
CASE REPORT**Large Lump on the Back: An Unusual Case of Giant Intermuscular Lipoma in Scapula Region**

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Abstract:

We are presenting a case of giant lipoma measuring more than 10 cm in length and patient had history of painless swelling on upper back which had a progressive increase in size over a period of 2 years and it was very unusual that most of the giant lipomas at this site usually involve nerve plexus leading to tingling and pain in the ipsilateral upper limb, however in our case patient had no history of pain. Sometimes lipoma can be seen located deeply instead of subcutaneous location which is its usual site. Deep seated lipoma can be seen mostly in limb or in trunk region. It can grow in between muscles (intermuscular type) or growing within muscle (intramuscular type) also known as infiltrating lipoma.

Keywords: Giant Lipoma, Magnetic Resonance Imaging, Computed Tomography, Surgical Management

Introduction:

Lipomas are also known as universal tumour as they can be found anywhere in the body. Usually, lipomas are located subcutaneous but deep seated lipoma can be seen mainly in trunk and lower limb region. Lipomas are benign tumour mainly composed of fat cells. They are soft rubbery in consistency [1]. Most common site of lipoma are back, abdominal wall, breasts and thighs [2]. Lipomas can be seen in all age groups but usually appear between 40-60 years of age group. They are

asymptomatic and can of various types based on their location like subsynovial, subendocardium, intermuscular, subfascial, parosteal, subserous, submucous, intra-articular and intramuscular [3]. A tumour is classified as a giant lipoma if the size is greater than 10 cm in one dimension or the weight greater than 1000 g [4]. Ultrasonography helps in early diagnosis. We present a case of a large intermuscular lipoma, magnetic resonance imaging was done to look for its extension and to rule out malignancy. Surgical intervention was required as there was discomfort caused by large mass, surgical intervention is very difficult if its extension is involving brachial plexus. Treatment of large lipoma includes steroid injection, surgical excision and in some cases liposuction [3].

Case Report:

A 52 year old male patient was referred from outside health care centre to the Outpatient Department (OPD) of Radio-diagnosis atour Acharya Vinoba Bhave Hospital, Wardha. Patient complained of a painless swelling which was growing gradually over a period of 2 years. There was no limitation in range of motion around shoulder joint, just patient had discomfort when he is lying in supine position. There was no history of any neurological discomfort.

On clinical examination, mobile mass of approximate size $10.2 \times 4.3 \times 7.2$ cm, was palpated adjacent to right scapula with its extension along the thoracic vertebrae. The mass was soft in consistency, non-tender and there was no evidence of local rise of temperature.

On plain radiograph of right scapular region soft tissue mass was seen with no calcification or bone involvement (Fig.1). On ultrasonography, oval well defined compressible encapsulated mass with echo-pattern similar to fat was seen in between muscular planes of trapezius and rhomboid major muscle belly. There was infiltration of lesion into the muscle belly. There was no calcification within mass and it was not taking colour flow on Doppler showing no vascularity. Linear internalechogenic incomplete stripes was noted in the mass.

On computed tomography, well circumscribed lobulated low attenuation mass of HU-70 to -110 with no calcification within of approximate size $10.8 \times 4.7 \times 8.6$ cm was noted in intermuscular plane of trapezius and rhomboid major in the right upper back. The lesion was extending in between muscle fibres of latissimus dorsi anteriorly. The lesion was extending from T1 to T4 vertebrae level. The para-vertebral muscles appear normal. The lesion was 10 mm from the skin at the centre of the lesion. There was no soft tissue component noted.

For further investigation and better visualization of anatomy adjacent to the lesion operating surgeon wanted magnetic resonance imaging. On magnetic resonance imaging, well defined lobulated mass of altered signal intensity appearing hyperintense on T1WI and T2WI, hypointense signal on sequence with fat saturation approximate size $10.8 \times 4.7 \times$

8.6 cm was noted in intermuscular plane of trapezius and rhomboid major in the right upper back.

An excision biopsy of the tumour was done and on histopathological examination it turned out to be a lipocytic lipoma. Under general anaesthesia, arciform cutaneous incision was done on the dome of the mass with careful dissection through a cleavage plane allowing complete excision of the mass. The histological study of the excision specimen measured more than 10 cm and revealed lipocytic lipoma without signs of malignancy as diagnosis.



