

Lipoma involving submasseteric space- An uncommon case report with ultrasonographic finding

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Abstract

Lipomas, which are frequently encountered tumors of mesenchymal origin, typically appear on the trunk and lower limbs. In the head and neck area, they commonly manifest in the posterior neck but are seldom found in the anterior neck, infratemporal fossa, oral cavity, pharynx, larynx, or parotid gland. A notable characteristic is the infiltration and dissociation of adjacent muscle fibers, posing challenges in differentiation from well-differentiated liposarcomas. Recurrence rates are notably elevated. Imaging modalities such as CT, MRI, and ultrasonography provide crucial diagnostic insights, often obviating the need for histopathological confirmation of these lesions. In this case, we present an instance of an lipoma involving the sub masseteric space in a 25-year-old female patient, who presented with a progressively enlarging mass on the left cheek.

Keywords: Lipomas, ultrasonographic, tumor

Introduction

A lipoma is a non-cancerous tumor composed of adipocytes (fat cells) without any cellular abnormalities [1]. It is the most prevalent mesenchymal tumor and can develop in any area containing adipose tissue. Lipomas most frequently occur on the trunk and lower limbs. In the head and neck region, they are uncommon, comprising only 1–4.4% of all benign tumors [2]. Typically, they are observed in the posterior neck area. They exhibit slow growth and are almost always benign [3]. They typically appear as solitary nodules that are well-defined, painless, and have a rubbery texture [4]. Clinical examination often allows for accurate suspicion of most subcutaneous lipomas. However, deep-seated or infiltrating lipomas require imaging for further evaluation [5].

Ultrasonography is typically the initial modality of choice for detecting these soft-tissue growths due to its affordability, widespread availability, high sensitivity, selectivity, and capability to offer focused, real-time assessment of the lesion. According to medical literature, ultrasound can detect lipomas with diagnostic sensitivity ranging from 52% to 100% and specificity from 86% to 100% [6].

Surgical excision is a highly effective treatment for these conditions. Alternative therapeutic options include steroid injections and liposuction procedures. Here, we present a case of an oral lipoma located in left sub masseteric space, detailing the clinical evaluation, ultrasound findings, and the subsequent treatment approach.

Case Report

A 25-year-old female patient reported with swelling in the left side of the face since 3 years. The swelling had progressively enlarged to measure 3 cm x 3.5 cm by the time of examination. The swelling was completely asymptomatic and did not affect speech or chewing

function. The patient had a moderate build, appeared well-nourished, and was fully oriented to time and place. General physical examination revealed no signs of pallor, jaundice, cyanosis, or koilonychia. Upon local examination, an asymptomatic, firm, non-fluctuant mass was noted in the left angle region of the mandible. The skin covering the area appeared normal in color and texture (Fig 1). The swelling became more noticeable when the patient clenched their teeth or contracted the masseter muscle, extending from the posterior border of the ramus towards the anterior border. The swelling did not extend intraorally (Fig 1).

The provisional diagnosis indicated a benign mesenchymal tumor, primarily a lipoma located in the submasseteric space. The differential diagnosis was made as Masseteric hyperplasia.

The patient then underwent ultrasonography, which revealed a hypoechoic mass with echogenic thick bands within lying in the subcutaneous area in the lower part of left side of the face involving the sub masseteric space measuring 39.1*33.5*10.2mm which was suggestive of Lipoma (Fig 2).

Under general anesthesia, the tumor was surgically removed through an extraoral retro-mandibular incision. A blunt dissection was done to expose and remove the entire mass. The excised specimen displayed a pale yellow color with a lobulated surface. The macroscopic appearance of the lesion was irregular, lobulated, and characterized by firm fibrofatty tissue. The excised specimen was further sent for histologic examination which revealed that the mass was composed of mature fat cells interspersed with fibrous partitions which confirmed the diagnosis of a lipoma (Fig 3).

Based on histopathological findings consistent with clinical and ultrasonographic impressions, a final diagnosis of oral lipoma was made. A follow-up examination after 9 months showed no signs of recurrence and we continue to conduct regular monitoring of the patient.



Fig 1: (A) & (B)- Extra-oral clinical images; (C)- Intra-oral clinical image.

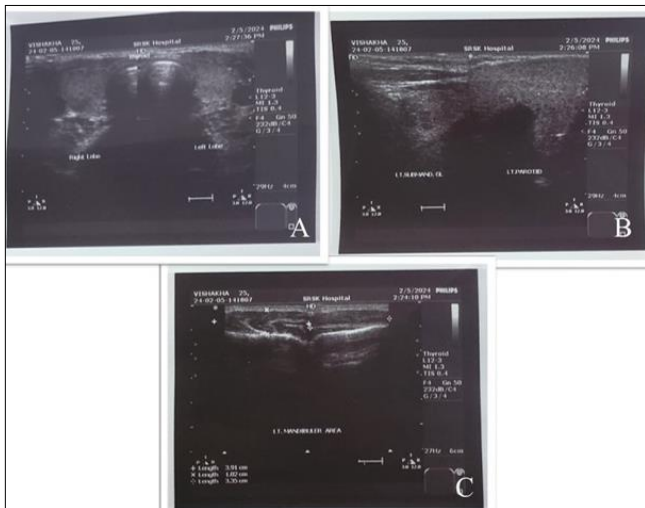


Fig 2: Ultrasonographic images revealing a hypochoic mass with echogenic thick bands

