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Differential Diagnosis of Swelling in Anterior Part of Face – Case Report

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KEYWORDS

Follow up, Positive Slip Sign, Schwannoma, Facial swelling, Peripheral nerve sheath tumor

ABSTRACT:

We present a case of schwannoma in a 24-year-old male patient who reported a progressively enlarging swelling in the middle area of the left side of his face over the past eight months. The swelling initially measured approximately 0.5 cm and gradually increased in size to around 2 cm. On clinical examination, the swelling was hard in consistency, showed a positive slip sign, had well-defined margins, and was freely mobile. We discuss the clinical presentation, differential diagnosis, diagnostic imaging, histopathological findings, surgical management, and follow-up of this rare benign peripheral nerve sheath tumor presenting in the facial region.

Categories: Dentistry, Pathology, Oral Surgery.

1. Introduction

Schwannoma is a benign peripheral nerve sheath tumor arising from Schwann cells, characterized by slow growth and usually presenting as a well-circumscribed, encapsulated mass. Although schwannomas are commonly found in the head and neck region, their occurrence in the midface is rare and can mimic other soft tissue swellings. We present a case of schwannoma in a 24-year-old male patient who experienced a gradually increasing swelling in the left midface region over the past eight months. The swelling was firm in consistency, approximately 0.5 cm at onset and progressively increased to about 2 cm, with a positive slip sign, well-defined margins, and free mobility on examination. This report discusses the clinical presentation, imaging findings, histopathological evaluation, surgical management, and follow-up of this unusual case to provide insights into diagnosis and treatment considerations.

2. Case Presentation

A 24 year old male reported to the Out Patient Department of Oral and Maxillofacial Surgery of Saveetha Dental College and Hospitals, chennai, India with a chief complaint of swelling on the left side of his midface region for the past 8 months. On eliciting history, the swelling was insidious in onset, initially small size that is 5mm to start with and gradually progressed to attain the current size of 2 cm. There was no history of pain over the swelling or sudden or rapid increase in size. And no other swelling was present in the other parts of the body. He was not a known case of hypertension, diabetes mellitus, pulmonary tuberculosis, asthma. There was no history of any surgeries present. Family history were negatively related to swelling. The patient has a normal sleep pattern as well as regular bowel and bladder habit with a mixed diet**.**

On general examination, he was conscious, well-oriented and cooperative. He had no pallor, icterus, cyanosis, clubbing, lymphadenopathy. On local examination, single swelling of size approximately 2x2 cm, which was

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ovoid in shape present at the midface region. Edge of the swelling clearly defined. No visible pulsation was present. Superficial veins are not engorged in the swelling. On inspection the swelling had well defined margin and smooth surface with normal skin over the swelling. No other swelling were noted in the same region or other side of the midface region. On palpation there was no local rise of temperature and tenderness over the swelling. A single swelling of size 2x2 cm present at the midface region of left side was confirmed during palpation. It has smooth surface with regular border, firm in consistency, mobile in relation to the deeper structures. Skin over the lesion is pinchable and showed a positive slip sign. Swelling was neither reducible nor compressible and also non pulsatile.

3. Case Summary

A 24 years old male patient presented with a gradually increasing swelling in the midface region of left side of the face for past 8 months. Swelling was about 0.5 cm in size at the onset and then gradually increased in size to attain the present size of about 2cm, firm swelling, slip sign positive, margin well defined and freely mobile.

4. Differential Diagnosis

The most common swelling on mid face region might include the diagnosis of lipoma, fibroma, adenoma, hemangioma, sebaceous cyst, epidermoid cyst, dermoid cyst, teratoma, aneurysmal bone cyst, chondroma. Tumors originating from muscular tissue are also considered due to the proximity of masticatory muscles. The slow-growing nature of the lesion often suggests a benign etiology. [28, 29.]

