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Case Report

Right Submandibular Space Lipoma: A Rare Case Report

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Abstract

Lipomas are common benign mesenchymal tumors composed of mature adipocytes, but their occurrence in the submandibular space is rare. We present a case of a 36-year-old male with a progressively enlarging right submandibular swelling for two years. Magnetic Resonance Imaging (MRI) revealed a well-circumscribed lipomatous lesion, and Fine Needle Aspiration Cytology (FNAC) suggested a benign adipocytic tumor. The mass, measuring 8 cm, was excised in toto under nerve monitoring to prevent injury to the marginal mandibular branch of the facial nerve. Histopathology confirmed lipoma. The postoperative course was uneventful, with no facial weakness or recurrence on follow-up at 1 month, 6 months, and 1 year. This case highlights the importance of careful radiological assessment and meticulous surgical dissection with nerve monitoring in large submandibular lipomas.

Keywords: Submandibular Lipoma; Neck Mass; Benign Tumor; Nerve Monitoring; Surgical Excision

Introduction

Lipomas are benign mesenchymal neoplasms composed of mature adipose tissue, accounting for approximately 16–20% of all benign soft tissue tumors [1]. Prevalence in submandibular space is 1%.

They commonly occur in the trunk, shoulder, and upper extremities, but their presence in the head and neck region is relatively uncommon, representing only 13–15% of cases [2]. Submandibular space lipomas are particularly rare, with few cases reported in the literature.

These tumors are typically slow growing, painless, and may attain considerable size before patients seek medical attention [3]. MRI is the imaging modality of choice due to its superior fat characterization, while FNAC helps exclude other soft tissue lesions [4]. Complete surgical excision remains the mainstay of treatment, with nerve preservation being a crucial surgical consideration due to the proximity of the marginal mandibular branch of the facial nerve [5].

We report a case of a large right submandibular space lipoma successfully managed by surgical excision under intraoperative nerve monitoring.

Cae Report

A 36-year-old male presented with a painless swelling in the right submandibular region for the past two years. The swelling had gradually increased in size, causing mild cosmetic concern but no difficulty in swallowing, breathing, or speech.

Clinical examination revealed a soft, mobile, non-tender swelling measuring approximately 8 × 6 cm in the right submandibular space. The overlying skin was normal, with no regional lymphadenopathy.

Investigations

MRI neck (Image 1a, 1b) showed a well-defined, homogenous, encapsulated lesion in the right submandibular space, hyperdense on T1 and T2 sequences, and suppressed on fat-saturated sequences, consistent with a lipomatous lesion.

FNAC revealed mature adipocytes without atypia, suggestive of lipoma.

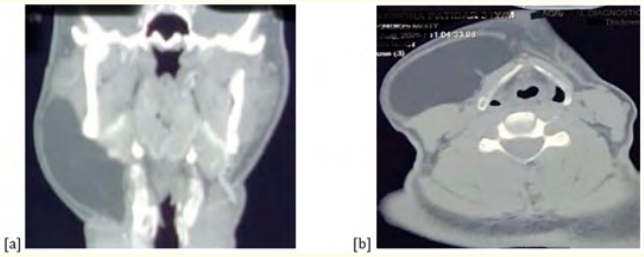

Image 1: MRI neck – [a] Coronal and [b] Axial view.

Surgical procedure

Under general anesthesia, the patient was placed in the supine position with neck extension. Intraoperative nerve monitoring was applied to identify and preserve the marginal mandibular branch of the facial nerve.

A standard submandibular incision was made along a natural skin crease, and careful dissection was carried out. A large, well-encapsulated, yellowish mass was identified within the submandibular space. The lesion was excised in toto without rupture. Hemostasis was achieved, and a suction drain was placed. Wound closure was done in layers. The tumor was well-encapsulated, not infiltrating adjacent structures, and separate from the submandibular gland (Image 2).

Postoperative course: The patient had no immediate complications. Facial nerve function was preserved with no weakness of the marginal mandibular branch.

