Intra-oral Lipoma: A Case Report

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Abstract Lipoma, a benign tumour of adipose tissue, is one of the most common benign neoplasms of the body. However, its occurrence in oral cavity is relatively rare. It accounts for 1 to 4% of benign neoplasms of the oral cavity, affecting predominantly buccal mucosa, floor of mouth and tongue. They have been known to grow to sufficiently large sizes causing problems in mastication and speech. The usual lesion consists of a well-circumscribed, lobulated mass of mature fat cells wherein sometimes, the covering mucosa may become ulcerated presenting difficulty in its diagnosis. Herein, we are presenting a case of intra-oral lipoma affecting right anterior buccal mucosa in a 31 year old female patient. Excisional biopsy was performed and histopathological examination revealed proliferation of mature adipocytes arranged in lobules and separated by numerous fibrous septa. After a 3 month follow-up, the patient did not reveal any signs of recurrence. The clinical and histopathological findings are discussed in detail and literature is reviewed.

Keywords Lipoma; Benign tumor; Adipose tissue

Introduction Oral lipomas have been reported in individuals from 6 weeks of age to 75 years of age. The buccal mucosa and mucobuccal folds are the most common sites followed by tongue, floor of mouth and lip. As pain is not the symptom, patients may not be aware of the lesion, but those who are aware, report a slow growing mass that may have been present from 1 month to 30 years (Wood and Goaz, 1997). Lipoma usually occurs as a solitary lesion that may be sessile, pedunculated or submerged. It ranges in size from a small lesion approximately 1cm in diameter to a massive growth around 5cm×3cm in its greatest dimension. Deeper lesions may vary in color and shape ranging from a well-defined, round contoured swelling to a large, ill-defined, lobulated mass. The color is often in yellow tones and actually depends on the thickness of the overlying mucosa and the depth of the lesion beneath. The surface is typically smooth and non-ulcerated except when traumatized (Wood and Goaz, 1997). Although its aetiology is unknown, possible causes may include trauma, infection, irritation, and hormonal alteration. In few cases of lipoma, rearrangement of 12q, 13q and 6p chromosomes has also been observed making it to be a genetically determined condition (Rajendran and Sivapathasundharam, 2009).

Case Report A 31 year old female patient presented with a slowly growing intra-oral mass due to which the patient reported difficulty in swallowing since few days. During intra-oral examination, a pinkish nodular growth in relation to right anterior buccal mucosa was noted (Figure 1). Since the lesion was asymptomatic, the patient could not precisely define when the lesion appeared. Extra-oral examination revealed no specific abnormality. An intra-oral examination, however, revealed a well-defined, pedunculated growth protruding from the right anterior buccal mucosa, extending from the distal aspect of 43 to the mesial aspect of 45. On palpation, the growth was non-tender and soft in consistency. It measured 1.5 cm×2 cm in greatest dimension. In keeping with the above findings, a provisional diagnosis of traumatic fibroma was given while pyogenic granuloma, peripheral giant cell granuloma, lipoma, buccal fat pad and oral
lymphoepithelial cyst were considered in differential diagnoses. Routine blood investigations failed to reveal any significant finding as blood parameters were within normal limits. The lesion was excised and sent for histopathological examination which revealed proliferation of mature adipocytes arranged in lobules and separated by fibrous septa (Figure 2). Based on the clinical and histopathological findings, a final diagnosis of lipoma was eventually arrived-at.

**Discussion**

The first discussion of oral lesions was provided by Roux in 1948. In his review of alveolar masses, Roux referred to the oral lesions of lipoma as “yellow epulis” (Rajendran and Sivapathasundharam, 2009). Oral lipomas are usually soft, smooth-surfaced, nodular masses that can be sessile or pedunculated. Typically, the tumour is asymptomatic and of a multiple or more subtle, but obvious yellowish hue. Oral lipomas, more deeply rooted in the tissue, may appear pink. The various types of oral peripheral mesenchymal tumours as classified by Furlong et al include (Rajendran and Sivapathasundharam, 2009)

- Lipomas;
- Myomas (rhabdomyomas and leiomyomas); and
- Peripheral nerve tumours (neurofibromas, plexiform type of neurofibromas, schwannomas, and traumatic neuromas).

Morphologically, Rajendran and Sivapathasundharam (2009) classified intra-oral lipomas as

- Superficial forms;
- Diffuse forms, affecting the deeper tissues; and
- Encapsulated forms.

Accounting for 50% of all the reported cases, the buccal mucosa and buccal vestibule are the most common intra-oral sites. Freitas et al. (2009) reviewed 26 cases of intra-oral lipomas out of which, the classic lipoma was the most common in 15 cases, followed by fibrolipoma for which 7 cases were reported. In a review conducted in a Brazilian population by Fregnani et al., (2003), classic lipomas followed by fibrolipomas again represented the lesions most commonly diagnosed as intra-oral lipomas. Oral lipomas located on the buccal mucosa may not represent true tumour, but rather herniation of buccal fat pad through the buccinators muscle. Such cases may occur subsequent to a local trauma in young children or the surgical removal of third molar in elderly patients. Less common sites include the tongue, floor of mouth and lips (Neville et al., 2009).

