

## Case Report

# An intramuscular lipoma in the medial head of triceps brachii muscle simulating nerve sheath tumour of ulnar nerve: a rare case report

Tanveer A. Bhat<sup>1\*</sup>, Hisham Alokaili<sup>1</sup>, Renad O. Alkadi<sup>2</sup>, Abdulla S. Altamimi<sup>1</sup>,  
Mohammed Y. Mirza<sup>1</sup>

<sup>1</sup>Department of Plastic Surgery and Burns, <sup>2</sup>Department of Pathology, KSMC, Riyadh, Kingdom of Saudi Arabia

**Received:** 09 August 2023

**Accepted:** 06 September 2023

### \*Correspondence:

Dr. Tanveer A. Bhat,

E-mail: Drtab1014@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

Lipomas are the most frequent benign mesenchymal neoplasms of mature fat cells found commonly on the back and upper extremities usually occupying the subcutaneous plane. Intramuscular lipomas are rare and may mimic malignant lesions. Magnetic resonance imaging can not only identify and localise these tumours but also differentiate them from malignant liposarcomatous lesions. Here we present a case of intramuscular lipoma of the medial head of Triceps brachii in a 70 year old male clinically mimicking as nerve sheath tumour of the ulnar nerve.

**Keywords:** Lipoma, Intramuscular, Triceps

### INTRODUCTION

Lipomas are most common soft tissue tumours composed of mature adipocytes with an estimated incidence of about 16%.<sup>1-3</sup> These are commonly found in the superficial subcutaneous tissue of the extremities and trunk.<sup>4</sup> Intramuscular lipomas are extremely rare and were first described in 1946.<sup>5</sup> Before that in 1853, Paget described a lipoma infiltrating into the trapezius muscle. Later, Greenberg et al recognized that infiltrating lipomas may be either intermuscular or intramuscular using the classification of Moriconi, which differentiated between lipomas based on whether they were located between or within the muscles.<sup>6,7</sup> Intramuscular lipomas have been commonly investigated and categorized in the same group as other deep-seated and superficial lipomatous lesions.<sup>8,9</sup> Intramuscular lipoma is a relatively uncommon condition and accounts for just over 1.8% of all primary tumours of adipose tissue and less than 1% of all lipomas.<sup>10,11</sup> The exact aetiology and pathogenesis of intramuscular lipomas remains unclear, while some say that similar to other lipoma types, these lipomas most likely directly arise from multipotent mesenchymal cells and have neoplastic pathogenesis. Reactive pathogenesis

secondary to trauma, chronic irritation, obesity, developmental disorders, endocrine, dysmetabolic and genetic factors have also been proposed.<sup>3,12-14</sup>

### CASE REPORT

A 70-year-old male, known case of ischaemic heart disease on treatment, presented with a painless swelling on inner aspect of the left arm just above the elbow joint (Figure 1). It was insidious in onset and progressively increasing in size. No history of any other swelling in the body. On local examination, the swelling was found just above the medial epicondyle on the medial aspect of the arm with healthy overlying skin. It was well palpable, non-tender, firm in consistency, cylindrical in shape with the long axis along the ulnar nerve, having smooth surface and well-defined edges. Mobility was more in the medio-lateral than in the anteroposterior plane. However, the slip sign was negative. No neurosensory deficit was found distally. On mild compression of the swelling patient was feeling tingling along the sensory ulnar nerve distribution in hand, and the Tinel's sign was positive. A clinical diagnosis of nerve sheath tumour of the ulnar nerve was made. Ultrasound done showed a subcutaneous

lipoma (Figure 6). Since there was a disparity between the clinical diagnosis and the ultrasound findings we advised a magnetic resonance imaging (MRI) test was advised which was suggestive of a subcutaneous intramuscular lipoma. The patient was prepared for excision of the swelling as day care surgery (Figure 7). Regional anaesthesia was given and patient was operated under tourniquet control. Intraoperatively we found a fatty lesion within the medial head of the triceps brachii muscle with overlying muscle fibres stretched out (Figure 2 and 3). Complete excision of the swelling was done by splitting the muscle fibres (Figure 4 and 5). Absolute hemostasis was achieved and the wound was closed in multiple layers. The specimen was sent for histopathology study (Figure 5). A compression dressing was done and patient was discharged after full recovery and advised to follow up outpatient department (OPD). The histopathology report showed intramuscular lipoma.



