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Original Research Paper

General Surgery

MIMICKING SOFT TISSUE TUMOUR- SPINDLE CELL LIPOMA

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ABSTRACT Spindle cell lipomas (SCL) are slow-growing benign adipocyte tumours that are most commonly seen in the upper back, posterior aspect of the neck, and shoulders[1]. Both genders are affected, but it is more prevalent in males between the ages of 40 and 70[1]. Spindle cell lipoma is a benign tumour that is frequently confused with liposarcoma. SCLs account for approximately 1.5 percent of all lipomatous tumours reported, making them uncommon[1]. They have a morphology similar to other benign and malignant fatty/spindle cell or myxoid lesions[2].

Microscopically, it is a complex mixture of lipocytes and uniform spindle cells embedded in a mucinous matrix and traversed by a variable number of birefringent collagen fibres[2].

Due to the unusual presentation and similar morphology of tumours, early diagnosis is critical; thus, diagnosis is based on clinical examination and confirmed by histopathological findings. Because SCL has a favourable prognosis, wide local excision is the treatment of choice[1].

This is a case report of a 52-year-old male with a similar presentation in the right upper limb.

KEYWORDS : benign tumor, fat laden lesion, arm swelling, histopathology, excision, immunochemistry

INTRODUCTION

Spindle cell lipoma is a rare, benign, slow-growing lesion that typically affects the upper back, shoulder, and posterior aspect of the neck. Spindle cell lipoma accounts for approximately 1-1.5% of all lipomatous tumours reported[1]. Both sexes are affected equally, with the peak incidence occurring in the fourth to sixth decades.

Due to the increased reporting of tumours with similar morphology and unusual presentation, diagnosis is made based on clinical examination and histopathological findings.

CD 34 and vimentin are positive immunohistochemically, while S100 is positive in a few spindle cell lipomas[2,3]. CD 34 positivity is characteristic of spindle cell lipoma, a subtype of liposarcoma that occurs infrequently. Surgical resection of the tumour in its entirety is the primary treatment option for patients with no evidence of recurrence or metastasis[1].

CASE STUDY

A 52-year-old male presented to our OPD with complaints of swelling in the right arm for eight months, which was insidious in onset and gradually progressed with no sudden increase in the size of swelling. There was no history of pain over the swelling, history of trauma, fever, bleeding or ulceration of the swelling and no similar swellings in the past.

On local examination:-

An oval shaped, firm, uniform swelling measuring 7x9cm present in the middle one third of anterolateral aspect of right arm, with no local rise of temperature or tenderness. Borders are well-defined and smooth surface. Skin over the swelling is normal and pinchable, there are no visible or palpable pulsations present over the swelling. There is no distal limb swelling. Restricted mobility of the swelling is present, on contraction of the muscle, the swelling is fixed and becomes prominent. No distal neurological deficit noted over the whole limb. All peripheral pulses are palpable (brachial, radial and ulnar). No restriction of movements at elbow, wrist joint or fingers. No regional lymphadenopathy.

Clinical Representation Of The Swelling In The Right Arm:-

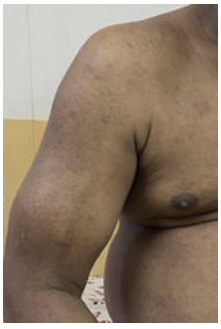

Figure 1 frontal view of the swelling

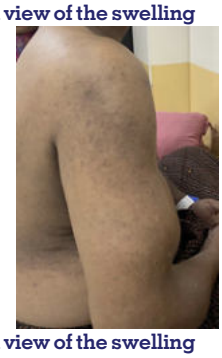

Figure 2 lateral view of the swelling

Investigations:-

Mri Of Right Elbow:-

Well-defined T1 and T2 heterogeneous hyperintense lesion with fat and soft tissue intensity seen in the intermuscular plane of brachialis muscle. The lesion closely abuts the radial nerve near the radial groove with suspicious loss of fat plane. Features suggestive of likely intramuscular lipoma-? Intraneural lipoma, with consideration of malignant transformation into liposarcoma.

Trucut Biopsy From The Tumour:-

Multiple tissue bits show lobules of mature adipocytes surrounded by spindle cell and fibrous stroma. Occasional

areas have adipocytes admixed with nerve fibres. Features suggestive of spindle cell lipoma.

Ct Thorax:-
There is no obvious evidence of metastasis noted in the lung, pleural effusion, consolidation, ground glass opacities.

Usg Abdomen And Pelvis:-
No evidence of any metastasis in the liver.