Fig. 1: X-Rays of the Cervical Spine and Upper Back showing Well Defined Area of Lipolucency in Subcutaneous Plane with No Areas of Calcification and Bony Erosion

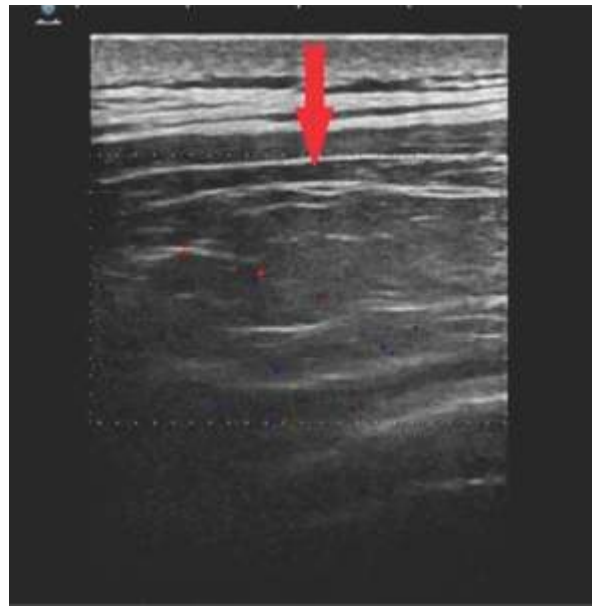


Fig. 2: Ultrasound and Colour Doppler showing Oval Well Defined Compressible Encapsulated Mass with Echo-Pattern Similar to Fat with No Calcification within Mass and No Colour Flow on Doppler Suggesting No Vascularity. Linear Internal Echogenic Incomplete stripes Noted in the Mass.

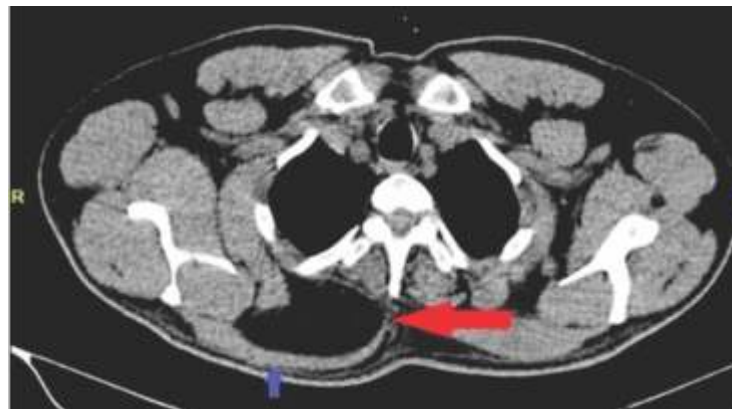


Fig. 3: CT Scan Axial Image showing A Well Circumscribed Lobulated Low Attenuation Mass (Red Arrow) of HU-70 to -110hu below the Trapezium Muscle (Blue Arrow) on the Right Upper Back which Appears Thinned Out

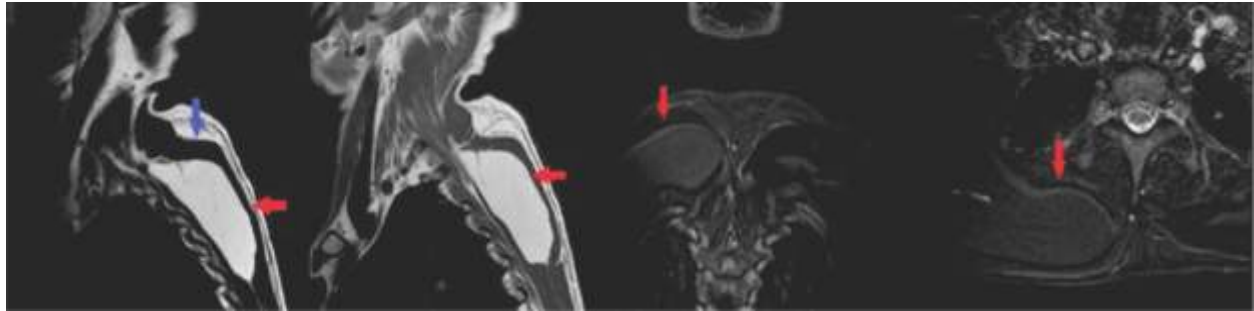


Fig. 4: MRI T2WI & T1WI Sagittal showing Well Defined Lobulated Mass Appearing Hyperintense (Red Arrow) in Intermuscular Plane of Trapezius (Blue Arrow) and Rhomboid Major in the Right Upper Back. PD Fat Saturation Coronal & Axial STIR Image where Lesion Appears Hypointense (Red Arrow)



Fig. 5: Large Mass (Red Arrow) in the Right Upper Back with No Signs of Inflammation. Intra-operative Images showing Arciform Cutaneous Incision on the Dome of the Mass and Completely Excised Mass which is Yellow Consistent with Lipoma and On Histological Study. It was Lipocytic Lipoma without Signs of Malignancy