**Figure 1: Intra-operative picture showing marking for the incision for the excision of the lipoma.**



**Figure 2: Intra-operative picture showing the dissection of the superficial triceps muscle fibres encasing intramuscular lipoma.**



**Figure 3: Intra operative picture showing the intramuscular lipoma being dissected out from triceps muscle fibres.**



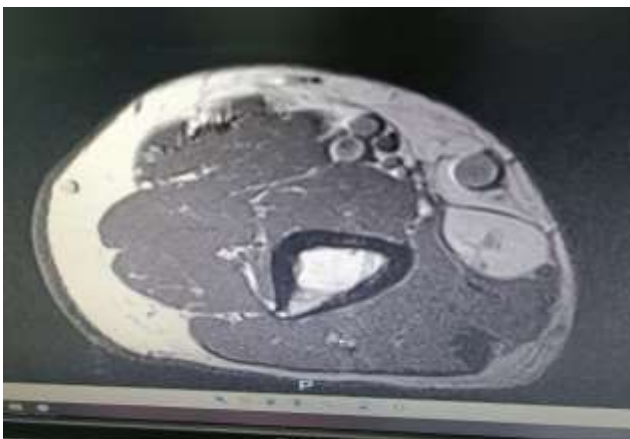
**Figure 4: Intraoperative picture showing the ulnar nerve after the excision of the lipoma.**



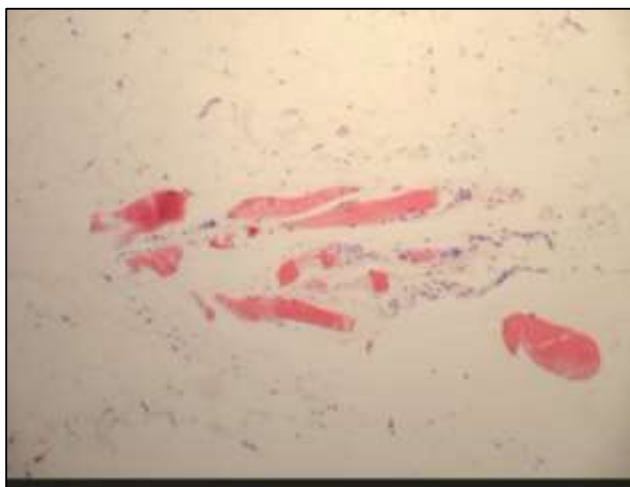
**Figure 5: Picture showing the excised lipoma.**



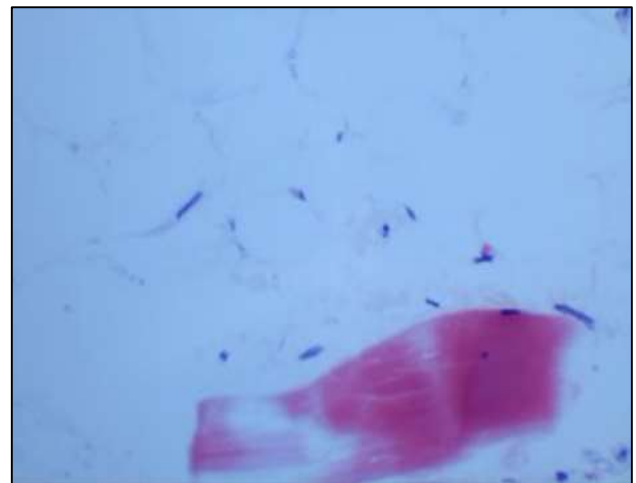
**Figure 6: Ultrasound of the same patient showing the 3.1×1.13 cm heterogeneous hyperechoic lesion in the medial aspect of the elbow.**



**Figure 7: MRI with axial cut of the same patient showing well defined oval shaped encapsulated lesion around 3.2×2×1.3 cm in size with almost homogeneous fat suppression images within the triceps muscle.**



**Figure 8: Microscopic picture showing mature adipocytes admixed with muscle fibres.**



**Figure 9: Magnified view (40×) showing the mature adipocytes admixed with muscle fibre.**

## DISCUSSION

The diagnosis of subcutaneous lipoma is mainly clinical however imaging techniques are used to support the diagnosis and histopathology to confirm it. On clinical examination there is presence of classic slip sign which is pathognomonic of the lipoma. In our patient when we palpated the swelling between the fingers its edges did not slip making the slip sign negative. On magnetic resonance imaging (MRI) the characteristic features of lipoma are non-invasive homogeneous mass with fat signal intensity encased by a pseudocapsule.<sup>15</sup> In our patient the MRI showed an oval encapsulated fatty lesion within the medial head of the triceps muscle with homogeneous fat suppression T2 weighted image sequences with no enhancement on post gadolinium study. The advantage of MRI is that besides helping in the diagnosis, it can differentiate a deep-seated lipoma from a well-differentiated liposarcoma because of the increased vascularity seen in septal structures in the latter. Ultrasonography can also be used in the diagnosis of the lipomas.<sup>3</sup> Ultrasound in our patient showed hyperechoic heterogeneous mass lesion with echogenicity similar to that of fat tissue. Histo-pathologically the intramuscular lipomas can be subclassified as infiltrative, well-circumscribed, or mixed. In the infiltrative type there is no capsule encasing the mature adipose tissue which is admixed with skeletal muscle and fibroblastic elements.<sup>16,17</sup> While as in the well-circumscribed type there is discrete mass of uniform mature adipocytes encapsulated by a delicate fibrous stroma without any muscle fibre entrapment.

