POST TRAUMATIC INTRAORAL LIPOMA OF BUCCAL MUCOSA: A CASE REPORT

Yohanes Yoppy Purnomo 1,a, Andri Hardianto b, Endang Sjamsudin b and Kiki Achmad Rizki c

a Resident at Oral and Maxillofacial Surgery Department, Faculty of Dentistry, Universitas Padjadjaran, Bandung, Indonesia, b Oral and Maxillofacial Surgery Department, Faculty of Dentistry, Universitas Padjadjaran, Bandung, Indonesia, c Surgical Oncology Department, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

ABSTRACT Introduction: Lipoma is a benign mesenchymal tumour of fatty tissue with uncertain pathogenesis, but post-traumatic is believed to be one of the contributing factors. Lipomas are rarely seen in the oral cavity and most commonly in the proximal area of the extremities. Most oral lipomas are less than 3 cm in size and show no symptoms. The buccal mucosa is the most common predilection area in the oral cavity. The purpose of this case report is to describe the characteristics and treatment of post-traumatic lipomas in the oral cavity. Case report: A 12-year-old boy patient presented with a complaint on the right cheek. The patient had a history of trauma to his right cheek three years earlier, but there was no sign. The patient complained that the lump was getting bigger in the last 2 years with a size of 4x3x2 cm³ and was not accompanied by pain, then, the patient was treated with a biopsy excision and the results of Anatomical Pathology (AP) showed the patient has a lipoma. Post evaluation after 12 months showed no surgical complications and recurrence. Conclusion: Post-traumatic lipoma is a rare disorder in the oral cavity. Clinical radiological examination, AP examination, and adequate surgical therapy showed good postoperative results. It is expected that this case report can be used as an additional reference in the case of oral lipoma.

KEYWORDS Buccal Mucosa, Traumatic, Intraoral Lipoma

Introduction

Lipoma is a benign mesenchymal tumour of fatty tissue. Lipomas generally occur in the body and proximal limbs, but lipomas on the head and neck are rare, with an incidence between 13 and 25%. Lipomas in the oral cavity are present only about 1 to 4% with the most frequent areas that appear on the buccal mucosa, tongue, and floor of the mouth. The cause and pathogenesis of lipoma are not clear, but post-traumatic is believed to be one of the factors causing lipoma.

Lipoma in the maxillofacial region has the same predilection between men and women. One study shows that men are more common with a ratio of 1:1. Lipomas are rare in children and usually occur at age 40 or older.

The clinical finding of oral lipoma is generally asymptomatic, and clearly demarcated, and the submucosal mass is yellowish, soft, and with a smooth surface. The size of the lipoma is usually less than 3 cm and grows slowly. Most patients only find out after several months or years before diagnosis. According to Najaf in 2019, a lipoma can show symptoms when the location of the lipoma is in a certain location. One of them is in the upper digestive system showing symptoms such as dysphagia, dysphonia, and dyspnea. According to Kim 2014, large lipomas (more than 10 cm) or rapid development, especially in the head and neck area, should be suspected of being malignant, so special attention is needed in diagnosing lipoma with well-differentiated liposarcomas.

Lipoma can become symptomatic if tumour growth and mechanical irritation occur. In diagnosing post-traumatic lipoma, it can be seen from the clinical picture that it shows a clear, soft,
movable mass that is not attached to the subcutaneous tissue. There is a history of trauma to the patient’s soft tissue at the same location. According to Aust et al in 2007, post-traumatic lipoma usually forms at the site of trauma between 5 to 6 years post-trauma.

Histopathological examination shows that all oral lipomas are composed of mature fat cells very similar to those around normal fat cells. The lipoma is usually clearly demarcated and shows a thin fibrous capsule. Individual cells have a clear cytoplasm with a cell nucleus located peripherally to the cell and a large cytoplasm in the absence of vascularity. Treatment of a lipoma can be performed by surgical biopsy excision with rare recurrence rates. This case report explains the characteristics and treatment of post-traumatic lipoma in the oral cavity.