Lipomas are slow-growing, asymptomatic tumors that have a soft, doughy texture and a yellowish hue. A benign tumor of mature fat cells is called a lipoma. The lipoma manifests as a yellowish mass with a thin epithelial surface when it occurs in the superficial soft tissue. This thin epithelium typically results in a delicate blood vessel pattern on the surface. Deeper lesions are more difficult to diagnose clinically since they could not exhibit this feature.[1]

Hemangiomas represent benign vascular tumors that manifest as soft masses which may be smooth or lobulated. Their color ranges from deep red to purplish, blanching with applied pressure, and their size can vary widely from a few millimeters to several centimeters.[2]

An epidermoid cyst is a tiny, hard, spherical, and moveable lump under the skin. Although this cyst can develop anywhere on the body, it usually appears on the face, neck, or back. They are characterized by accumulation of keratin within a cystic lining derived from epidermal tissue.[3]

Adenomas, benign epithelial tumors, appear as firm, well-circumscribed nodules that typically grow slowly and may remain clinically silent for years.[4]

On the face, a sebaceous cyst typically manifests as a spherical, smooth lump beneath the skin. The skin over the cyst may seem somewhat stretched or normal. The punctum, or cyst entrance, may occasionally be visible as a little black dot in the centre. The cyst can range in size from little to several centimetres across.[3]

A dermoid cyst is benign cystic lesions that grow slowly and frequently contain a variety of tissues, including skin, hair follicles, sebaceous glands, and occasionally even bone or teeth. smooth, firm, and painless. develop gradually over time and might not show any symptoms until they get big, infected, or collide with adjacent structures. Keratin, sebaceous material, and occasionally hair or teeth can be seen in the cyst wall. When the cyst bursts or becomes infected, this may result in a greasy or cheesy discharge.[3]

Carilagenous tissue makes up chondroma, a benign tumour. Firm, springy, and somewhat hard because of cartilage. It grows slowly.[5]

Aneurysmal bone cysts predominantly affect long bones but can rarely involve facial bones like the mandible. They exhibit aggressive growth patterns, characterized radiologically by expansile, blood-filled cystic spaces separated by thin bony septa.[6]

Fibromas typically appear as a single, hard, well-defined, dome-shaped, or pedunculated mass that is 1–5 cm in diameter. Another name for them is irritated or traumatic fibromas. Lesions larger than 1 cm in diameter are uncommon, and most stay tiny. The presence of multinucleated, stellate-shaped cells in the connective tissue sets the giant cell fibroma apart from other fibromas histologically. It also has a somewhat nodular appearance.[7]

This broad differential underscores the importance of thorough clinical examination, imaging, and

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histopathological evaluation to arrive at a definitive diagnosis and appropriately tailor management strategies.

5. Investigation

Under general anaesthesia, the patient gave their consent for an excisional biopsy. The suggested course of treatment involved a transoral excisional biopsy performed under general anaesthesia and lesion aspiration using an 18-gauge needle.

6. Pathologic Diagnosis

Single piece of soft tissue specimen measuring 18×10×8 cm was received in formalin which was greyish white in colour and firm in consistency. Multiple H&E section reveals a well encapsulated neoplasm composed of tumour cells in two distinct patterns.The tumor is comprised of closely packed spindle cells with palisading and pointed nuclei suggestive of Schwann cells separated by eosinophilic fibrillar process forming verocay bodies (Antoni A) intermixed with hypocellular zones with less orderly arranged spindle cells with myxomatous background (Antoni B). Areas of hyalinization around blood vessels and thrombosed vessels are noted along with areas of hemorrhage and mild mixed inflammatory infiltrate predominantly lymphocytes and eosinophils Hence the histopathological diagnosis was Schwannoma.

7. Discussion

Verocay initially described Schwannoma in 1910, referring to this benign neurogenic tumour as neurinoma.[8] These slow-growing, encapsulated benign neoplasms, which are formed from the sheath cells that enclose myelinated nerve fibres, are also referred to as neurilemmoma, neurinoma, and perineural fibroblastoma.[9-11] Neurilemomas afflict both males and females. According to Quintarelli, men are impacted more frequently than women. According to some writers, women are more likely to get these tumours. Although they can develop at any age, these tumours are more common in the second and third decades of life. [10-14] The male patient we saw was in his fifth decade of life. In most cases, these tumours are hard and clearly defined. Soft, fluctuating masses might be the initial sign of large lesions.