Analyzing 125 lipomas of the maxillofacial region, it was found that parotid region was the site most prevalent followed by buccal mucosa, lip, submandibular region, tongue, palate, floor of the mouth and buccal vestibule, in that order of decreasing incidence (Furlong et al., 2004). A case of intra-osseous lipoma in the mandible in a female patient has also been reported in the literature and the occurrence is even rare (Buric et al., 2001; Pass et al., 2006). Regarding gender, according to literature, intra-oral lipomas have no gender predilection, but meanwhile there are greater tendencies for males (Furlong et al., 2004; Bandeca et al., 2007; Trandafir et al., 2007). The lesion is usually non-tender, soft and almost cheesy in consistency but may be fluctuant. It is typically
superficial but may infiltrate the muscles, occasionally becoming fixed to the subjacent tissues and therefore, becoming immovable. Deep seated lesions may produce only a slight surface elevation and may be well-encapsulated, more diffuse, and less delineated than the superficial variants. This more diffuse form generates the clinical impression of being a fluctuant tumour (Wood and Goaz, 1997). Most intra-oral lipomas are composed of mature fat cells that differ little in microscopic appearance from the normal fat cells that surround the tumour (Greenberg et al., 2008; Neville et al., 2009). The tumour is usually well circumscribed and may be surrounded by a thin fibrous capsule. A distinct lobular arrangement of the cells is also often seen. The most common microscopic variant of intra-oral lipomas is the fibrolipoma characterised by a significant fibrous component intermixed with lobules of fat cells. The other variants are (Rajendran and Sivapathasundharam, 2009; Neville et al., 2009)

- Angiolipomas- revealing a mixture of mature fat cells and numerous small blood vessels;
- Spindle cell lipomas- with variable amount of uniform appearing spindle cells, typically in conjunction with lipomatous components (i.e, when appearing with mucoid components, however, in such cases, impression of a myxoid lipoma is made);
- Pleomorphic lipomas- with presence of spindle cells with bizarre hyperchromatic giant cells; and
- Intra-muscular (infiltrating) lipomas- which are more deeply seated and have an infiltrative growth pattern and extend between the skeletal muscle bundles.

When the spindle cells are of smooth muscle origin, the term myolipoma may be used. The term “angiomyolipoma” is commonly applied when the smooth muscle appears to be derived from the walls of arterioles (Lia and Lin, 1974). On rare occasions, isolated ductal or tubular adnexal structures are scattered throughout the fat lobules, in which case, the term “adenolipoma” is applied. Perineural lipomas have also been reported. Rarely, chondroid or osseous metaplasia may be seen in lipomas and in such cases, chondroid lipoma, osteolipoma, ossifying lipoma, or ossifying chondromyxoid lipoma are often the best terminologies cited. Also, rare have been reports of hibernomas i.e a benign neoplasm of brown fat occurring in the oro-pharyngeal region. The above noted combinations of histological features (Wood and Goaz, 1997) are of no prognostic significance although the clinical appearance in terms of color and tissue consistency may vary in accordance with the specific types noted. Hormonal influences during adolescence on embryonic multi-potential connective tissue cells that remain sub-clinical were also considered in the differentiation of lipoma formation suggesting such lesions to be of congenital origin (Greer and Richardson, 1973). Trauma and chronic irritation have also been proposed to play a role in the development of lipomas, however, trauma is widely accepted as a positive factor in the discovery rather than aetiology of these lesions (Hatziotis, 1971; Greer and Richardson, 1973; Perri de Carvalho et al., 1987). In some areas devoid of fatty tissue, metaplastic transformation of connective tissue is suggested to be the origin in the development of such lesions. Furthermore, fibroblast and muscle cells have also said to be possible precursor cells in these areas (Mahabir et al., 2000). Currently, in addition to radiographic examinations to assess bone involvement and extent of intra-osseous variants, MRI has become the imaging modality of choice, especially in cases of sialolipomas. MRI is considered to be a technological advancement that has greatly facilitated the diagnosis in the head and neck region for soft tissue pathologies, even making the treatment plan more accurate, moreso in lesions of aggressive character (Sakai et al., 2006).

In some cases, intra-lipomas of the buccal mucosa region cannot be distinguished from herniated buccal fat pad without history of sudden onset post-trauma being non-evident. Lipomas of oral and pharyngeal region are however otherwise simple to differentiate from other lesions, although spindle cell and pleomorphic types must be distinguished from liposarcomas. When metaplastic calcified tissue is present, the lesion may be confused with soft tissue chondromas or osteomas. Multiple head and neck lipomas have been observed in neurofibromatosis, encephalo-crano-cutaneous lipomatosis, multiple familial lipomatosis, Gardner syndrome, and Proteus syndromes (Rajendran and Sivapathasundharam, 2009). Lipoma, in cases, may be part of congenital alterations and extremely rare forms of intra-oral lipoma have been described by Mahabir et al. (2000) where the lesion was found in association with congenital cleft palate. Another case of congenital lesion was described by Perri de Carvalho et al. (1987).
in a 7 year old boy in the region of upper labial frenum. In this case, the treatment sufficed with the elimination of the habit of sucking the lesion, eventually resulting in the eruption of adjacent teeth. The treatment of oral lipomas, including all the histological variations, resides with simple surgical excision. Recurrence is extremely rare. Although the growth of lipomas is usually limited, they can reach giant dimensions interfering with speech and mastication, actually being the main complaints of the patients, as to why they report to the oral physicians for consultation and treatment (Wood and Goaz, 1997).

**Conclusion**

Lipomas have gained little interest in the past and have largely been ignored in the literature. The reasons are that most lipomas grow insidiously and cause few problems other than localized masses. Approximately 15 -20% of lipomas occur in the head and neck region. Among the reported intra-oral lipomas, 50% occur in the buccal mucosa region. Surgical excision is the ideal treatment with excellent outcome, however, complete enucleation with wide base surgical excision should be emphasized as this is the only key factor to avoid recurrence.

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