Case Report

A 12-year-old male patient came to the Oral and Maxillofacial Surgery Department of the Universitas Padjadjaran’s Dental Hospital complaining of a lump on the right cheek. About three years before being admitted to the hospital, the patient had experienced a fall from a bicycle with his right cheek hitting the road asphalt, but nothing happened then. A year after the incident, a lump appeared with the size of 1x1x1 cm, there was no pain in the right cheek, but the patient did not receive treatment. A year later, the lump on the right cheek was getting bigger with a size of 4x3x2 cm³, he did not complain of any pain, but it was a little uncomfortable when chewing food then the patient went to the hospital in the Cimbeuleuit area, carried out several examinations and the patient was immediately referred to the Oral and Maxillofacial Surgery Department, Universitas Padjadjaran’s Dental Hospital for further treatment.

Extraoral examination showed a lump was found in the right buccal area (Figure 1), and intraoral examination found a lump on the surface of the right buccal mucosa, no fluctuation, clearly defined, coloured with the surrounding tissue, and spongy with a size of 2x2x1 cm³ (Figure 2). Thorax examination showed no bronchopneumonia and no cardiomegaly (Figure 3). CBCT examination showed no abnormalities in the teeth and mandibular hard tissue. The lump deformity on the right cheek probably originated from a soft tissue lesion (Figure 4), and Mass ultrasound showed a well-defined and encapsulated hypodense lesion in the right buccal subcutis area measuring 3.4 x 1.5 x 3.6 cm³, suspicious of a cyst with viscous liquid component therein (Figure 5).

Figure 1 The patient’s extraoral profile photo shows a lump on the right cheek with a size of 4x3x2 cm³. A Right side view. B, Front view. C, Left side view

The preoperative diagnosis in this patient was a benign suspicion soft tissue tumour in the right buccal region with differential diagnosis of lipoma, traumatic fibroma, and salivary gland lesions. The mass that had been excised had a soft elastic appearance, chewy, yellowish-white, and showed lobules.
Figure 5 Ultrasound examination showed a mass, showing well-defined and encapsulated hypodense lesion in the right buccal subcutis area. A. Right submandibular B. Right buccal, C. Right parotid gland

on the cut surface with a size of 9x6x2 cm3 in brownish-white solid lamentations. (Figure 7), The postoperative extra-oral appearance showed reduced swelling in the buccal area (Figure 8). The anatomical pathology examination showed a diagnosis of lipoma (Figure 9).

Preparations in the form of a tumour mass consisting of mature fat cells, which grow hyperplastic, are condensed with the cell nucleus edged within normal limits. The connective tissue stroma includes inflammatory lymphocyte cells accompanied by dilated blood vessels. There was no sign of malignancy. The prognosis, in this case, was good because it manifested as benign lesions, and 1-year postoperative evaluation showed healing progress in the buccal region; there were no complaints of pain or recurrences (Figure 10, 11).

Figure 6 Excision of the mass in the buccal region. A. Intraoral lesions of the buccal mucosa. B. The incision was made, and a little mass was visible. C. Gradually remove the intraoral mass, D. The intraoral mass has been completely removed. E, Wound scar after debridement showed no remaining mass. F, The surgical wound cleaning, suturing, and a drain placement

Discussion

Lipoma is a benign tumour of fatty tissue that is very common and usually occurs most often on the body and proximal extremities. Still, its presence in the oral cavity is relatively rare. Lipomas in the oral cavity occur most often on the buccal mucosa with a percentage of 50% and rarely occur on the tongue, the floor of the mouth, or lips.

According to Sinha A. et al. in 2016, two cases of lipoma of the buccal mucosa were more clearly demarcated than extraoral screening. Lipomas of the oral mucosa may appear as solitary or multiple lesions, increasing to 5 to 6 cm over several years. Still, most cases are less than

Figure 7 The appearance of post excision mass, mass was restricted and had a yellowish homogeneous surface.

