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Chondrolipoma Presenting as a Lump on the Lateral Tongue

Abstract: The oral cavity is an uncommon site for a true lipoma. A distinct histological variant is chondrolipoma, which is a rare oral lesion. A case of chondrolipoma in a 71-year-old male is reported and histology and differential diagnosis are discussed.

Clinical Relevance: An oral lump is a common presenting complaint and requires further investigation.

Dent Update 2011; 38: 188–190

Lipomas are one of the most common benign soft tissue neoplasms. They can occur at any site in the body. They contain adipose tissue and are usually found subcutaneously in the trunk and limbs. The oral cavity is a rare site for true lipomas and only a few cases of lipoma with cartilage formation have been reported in this region. These lesions have been called chondrolipoma (lipoma with chondroid metaplasia or lipoma with cartilaginous change). Cartilage is probably produced by metaplasia of fibroblasts into chondroblasts.

In this case, a chondrolipoma of the lateral border of the tongue in a 71-year-old male is presented. A differential diagnosis of lateral tongue swellings is given. The lesion is benign and does not recur after complete excision.

Case report

A 71-year-old Caucasian male was referred via his general medical

practitioner to the Oral and Maxillofacial Surgery Department at the Newcastle General Hospital for consultation regarding a painless lump in the right lateral border of the tongue. This was a suspected mucocele, which had been present for about 5 months, and some increase in size was noticed.

Medical history included type II diabetes, previous myocardial infarction and a malignant melanoma excised from the right side of the back three years previously. He was a non-smoker and did not consume any alcohol.

On clinical examination, a 1.5 x 1.5 cm pale, firm and discrete mass was seen, confined mainly to the right ventro-lateral tongue (Figure 1), palpable as two separate lumps within the same mass. The overlying mucosa was intact and there was no functional disturbance associated with the trigeminal nerve. A clinical differential diagnosis of fibroma, lipoma or a neurofibroma was made and an incisional biopsy carried out, which showed an unusual appearance on histopathology, with features of a bland fatty tumour with cartilage.

Excision of the lump was carried out under local anaesthesia and histological appearance was consistent with chondrolipoma of the tongue, showing a relatively well circumscribed and focally encapsulated lesion comprising lobules

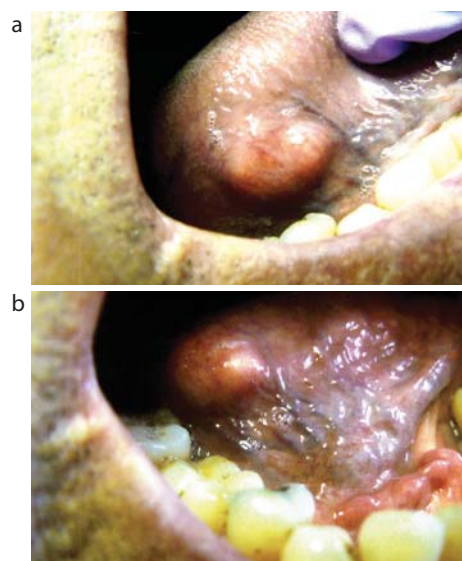


Figure 1. (a, b) A discrete pale lump with intact overlying mucosa in the right ventro-lateral tongue, adjacent to a slightly lingually-tilted lower second premolar tooth.

of mature adipose tissue separated by fibrovascular septae (Figure 2). The central part of the lesion contained mature cartilage. At the periphery, there was chronic inflammation and fat necrosis. No significant cellular atypia and mitoses were identified and features were similar to that of the incisional biopsy. The patient has made an uneventful recovery.

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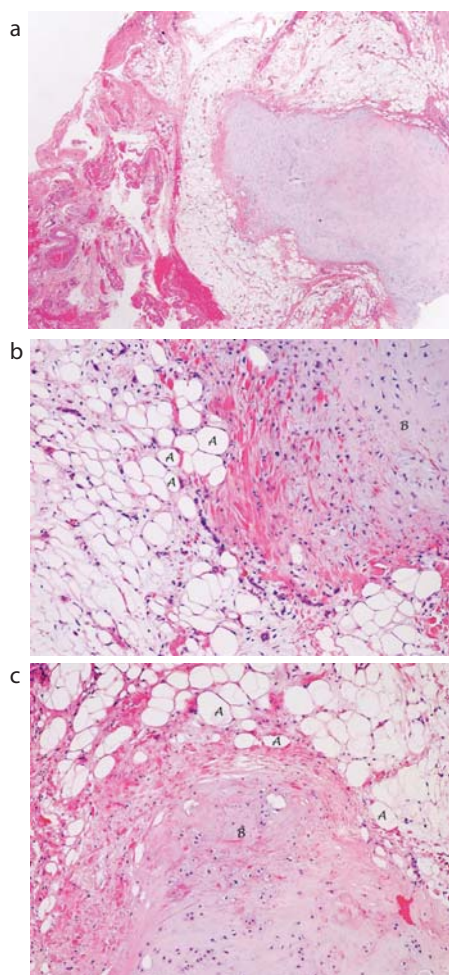


Figure 2. Photomicrographs of a chondrolipoma. (a) Low power magnification shows a well circumscribed lobule of mature adipose tissue that contains cartilage. Medium power magnifications showing some variation in adipocyte size (b) and cellular cartilage (c). There are no atypical cells or mitotic figures.