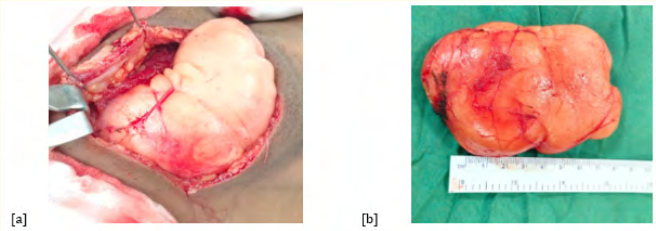

Image 2: [a] Intraoperative image of the Lipoma; [b] Specimen image.

The specimen showed mature adipose tissue with no evidence of malignancy, confirming lipoma (Image 3).

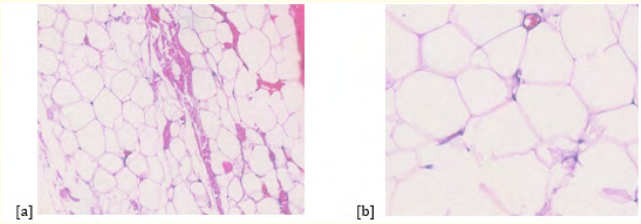

Image 3: HPE image of Lipoma.

Follow-up

The patient was followed at 1 month, 6 months, and 1 year, with no recurrence or functional deficits.

Discussion

Solitary Lipomas in the submandibular space are rare, and their slow growth often leads to late presentation when they attain large size. This condition is due to proliferation of normal adipose tissues [1]. Annual Incidence is 1 in 1000 cases. The most common location in head and neck is posterior region of the neck [2]. Different variants for this condition includes lipomatosis, pleomorphic lipomas, chondroidlipomas, angiolipomas, lipoblastoma, lipoblostomatosis, spindle cell lipoma [3]. Clinical presentation of lipomas is usually slow growing painless mass. In case of malignant lipomas like liposarcoma, there is history of the mass rapidly grown in size (sometimes >10 cm) painful, firm to hard in consistency etc. In our case although the size of the mass was 8 cm, it was slow growing and painless. The differential diagnosis includes submandibular gland tumors, sebaceous cysts,

branchial cysts, and liposarcoma [4]. Imaging plays a pivotal role: ultrasound may suggest a fatty lesion, but MRI is the gold standard for diagnosis due to its ability to confirm fat signal characteristics and delineate the lesion's relationship with adjacent structures [5].

FNAC is useful in ruling out malignant transformation, though its diagnostic yield may be limited. The definitive management remains surgical excision, with a focus on preserving nearby neurovascular structures, particularly the marginal mandibular branch of the facial nerve. Intraoperative nerve monitoring, as used in this case, enhances safety by reducing the risk of iatrogenic nerve injury [4,5].

The prognosis of lipomas is excellent, with recurrence being rare if the lesion is excised completely with its capsule. Malignant transformation into liposarcoma is exceedingly uncommon. Histopathological features that differentiate between Lipoma from Liposarcoma are presence of Lipoblasts, increased mitotic activity, Thickened septa with atypical stromal characteristics like myxoid, fibrous or pleomorphic depending on the subtype and enlarged and hyperchromatic nuclei. Sometimes necrosis can be seen in high grade malignant tumors. Molecular markers for Liposarcoma are MDM2 and CDK4 amplification. In our patient , HPE showed lobules of mature adipocytes separated by thin fibrous septae. No atypical cells or lipoblasts were present (Image 3). Our patient showed no recurrence up to one year of follow-up, consistent with reported literature [6].

Condition	Key Features
Submandibular gland tumor	Firm, may be associated with salivary dysfunction, variable imaging
Branchial cyst	Soft, fluctuant, often presents in young adults
Sebaceous cyst	Superficial, mobile, with punctum, not deep-seated
Liposarcoma	Rapidly enlarging, heterogeneous on MRI, possible pain

Table 1: Differential Diagnosis of Submandibular Swelling [4-6].

Conclusion

Submandibular space lipomas are rare entities that can mimic other neck masses [1,2]. MRI is the most reliable imaging modality, and complete surgical excision under nerve monitoring ensures safe and effective treatment [3,4]. Long-term follow-up is necessary, although recurrence is uncommon after total excision [5,6]. This case reinforces that although rare but Lipomas can be considered as one of the differentials in head and neck masses and the role of meticulous surgical planning in achieving excellent functional and cosmetic outcomes.

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