Usually asymptomatic, they gradually increase until they impair function or appearance. Functional and aesthetic restriction resulted from the swelling in this instance, which had a soft to firm consistency and was gradually getting bigger. The vagus and cervical sympathetic chains are the nerves most frequently implicated in head and neck schwannomas.[15] Due to a delay in identification and, consequently, in surgical treatment, trigeminal schwannomas are uncommon and typically manifest as enormous masses.[16] Since there was no facial nerve paraesthesia and no motor or sensory functional loss following tumour excision, we think that the tumour in our case originated from the terminal trigeminal branch.

Numerous schwannoma variations, including common, glandular, plexiform, cellular, epithelioid, melanotic, and ancient schwannomas, have been described histologically.[17] Schwannoma has a unique microscopic appearance that is rarely mistaken for that of other tumours.[30] Schwannomas are unilobular masses with the margin of the neoplasm connected to the peripheral nerve, surrounded by a capsule of epineurium and remaining nerve fibres. A combination of two cellular patterns, Antoni A and Antoni B, make up the tumor's core.[18-21]

Compact spindle cells with twisted nuclei grouped in bundles or fascicles make up Antoni A regions. Nuclear palisading and the development of Verocay bodies, which are made up of two rows of nuclei and oval-shaped cell processes, are possible in highly differentiated regions. The less cellular and disorganised Antoni B variety represents degraded Antoni A regions made up of haphazardly distributed spindle or oval cells within a loosely textured, hypocellular matrix that is punctuated by fine collagen fibres, inflammatory cells, and microcysts. [18-21]

The tumor's immunohistochemistry analysis may yield positive results for the S100 antigen. The histologic study in this instance indicated a majority of Antoni A pattern with strong nuclear palisading and Verocay body formation; however, a small number of places also displayed Antoni B pattern. When compared to a conventional neurilemmoma, an ancient neurilemmoma shows gradual, benign degenerative changes. Vascular anomalies, atypical cells with pleomorphic nuclei, myxoid, cystic, oedematous, and fibrotic regions are all included in this alteration. The behaviour of an ancient neurilemmoma is similar to that of a benign neural tumour. [18,21]

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Microscopic analysis is used to categorise cellular schwannoma. Immunostaining provides support for the microscopic diagnosis of cellular schwannoma. Its enhanced cellularity, nuclear pleomorphism and hyperchromatism, absence of Verocay bodies, and often stronger mitotic activity set it apart from conventional schwannoma.[22] This instance involved a classical schwannoma.

In their study, Asaumi et al. [23] discussed how MRI, CT, and ultrasound can be useful diagnostic and therapeutic tools for estimating tumour boundaries and determining infiltration into surrounding structures. MRI was especially useful for displaying the encapsulated mass's interior characteristics. Although there are no helpful radiographic findings for soft tissue schwannomas, plain film radiography can be useful in confirming sites and assessing extent in the uncommon occurrence of intrabony schwannomas.[24]

The preferred course of treatment is surgical excision. The location of the tumour and the degree of its metastasis determine the best surgical strategy. To maintain proper function, the nonencapsulated version needs a border of healthy tissue and must be carefully separated from the affected nerve.[31] Malignant transformation of a benign schwannoma and recurrence are uncommon. In this instance, there was no visible link to the nerve, the mass was properly encapsulated, and it had a good prognosis and could be completely removed. One of the most frequent symptoms that patients report is swelling in the midface region, which can be caused by a variety of diseases.[25-27]

Finding the precise location of the tumor's origin, determining its size, and removing all sick tissue are crucial to the treatment's effectiveness. Schwannoma, despite being uncommon in this area, must be retained in the differential diagnosis.

8. Conclusion

In this case report, we have discussed the detailed clinical presentation, histopathological diagnosis, radiological examination, and surgical management of schwannoma presenting as a midface swelling. Despite its benign and slow-growing nature, schwannoma can cause functional and aesthetic concerns due to mass effect. Complete surgical excision was achieved with no postoperative neurological deficits, and the patient requires regular clinical and radiological follow-up to monitor for any signs of recurrence.