Mri Of Right Arm:-

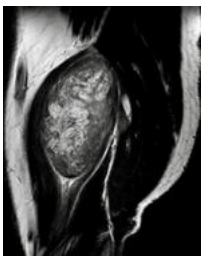

Figure 3 MRI Sagittal section of right arm

Figure 4 MRI coronal section of right arm

Patient was planned for excision biopsy under general anaesthesia.

Intraoperative Findings:-
-10X5CM well encapsulated tumour found in the **intramuscular plane with Radial nerve closely abutting within the tumour capsule**, which was delineated and separated from tumour and nerve was preserved. Tumour was excised in toto.

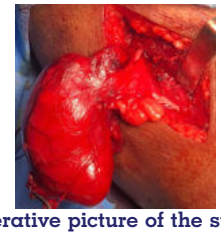

Figure 5 intraoperative picture of the swelling with Radial nerve encasement

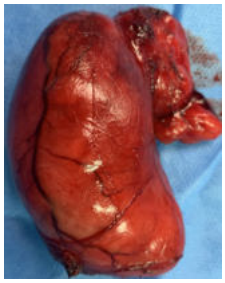

Figure 6 excision of the swelling in toto

Histopathological Report:-
A well circumscribed nodular soft tissue mass measuring 7.5x3x2.5cm with a nodule attached to the main mass of 4x2.5x1cm was sent for study, which showed grey white to grey yellow firm areas on cut section, sectional study shows benign spindle cells with indistinct cell borders with moderate cytoplasm and regular nuclei.

Cells are arranged in disorganised pattern inter separated with mature adipocytes.

Margins shows presence of tumour cells, suggestive of spindle cell soft tissue neoplasm with inflammatory component likely to be
1. Spindle cell lipoma.
2. Inflammatory myofibroblastic tumour.

Immunohistochemistry:-
Cd34 and Vimentin-Positive, Smooth muscle actin (SMA), muscle specific actin (MSA), Anaplastic lymphoma kinase (ALK) and S100-Negative.

On postoperative day 6 patient experienced tingling and numbness along the lateral aspect of the forearm and hand with no loss of power which gradually improved with regular physiotherapy. Patient was followed up for 6 months and had no complaints or recurrence.

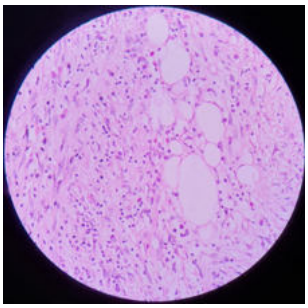

Figure 7 microscopic picture showing spindle cells with moderate cytoplasm and regular nuclei.

DISCUSSION

Lipomatous tumours are a common type of mesenchymal lesions, with lipoma being the most common type. Although lipomas originate from mesenchymal tissue, fibroblasts and preadipocytes are the most likely sources of Spindle cell lipomas[3]. While typical lipomas are easy to diagnose and treat, those with unusual presentation, such as spindle cell lipoma, may be misdiagnosed as other types of tumours, such as liposarcoma.

SCLs are composed of mature adipocytes, uniform spindle cells, collagen bundles, and occasionally a prominent myxoid matrix[1]; they also exhibit considerable variation, which complicates diagnosis.

MRI is useful for determining the extent of a lesion, not for making a specific diagnosis[6]. Spindle cell lipoma may share histological characteristics with other tumours, necessitating confirmation via immunohistochemistry and genetics[2,5]. Fine needle aspiration may also reveal adipocytes, spindle cells, and collagen fibres, but their proportions vary, making differentiation from myxoid lesions difficult[4].

CD34 positivity, combined with the absence of lipoblast, distinguishes SCLs from liposarcoma[2,3,5]. Additionally, they exhibit distinctive karyotypic aberrations that result in material being lost from the long arms of chromosomes 13 or 16[3]. Local excision alone is sufficient adjuvant management[2]. As the lesion rarely recurs.

SCLs can be multiple and occur in unusual locations such as the scalp, orbit, buccal mucosa, breast, and subungual tissues when they are hereditary.

CONCLUSIONS

Although the presentation is **atypical in its location**, and it can be easily **misdiagnosed as malignant soft tissue tumours**, due to its variable proportion of spindle cells and adipocyte components, which is different from the typical

presentation of spindle cell lipoma[4]. Therefore histopathological features, immunophenotype, and genetics aid in confirming the diagnosis[1,3]. In this case the tumour was differentiated from inflammatory myo-fibroblastoma using immunohistochemistry as SMA, MSA and ALK were negative.

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