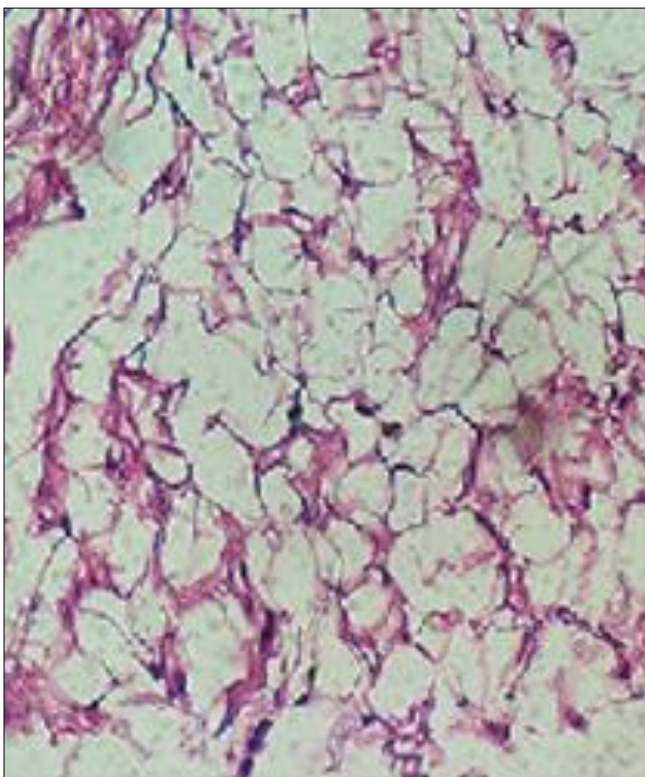


Fig 3: Histopathology of the excised specimen

Discussion

Lipomas are common tumors found in areas of the body where fat accumulates. The fat within these tumors differs from normal fat as it is not utilized for the body's metabolic needs [7]. Lipomas typically appear as well-defined nodules

that develop slowly over several years. They often manifest as submucosal masses with a yellowish color and a consistency resembling dough. Lipomas are generally asymptomatic, movable, and pliable [8]. Benign lipomas are categorized into types including classic lipoma, angioliipoma, chondroid lipoma, myxoliipoma, and spindle cell/pleomorphic lipoma [2]. Lipomas most commonly occur around the age of 40, with a slight preference for females. They are frequently found in individuals between their fourth and fifth decades of life [9] but in the present case the patient was a female in her third decade of life. Lipomas can appear as solitary or multiple growths, with distribution that may be symmetrical or asymmetrical. In the oral cavity, they commonly occur on the buccal mucosa, tongue, palate, mandible, and lips [8].

While the exact cause of lipomas remains uncertain, two prominent theories include the "Hypertrophy theory" and the "Metaplasia theory." Additional proposed factors include trauma, infection, chromosomal anomalies, or hormone imbalances [10].

On rare occasions, lipomas may be linked to inherited conditions like Gardner's syndrome, Madelung's disease, and hereditary multiple lipomatosis [11].

Superficial lipomas can often be accurately identified through clinical examination. The differential diagnosis for superficial lipomas includes Schwannoma, neurofibroma, vascular malformation, sebaceous cyst, and lymphangioma [11].

Ultrasound is the preferred imaging modality for evaluating soft tissue swellings. Intraoral probes are available for examining swellings within the mouth. The purity of fat tissue affects the ultrasound appearance, with purer fat appearing more hypochoic; the echogenicity of a lipoma correlates with the amount of internal fat tissue. Ultrasound demonstrates an overall accuracy rate of 95.95% and a sensitivity rate of 86.87% in detecting lipomas. If a mass is difficult to identify on ultrasound, additional imaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) may be utilized for further evaluation [8].

Surgical removal of the lipoma typically results in a cure, and recurrence is uncommon. However, infiltrating lipomas have a high rate of recurrence, necessitating regular follow-up appointments for patients [11]. Alternative treatment options include liposuction, which utilizes a 16-gauge needle for average-sized (4 to 10 cm) or large-sized (> 10 cm) tumors, as well as intralesional steroid therapy [8].

Conclusion

Oral lipomas are a rare condition that occurs without gender preference and commonly affects the lining of the inner cheek. These growths usually develop slowly and remain asymptomatic until they reach a considerable size. Ultrasonography demonstrates high sensitivity and even greater specificity, making it a valuable diagnostic tool for detecting superficial lipomas. Surgical removal is generally curative; however, depending on the histological subtype of the lipoma, regular follow-up is necessary to monitor for recurrences.

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