The treatment of choice for lipoma is surgical excision which is usually complete and easy to do owing to their encapsulated nature and local recurrence is very rare. However, for intramuscular lipomas the excision is not only technically challenging but also may require removal of some surrounding muscle to ensure adequate margins to decrease the recurrence. Histopathology

examination of the specimen and if required immunohistochemistry should be done to rule out any possible malignancy while dealing with intramuscular lipomas excision.<sup>15,18,19</sup>

## CONCLUSION

Intramuscular lipomas are very rare and probably this is the first case report of their occurrence within the triceps brachii muscle mimicking nerve sheath tumour of the ulnar nerve. MRI is very helpful investigation in their evaluation. Complete surgical excision followed by histopathology examinations of the specimen should be routinely done for these rare tumours to confirm the diagnosis and to avoid the recurrence.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Allen B, Rader C, Babigian A. Giant lipomas of the upper extremity. *Can J Plast Surg.* 2007;15(3):141.
2. Copcu E, Sivrioglu N, Culhaci N. Axillary giant lipoma. *Plast Reconstr Surg.* 2004;114(7):1982-83.
3. Vandeweyer E, Scagnol I. Axillary giant lipoma: a case report. *Acta Chir Belg.* 2005;105(6):656-7.
4. Phalen GS, Kendrick JI, Rodriguez JM. Lipomas of the upper extremity: A series of fifteen tumors in the hand and wrist and six tumors causing nerve compression. *Am J Surg.* 1971;121(3):298-306.
5. Regan JM, Bickel WH, Broders AC. Infiltrating benign lipomas of the extremities. *West J Surg Obstet Gynecol.* 1946;54:87-93.
6. Greenberg SD, Isensee C, Gonzalez-Angulo A, Wallace SA. Infiltrating lipomas of the thigh. *Am J Clin Pathol.* 1963;39:66-72.
7. Wurlitzer F, Bedrossian C, Ayaia A. Problems of diagnosing and treating infiltrating lipomas. *Am Surg.* 1973;39:240-3.
8. Billing V, Mertens F, Domanski HA, Rydholm A. Deep-seated ordinary and atypical lipomas: histopathology, cytogenetics, clinical features, and outcome in 215 tumours of the extremity and trunk wall. *J Bone Joint Surg Br.* 2008;90:929-33.
9. Ramos-Pascua LR, Guerra-Álvarez OA, Sánchez-Herráez S, et al. Intramuscular lipomas: Large and deep benign lumps not to be underestimated. Review of a series of 51 cases. *Rev Esp Cir Ortop Traumatol.* 2013;57:391-7.
10. Fletcher CD, Martin-Bates E. Intramuscular and intermuscular lipoma: neglected diagnoses. *Histopathology.* 1988;12:275-87.
11. Lee JH, Do HD, Lee JC. Well-circumscribed type of intramuscular lipoma in the chest wall. *J Cardiothorac Surg.* 2013;8:181.
12. Bjerregaard P, Hagen K, Daugaard S, Kofoed H. Intramuscular lipoma of the lower limb. Long-term follow-up after local resection. *J Bone Joint Surg Br.* 1989;71:812-5.
13. Pichierrì A, Marotta N, Raco A, Delfini R. Intramuscular infiltrating lipoma of the longus colli muscle: a very rare cause of neck structures compression. *Cent Eur Neurosurg.* 2010;71:157-9.
14. Copcu E. Can intramuscular lipoma have a post-traumatic origin? *Br J Dermatol.* 2003;149:1084-5.
15. Yang YJ, Damron TA, Cohen H, Hojnowski L. Distinction of well-differentiated liposarcoma from lipoma in two patients with multiple well-differentiated fatty masses. *Skeletal Radiol.* 2001;30(10):584-9.
16. Shah NB, Chang WY, White VA. Orbital lipoma: 2 cases and review of literature. *Ophthal Plast Reconstr Surg.* 2007;23:202-5.
17. Hristodulopulos V, Medel R. Intramuscular lipoma of the superior rectus muscle. *Ophthal Plast Reconstr Surg.* 2016;32:e52-5.
18. Behrend M. Intermuscular lipomas. *Am J Surg.* 1929;5:857-60.
19. Harrington AC, Adnot D. Infiltrating lipomas of the upper extremities. *J Dermat Surg Oncol.* 1990;16(9):834-37.

**Cite this article as:** Bhat TA, Alokaili H, Alkadi RO, Altamimi AS, Mirza MY. An intramuscular lipoma in the medial head of triceps brachii muscle simulating nerve sheath tumour of ulnar nerve: a rare case report. *Int Surg J* 2023;10:1669-72.