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PALATE -CASE REPORT. BULLETIN OF STOMATOLOGY AND MAXILLOFACIAL SURGERY. 2025 May 15;64–70.

Figures:

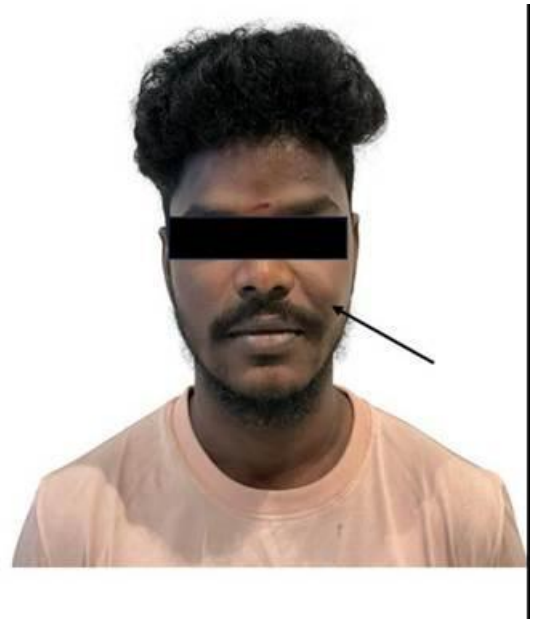
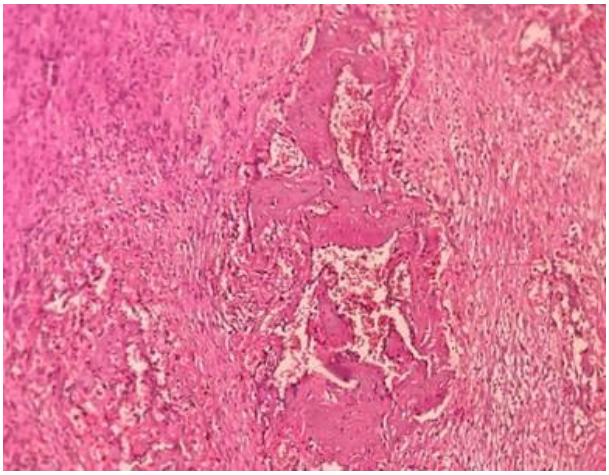
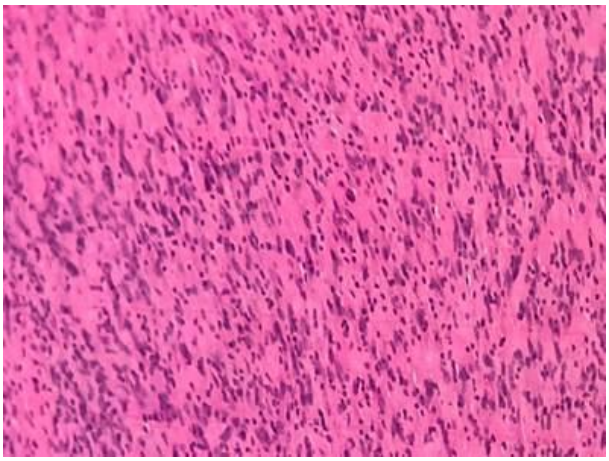


Figure 1a: Swelling present in midface region.

Figure 1b: Pre Op

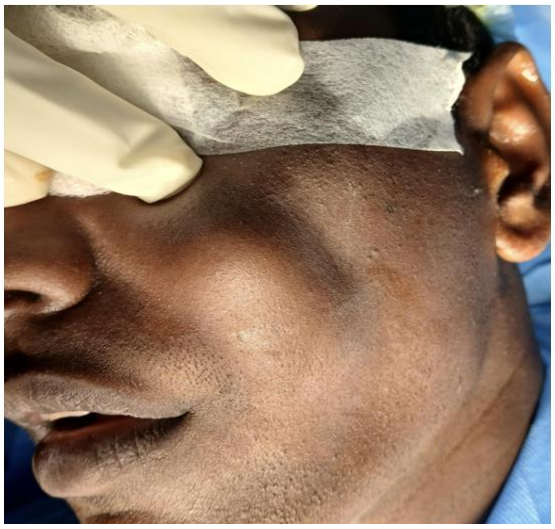


(a)



