

# Osseous Choristoma of the Oral Cavity: A Rare Entity Review

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## ABSTRACT

Osseous choristoma being a benign lesion is an entity rarely seen in the oral cavity. These are usually well-circumscribed proliferations of histologically normal tissue found in abnormal locations. They are usually composed of compact bone with haversian systems. The etiology is considered to be developmental malformation or reactive. The most common site being the tongue and other sites being buccal mucosa as well. Through this article, we have tried to highlight various features that would aid in correct diagnosis and treatment planning of this rare lesion.

**Key words:** Bone, lesions, osseous, tumor

## INTRODUCTION

The term osseous choristoma was given by Krolls *et al.* in 1971.<sup>[1]</sup> Osseous choristoma is a term used to describe the growth of a tumor-like mass of normal bone in an abnormal position.<sup>[1]</sup> “Cutaneous ossification,” a dermal lesion suggested by Krolls *et al.*<sup>[1]</sup> is similar to, if not the same, as intra-oral soft-tissue osteoma. Osseous choristoma is a more suitable term to denote these lesions as it refers to histologically normal tissue occurring in an abnormal site whereas the term osteoma indicates a proliferation of bone involved with normal skeletal structures.<sup>[1]</sup> In his review, the age ranged between 9 and 73 years with five females and four males and in which majority of the lesions were pedunculate. Osseous choristomas are considered to be benign lesions.<sup>[2]</sup> Heterotopic tissue in the oral cavity

is however a rare entity, even though various types of tissue can be found there, including gastric, intestinal, colonic, respiratory, and neuroglial tissues, cartilage, and bone.<sup>[3]</sup> They are more commonly seen to occur in female patients with a female to male ratio of 1.4:1.<sup>[4]</sup> The most common site for osseous choristoma is the posterior third of the tongue.<sup>[5]</sup> Localization of these lesions in the buccal mucosa is relatively uncommon, and review of the literature has shown just 14 cases of osseous choristoma in the buccal mucosa.<sup>[6]</sup> Weitzner suggested that 80% of these lesions occur in women and patients <40 years old when he reported three new cases and reviewed 38 previously reported cases.<sup>[7]</sup> Lingual osseous choristoma is reported more commonly on the dorsal surface of the tongue; whereas Wesley and Zielinski (1978) reported a case of osseous choristoma on the ventral surface of the tongue.<sup>[8]</sup> Two types of osseous choristoma have been seen to occur on the tongue that is cartilaginous and the other being osseous. Other types of choristoma in the oral cavity include salivary gland choristoma, cartilaginous choristoma, oral osseous choristoma, lingual thyroid choristoma, lingual sebaceous choristoma, glial choristoma gastric and respiratory mucosa.<sup>[5]</sup>

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## PATHOGENESIS

Various theories have been proposed to explain its etiology. These theories can be divided into two main categories:

- a. The developmental malformation theory
- b. The reactive or posttraumatic theory.<sup>[9]</sup>

Montserrat was the first who proposed the developmental malformation theory and attributed the lesion's origin to the ossification of branchial arch remnants, basing his theory on the anatomic location of the lesion in the foramen caecum area.<sup>[10]</sup> The possibility of entrapment of mesenchymal pluripotential cells originate from these embryonic branchial arches, and subsequent development of an osseous lesion in the tongue seems an attractive theory for its origin. This theory is strongly supported by Begel *et al.*,<sup>[11]</sup> and Engel and Cherick.<sup>[12]</sup> Cataldo *et al.*<sup>[13]</sup> and Jahnke and Daly<sup>[14]</sup> have proposed a developmental theory, which is associated with remnant of thyroid tissue. Other theories include epignathous formation and that of degenerating fibroma undergoing the ossification.<sup>[15]</sup> The latter theory suggests that osseous lesions of the tongue represent a reactive or posttraumatic center of ossification.<sup>[16]</sup>

## DIFFERENTIAL DIAGNOSIS

The differential diagnosis of the lingual choristoma depends on the location of the lesion.<sup>[17]</sup> When the lesion is located near the foramen caecum, the most important condition that should be entertained is the presence of single or multiple foci of ectopic thyroid gland in the tongue and a thyroid function test may be required.<sup>[18]</sup> Hyperplastic lingual tonsil and salivary gland neoplasms should also be included in the differential diagnosis. When the lesion is located on the anterior and lateral aspect of the tongue, fibroma, granular cell tumor, neural tumor, and foreign body granuloma, should be considered. Lesions on the ventral surface of the tongue may resemble salivary gland neoplasms, mucous retention phenomena, lipomas, and neural tumors. When the lesion is pedunculated and has a verrucal surface, it may clinically resemble a papilloma.

## DIAGNOSIS

The diagnosis of the osseous lesion remains simple and can be done clinically and radio graphically,<sup>[19]</sup> which may be complemented by computed tomography,

scintigraphy or magnetic resonance imaging. Computed tomography remains more helpful compared to scintigraphy or magnetic resonance imaging due to its low cost, the immediate availability and the ease of diagnosis.<sup>[20]</sup>

## HISTOLOGICALLY

Histologically it is formed of mature lamellar bone with well-developed Haversian system and bone marrow spaces covered with mucosa, but real osteoblastic and osteoclastic activity is absent.

## TREATMENT

Surgical excision remains the first treatment of choice and recurrence of the lingual osseous choristoma has not been reported. However, recurrence has been reported for two buccal osseous choristomas while no recurrence has yet been found for lingual counterparts.<sup>[21,22]</sup>

## CONCLUSION

Osseous choristomas are rare benign lesions found in the oral cavity. Due to its most common location they may be misdiagnosed as some other lesion. They usually appear as a tumorous mass of normal bony structure with mature cells in an ectopic position. The etiology being development or reactive still remains debatable. This review focuses some important facts to be considered such that misdiagnosis of the lesion can be averted.

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