Figure 8 Postoperative extraoral appearance

Figure 9 Anatomical Pathology results in lobular growth of mature fat cells of various sizes with eccentric nuclei (black arrow). A, Magnification 100µm, B. Magnification 50µm, C. Magnification 20µm.
Lipomas, in general, can appear in the subcutaneous tissue (superficial lipoma) or deep soft tissue (deep lipoma), or even on the surface of the bone (parosteal lipoma). Deep lipomas appearing within or between skeletal muscle fibres are called intramuscular or intermuscular lipomas. Intramuscular lipomas can occur on the trunk, head and neck, and upper and lower limbs.15,16

The clinical diagnosis of a lipoma is easy because of its yellowish colour and usually superficial location near the mucosa. Lipoma in the oral cavity can cause discomfort, chewing difficulty, dysphagia, and dyspnea.13 The differential diagnosis includes fibroma, dermoid cyst, minor salivary gland tumour, mucocele, hemangioma, lymphangioma, rhabdomyoma, or neuroma.10,15

In this case, the lipoma was suspected because there was a history of trauma to the side with the lipoma. However, the cause of the lipoma in the oral cavity is still unclear. However, there are several possible causes, such as heredity, obesity, diabetes, radiation, endocrine disorders, insulin injection, corticosteroid therapy, and trauma.5,6 Adipose is not expected to contribute to the formation of oral cavity lesions. Another theory, the "metaplasia theory", suggests that the development of fat tissue occurs due to deviant changes from mesenchymal cells to lipoblasts, because fat tissue can be derived from mutated connective tissue cells almost anywhere in the body. However, in some cases, trauma and chronic irritation can trigger tissue proliferation and play a role in lipoma development.5,8,13

The pathogenic relationship between soft tissue trauma and post-traumatic lipoma formation is highly controversial. There are two possible explanations for linking soft tissue trauma and adipose tissue tumour growth: post-traumatic lipoma formation can result from the removal of fatty tissue through the fascia resulting from a direct impact or the so-called fatty tissue prolapse, also known as a pseudolipoma. The theory of pseudolipoma formation was first proposed by Brooke and MacGregor in 1969; they reported several cases of post-traumatic adipose tissue prolapse through the fascia at the site of soft tissue trauma.6,9 The second theory is based on the effects of cytokines and growth factors released by platelets, macrophages, and fibroblasts in the hematoma and local inflammation following blunt, soft tissue trauma. This effect can trigger the differentiation of preadipocyte cells into adiposity maturity to form new fat tissue.9,17

Lipoma is clearly visible on clinical examination, CT scan, and MRI.13 Despite the availability of these techniques, histopathology remains the gold standard in diagnosing lipoma.5 Ultrasound is an inexpensive, sensitive, non-invasive, and specific method of examination that can provide a clear and prompt diagnosis. This can be used as a preliminary study and shows the appearance of a hypoechoic homogeneous lesion which may be ovoid or lobular.9,13

Microscopically, it is difficult to distinguish between lipoma and normal adipose tissue. The well-defined but encapsulated microscopic appearance of mature adipocyte cells with large cytoplasm without vascularity.3,9 Histological subtypes of lipoma include angiolipoma, myelolipoma, angiolipoma, fibrolipoma, hibernoma, spindle cell lipoma, pleomorphic lipoma, chondroid lipoma, and nerve fibrolipoma. Generalized lipomas and their variants should be distinguished from liposarcomas, malignant neoplasms containing lipoblasts characterized by a rough vacuole and one or more hyperchromatic nuclei.18

The treatment of choice for lipoma is surgical excision or liposuction. Surgical excision treatment is most often performed in performing lipoma removal. Generally, no recurrences occur because the lipoma is removed at the same time as the capsule. Surgical action can also be performed in cases of infiltrating lipoma. Liposuction is commonly used for large cases of lipoma because it is a less invasive and safe method of tumour removal but has the disadvantage of leaving a fibrous capsule.1,9,10

The prognosis of lipoma is very good; there is no risk of malignant transformation; for intramuscular lipoma, which has a high recurrence, it is recommended to completely remove the entire lesion from the muscle or tumour compartment.15,19

The prognosis of this patient was good; it showed no signs of recurrence after 12 months post-operation.

**Conclusion**

Post-traumatic lipoma in the oral cavity is a rare disorder in the oral cavity. Clinical, radiological, and AP examinations are carried out to determine the diagnosis for the treatment plan decision-making. Surgical excision with an intraoral approach was performed, showing good results in a 12-month postoperative evaluation with no symptoms of recurrence. It is expected that this case report can be used as an additional reference about lipoma in the oral cavity.

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