(b)

Figure 2a & 2b: Microscopic examination



(a)

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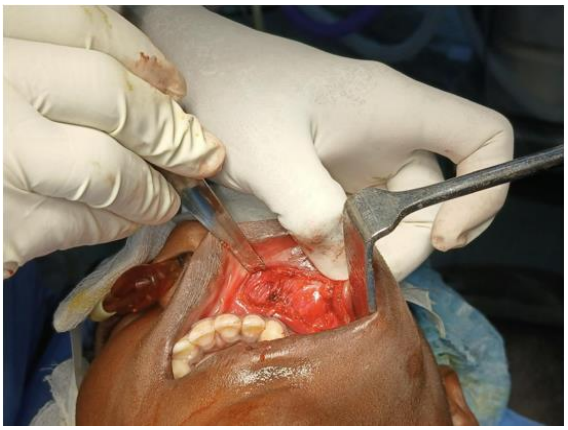
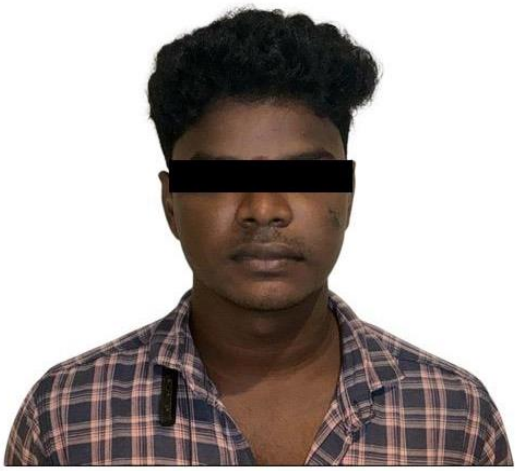


(b)

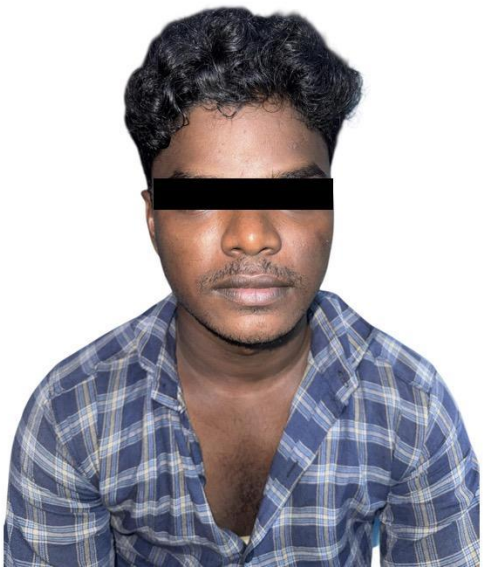
Figure 3a & 3b: Intra operative



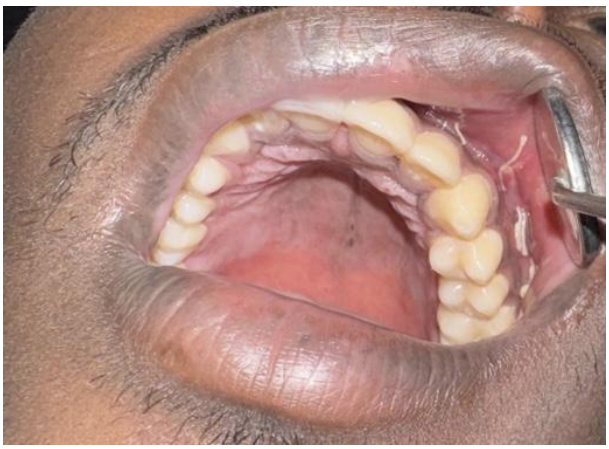
(a)

(b)

Figure: 4a & 4b: Post Op - 1 week.



(a)



(b)

Figure 5a & 5b: Post Op - 1 Month, & Post Op Intra oral - 1month.