingival
2. Cartilaginous choristoma
3. Osseous choristoma
4. Lingual thyroid choristoma
5. Lingual sebaceous choristoma
6. Glial choristoma
7. Gastric mucosal choristoma
a. Cystic
b. Solid

Ectopic lymphoid tissue that occurs in the oral cavity is considered a component of lymphoepithelial cyst and is thus excluded. Similarly, oral lesions having respiratory mucosa are regarded as a form of metaplasia and thus excluded [3-6].

1. Salivary gland choristoma:

It is an aberrant salivary gland tissue that presents as a tumor-like mass. Most of them commonly present as an indentation on the mandibular lingual surface or as a pedunculated mass that extends through a perforation in the mandible with a connection to the submandibular or sublingual

gland [7-9]. They were termed as “static bone cyst”, “salivary gland inclusion in the mandible”, “aberrant salivary gland defect” [10-12]. Few lesions are located on the attached gingiva and termed “gingival salivary gland choristoma” [13,14]. Lesions are classified as ‘central’ or ‘gingival’ depending on their location.

The central salivary gland choristoma occurs as a solid mass of salivary tissue enclaved within the mandible, with no evidence of connection with the submandibular or sublingual glands. They occur in the anterior mandible. They appear as well-circumscribed radiolucencies with sclerotic borders. The possible origin includes:

a. Mucous metaplasia of the epithelial lining of odontogenic cyst [15]

b. Embryologically entrapped retromolar mucous salivary tissue [16].

The gingival choristoma occurs as an asymptomatic, solitary mass in the buccal or lingual gingiva with no bone involvement. The first reported case was by Moskow and Baden, 1964 [13]. The proposed possibilities [14, 17] of origin include:

a. Developmental displacement of minor salivary gland tissue

b. Metaplasia from multipotent gingival epithelium.

2. Cartilaginous choristoma:

Masses of differentiated cartilage are reported to occur in the tongue, buccal mucosa and soft palate [18-21]. Microsopically, they are composed of a tumor-like mass of hyaline cartilage surrounded by dense, fibrous connective tissue, suggesting perichondrium, by loose fibrous connective tissue or by myxoid tissue, suggesting primitive mesenchyme. Chondrocytes within the lacunar spaces may be small or large. The cartilage is commonly more mature at the center of the mass compared to the periphery. Cartilaginous choristomas must to be differentiated from extra-skeletal chondrosarcomas as the latter have cellular pleomorphism, giant cells and lack well-differentiated hyaline [22].

3. Osseous choristoma:

It was described by Krolls [23] et al as a tumor-like mass of normal, mature lamellated bone occurring in the soft tissue of the oral cavity. They are known by other names such as “osteoma mucosae” or “soft tissue osteoma”. They commonly arise on the dorsum of the tongue, posteriorly, near the foramen caecum or circumvallate papillae. Other sited include mid-dorsal area of tongue, lingual alveolar mucosa of anterior mandible and buccal vestibule [24-27]. They occur as a sessile or pedunculated mass and are asymptomatic. Microscopically, they contain lamellated vital bone with haversian canals surrounded by dense fibrous tissue. Surface is lined by stratified squamous epithelium. Osteocytes are seen within the lacunae.

4. Lingual thyroid choristoma:

It is a tumor-like mass that occur in the midline of the tongue between the foramen caecum and epiglottis. It occurs a s a round or hemispheric, semi-soft or firm mass, often lobulated but covered by intact mucosa. In most cases, the growth would be the only functioning thyroid tissue in the body when determined by thyroid scan techniques. Hypothyroidism is often associated with a unique functional lingual thyroid. Microscopically, embryonic or mature thyroid tissue is seen, with an incomplete or poorly defined capsule. Lymphocytic infiltration is common. When the patient is symptomatic and requires treatment, radioactive iodine 131 or thyroid hormone suppression is done to reduce the size of the glands [28-31].

5. Lingual sebaceous choristoma:

Sebaceous glands occur on the buccal, labial mucosa, retromolar area, gingiva and palate [32]. Occurrence on the tongue is considered ectopic [33]. It occurs on the posterior part of the dorsum of the tongue as a firm, asymptomatic, dome-shaped mass. They appear as small, yellowish aggregates. Microscopically, the lesions consist of lobules of well-differentiated branching sebaceous glands.

6. Glial choristoma:

It is a rare occurrence of mature brain tissue within the oral cavity. They are reported to occur on the soft palate, sometimes extending to the hard palate as a raised firm mass. Microscopically they consist of mature central nervous tissue elements. Astrocytes are identified are seen within masses of glial fibers [34,35].

7. Gastric mucosal choristoma:

They occur as a cystic or solid entity. The cystic lesion is lined partly by stratified squamous epithelium and partly by gastric mucosa and rarely by intestinal epithelium. Majority occur on the ventral surface of the tongue. Heterotopic gastric mucosa is thought to arise from misplaced embryonic gastric rests as during 4 weeks of intra-

uterine life, the undifferentiated primitive stomach lies in the mid-neck region, close to the tongue [36].
Solid lesions occur on the dorsum of the tongue, at the junction of anterior two-third and posterior one-third. They are composed of mucosa identical to that of fundus and body of stomach [37].

Teratomas of the oral region:

Teratomas are true neoplasms composed of multiple tissues that are foreign to the site from which they originate [38]. Oral teratomas are extremely rare, with most cases occurring on the tongue. While their histogenesis is still debatable, the most popular theory suggests that they arise from totipotent embryonic tissues that are displaced during ontogeny. There is alteration in cell membrane permeability. The synchronous presence of embryonal, fetal and adult elements is seen [39, 40].
Arnold's classification system [39]:
1. Dermoid tumors: most common form composed of ectoderm and mesoderm.
2. Teratoid tumors: Poorly differentiated lesions composed of all three germ layers.
3. True teratomas: Histologically identifiable tissue from all three germ layers. They may be solid or cystic.
4. Epignathus: Also known as 'fetus in fetu' or 'parasitic fetus'and contains fetal organs. It is a misnomer and its etymological meaning is 'upon the jaw'.

These tumors are histologically benign with no evidence of malignancy. They should be differentiated from an epidermoid cyst composed of epidermal cells, a dermoid cyst that consists of ectodermal and mesodermal derivatives, a teratoid cyst, that is a poorly differentiated tumor composed of all three germ layers and an epignathus, with presence of developmental fetal organs and limbs. Teratomas commonly tend to be midline lesions, though they clinically present as being prominent on one side. Surgical excision is the treatment of choice.

Conclusion:

Occurrence of choristomas and teratomas in the oral region, though uncommon, is not rare. They should be considered in the differential diagnosis of the common reactive and benign lesions of the oral cavity. Early and precise microscopic diagnosis aids in surgical excision to avoid discomfort. Recurrences are extremely rare.

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