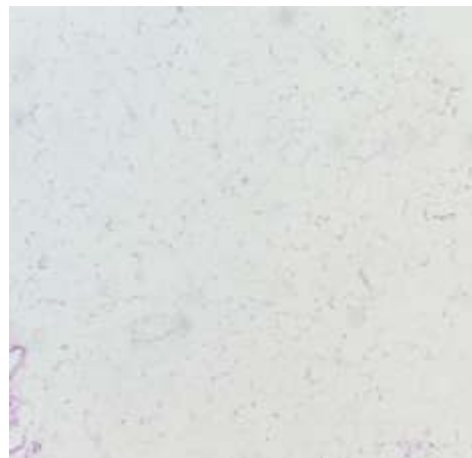


Fig. 6: Histopathological Examination Confirmed a Benign Lipoma with No Evidence of Any Malignant Transformation

Discussion:

Lipoma is a benign tumour consisting of mature fat [5]. It is often painless and usually results in a soft, regular and mobile tumour. Sometimes it can be recognized by the clinical test by which in case of lipoma the application of ice on the mass causes its solidification. Lipomas are benign tumours of extra neural origin and account for about 16% of mesenchymal tumours [6]. According to the World Health Organization (WHO) committee for classification of soft tissue tumours, they are classified into three major groups: benign, intermediate (locally aggressive) and malignant [7]. According to the WHO committee for classification of soft tissue tumours [6], they are classified into nine entities: lipoma, lipomatosis, nerve lipomatosis, lipoblastoma, angioliipoma, soft tissue myoliipoma, chondroidlipoma.

These benign adipocyte lesions can affect the bone: intraosseous lipoma, para-osteal lipoma. They can also affect the joints and tendons, either in focused form, or more commonly diffuse (arboreal lipoma). They are qualified as giant when the excision piece exceeds 10 cm in diameter

or 1000 gram of weight [3]. They appear mostly around the fifth and sixth decade. Finally, in some cases, they may come from juxta-articular regions or near the periosteum (para-osteolipoma), they can reach the bone and cause cortical hyperostosis [8]. Clinically, superficial lipomas are often asymptomatic, slow-growing, fluctuating soft, lobulated, and motile. When they are localized in anatomical parades, they can be at the origin of a nerve compression causing sensitive-motors pains and disturbances downstream. Because of their size, they can lead to a limitation of mobility, like the case of our patient. The radiological investigations make the diagnosis of the lipoma in 71% of the cases. Computed tomography and especially nuclear Magnetic Resonance Imaging (MRI) are useful in evaluating these lesions. MRI is the gold standard for soft tissue tumours because of its high sensitivity. It specifies the nature of the lesion, its local extension and its relationship with the vasculo-nervous elements. The characteristic aspect of the lipoma is a well-limited image in hyper signal on the T1 and T2 sequences, with

Benign	Intermediate (locally aggressive)	Malignant
Lipoma	Atypical lipomatous tumour/ well-differentiated liposarcoma	Dedifferentiated liposarcoma
Lipomatosis		Myxoid liposarcoma
Lipomatosis of the nerve		Pleomorphic liposarcoma
Lipoblastoma Angioliipoma		Liposarcoma, not otherwise specified
Myoliipoma of the soft tissue		
Chondroid lipoma		
Spindle cell lipoma		
Hibernoma		

reduction of the signal on the fat suppression sequences. In some cases like ours, the image has fibrous septae, sometimes calcifications. After injection of gadolinium, the signal of the fibrous septa is moderately enhanced, but the fat keeps the same signal. The differential diagnosis is with other soft-tissue tumors such as ganglion cysts, giant-cell tumors, myxomas, angioliipomas, lipo-fibroma-intraneural and lipo-sarcoma [8-9]. This latter one is the differential diagnosis with the highest risk for the patient. It is the most common adult soft tissue sarcoma, with a frequency ranging from 1.1 to 2.5 / 1000 000 with a peak between 50 and 70 years. It develops from subcutaneous fat or cellulite space, sometimes even from a pre-existing or recurrent lipoma. The identification and dissection of the vasculo-nervous elements must be careful to avoid iatrogenic lesions. The excision should be as complete as possible to

minimize the risk of local recurrence. However, these remain exceptional [9].

Conclusion:

This case report described adult male patient with large, intermuscular lipoma in the right scapular region extending from T1 to T4 vertebrae. The patient presented without pain but he had discomfort while lying in supine position because of location of large lipoma. Lipoma are usually asymptomatic until they become very large and causing pressure effect on adjacent muscles. After clinical examination and other modalities of investigation like computed tomography, ultrasonography and magnetic resonance imaging excision of tumour was done. Ultrasonography and magnetic resonance imaging help in knowing exact location of lipoma and its extension allowing surgeons to complete excision of lipoma and allowing for optimal treatment.

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