Review of literature

Historically, the term mesenchymoma was used to describe tumours containing at least two mesenchymal tissues not originally found together.¹ These tumours can be benign or malignant. The most commonly identified mesenchymal tissues are adipose tissue, blood vessels and smooth muscle in examples occurring in various anatomical locations,^{2,3} although cartilage and bone have been occasionally identified in the head and neck region.^{2,4}

To avoid confusion, it was

suggested in 2003 that the term mesenchymoma should be used strictly to describe an unencapsulated neoplasm composed of two or more mature mesenchymal tissues with no single mesenchymal tissue predominating at the expense of other tissues.² Conversely, if a soft tissue neoplasm is well demarcated or encapsulated and composed of a predominance of one mesenchymal element, along with one or more secondary elements, the diagnosis should reflect the predominant mesenchymal tissue present.²

Lipomas are common benign tumours of adipose tissue, 13% of lipomas arise in the head and neck and account for 2.2–4.4% of all benign oral tumours,⁵ the most common intra-oral site being the buccal mucosa.⁵

Histological variants have been described according to the type of tissue present, the most common variant being fibrolipoma.⁶ In lesions with an increased vascular supply, the term angioliipoma has been used.⁷ Lesions with deposition of osteoid have been called osteoliipomas.⁸ Other types include myxoliipoma, myoliipoma, spindle-cell lipoma,⁹ and pleomorphic lipoma.¹⁰

Chondrolipoma is a distinct histological variant, well known in the breast,¹¹ but only a few intra-oral cases have been reported in sites like the lip^{12,8} and tongue.^{13,14,15}

There is little in the literature relating to intra-oral chondrolipomas.

The cause of chondrolipoma is unknown. There are several theories as to its origin. One is that it is essentially a choristoma possibly arising from pluripotent cells sequestered during embryogenesis.¹⁴ Another possibility is that the tumour is essentially a chondroma or a lipoma with the accompanying chondroid or lipoid component arising as a metaplastic stromal reaction,¹⁶ possibly secondary to chronic trauma.¹⁷

The lesion in the reported case can possibly be attributed to chronic trauma due to irritation from the lingual cusp of a lingually tilted lower second premolar, as the lesion was in close proximity to the tooth and histological sections were suggestive of secondary change due to chronic irritation.

Differential diagnosis

There are several possible causes of lumps on the lateral border of the tongue (Table 1), trauma being the most common aetiological factor.

A fibro-epithelial polyp is a soft tissue lump which arises as a result of epithelial and connective tissue hyperplasia secondary to chronic irritation and is not classed as a neoplasm. The polyp is sessile or pedunculated and has a smooth white or red surface, which can become ulcerated.^{18,19} A local cause of chronic low grade trauma can usually be identified and treatment is by correction of cause and surgical excision of the polyp.

Oral squamous papillomas are epithelial neoplasms, usually with a viral aetiology (Human Papilloma Virus) and have a pink or white papilliferous or cauliflower-like surface. They are usually found in young adults.¹⁹ Treatment is by excision.

A pyogenic granuloma is a benign, localized mass of exuberant granulation tissue produced after injury (or local infection). The mass

Traumatic

- Fibro-epithelial polyp
- Pyogenic granuloma
- Traumatic eosinophilic granuloma

Infectious

- Infected ulcer
- Squamous cell papilloma
- Syphilitic gumma

Neoplastic

- Benign
 - Lipoma
 - Neuroma
 - Neurofibroma
 - Other mesenchymal tumours
- Malignant
 - Squamous cell carcinoma
 - Liposarcoma
 - Rhabdomyosarcoma

Developmental

- Cysts

Table 1. Differential diagnosis of lump on lateral tongue.

may become fibrous over time and, in pregnant women, reduction in size is not uncommon after pregnancy. Usually, the treatment is by conservative surgical excision along with removal of potentially traumatic or infective aetiological factors. They have a slight chance of recurrence after excision.

A traumatic eosinophilic ulcer or granuloma is another unique form of granulation tissue proliferation. It is often trauma-induced and frequently shows surface ulceration. It is larger in size (1.5–3.0 cm) than the typical oral/pharyngeal traumatic ulcer, has often alarming proliferation of the granulation tissue of the ulcer bed (similar to pyogenic granuloma, but with a central indentation or crater), and has a much greater rate of recurrence after excision.

Neuromas and neurofibromas can present either as isolated lesions or as a part of conditions like multiple mucosal neuroma syndrome (Gorlin's syndrome) and neurofibromatosis.

Squamous cell carcinoma (SCC) remains the most common malignant tumour in the oral cavity, the ventro-lateral margin of the tongue, along with the floor of the mouth, being particularly common sites. Ulcers without local causes which fail to resolve, leukoplakia and erythro-leukoplakia are the usual clinical presentation but nodular lesions which have become indurated and fixed can present as lumps and warrant urgent referral for assessment and biopsy.

Liposarcoma (LS), one of the most common malignant tumours, is considered as a rarity in the oral cavity, the tongue being the most frequent site. Local excision often results in recurrence. When a lipomatous lesion is identified in the oral cavity, and especially on the tongue, LS should certainly be among the lesions on the list of differential diagnoses. The follow-up must be on a long-term basis since this tumour can recur years after initial surgical treatment and can also undergo dedifferentiation.²⁰

Rhabdomyosarcoma is the most common soft tissue sarcoma in infants and children and, although it has a predilection for the head and neck region, the tongue is an uncommon site for its occurrence. It is a highly malignant

tumour, invading local structures and metastasizing to distant sites. The congenital embryonal type occurs predominantly in infants and young children and has the best prognosis.^{21,22}

Chondrolipoma remains a rare tumour in the oral cavity. It can present to general dental practitioners and other health professionals, requiring referral for diagnosis and surgical excision.

Acknowledgements

We would like to thank Dr Max Robinson, Consultant in Oral Pathology at the Royal Victoria Infirmary, Newcastle for his assistance in the interpretation of the histology.

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