

## Case Report

# Giant infiltrating lipoma of the thigh: a rare case report and literature review

Damodar Chatterjee\*, Debashish Bhattacharya

Department of Surgery, Agartala Government Medical College, Agartala, Tripura, India

**Received:** 9 August 2013

**Accepted:** 17 August 2013

**\*Correspondence:**

Dr. Damodar Chatterjee,

E-mail: damodar.chatterjee@gmail.com

© 2013 Chatterjee D et al. 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

Giant infiltrating lipoma of thigh, infrequently observed. Subcutaneous and gastrointestinal lipomas are not infrequently encountered, but huge, encapsulated or infiltrating lipomas of the thigh are rarely observed. They are of interest because causing functional limitation and due to their tendency to recur after surgical removal and their potential hazard of malignant transformation.

The clinical findings and surgical management of a 72 year old man with a large infiltrating lipoma of thigh are reported here.

**Keywords:** Lipoma, Infiltrating, Giant

### CASE REPORT

An elderly patient of 72 years, male admitted in the hospital from a remote village of Tripura state with a huge swelling involving the mediolateral and posterior aspect of the right thigh extending from the groin crease up to the knee. This swelling was present for the last 30 years started as a small swelling and gradually increased up to the present size of 30cm x 20cm x 10cm (Figure 1). Patient was unable to walk properly due to the weakness of the muscles of the thigh. Fine needle aspiration cytology was done revealed typical lipoma and X-ray of the right thigh normal bony structure. Surgical excision of the swelling was performed under spinal anaesthesia after preparing the patient. On exploration the swelling was consisting of fat globules without any surrounding capsule and it was infiltrating into the different layers of the thigh muscles (Figure 2). The mass with some skin which was redundant was resected meticulously from the thinning muscles of the thigh. The loss of blood during the operation was about 100ml. The nerve bundle and vascular structures are preserved. After resection the weight of the swelling was

measured and found to be 5.25 kg (Figure 2). A suction drain was put and wound closed in layers. The postoperative recovery was uneventful (Figure 3). On follow up for the last one year, there was no recurrence or malignant changes or lymphedema are noticed. No functional disorder was found.



**Figure 1: Preoperative picture of lipoma thigh.**



**Figure 2: Excised mass.**



**Figure 3: Postoperative picture.**

## DISCUSSION

Lipomas are frequent benign soft tissue tumours classified as superficial or deep.<sup>1</sup> Clinically, lipomas appear as well delineated asymptomatic lesions<sup>2</sup> and in some cases they can reach a considerable size.<sup>3</sup> There have been several reports of giant lipomas in the literature.<sup>4-11</sup> The aetiology of the lipoma are unclear. They have been known to be both sporadic and inherited.<sup>12,13</sup> Lipomas are the most common (2.1 per 1,000 people).<sup>14</sup> Giant lipomas are occasional mesenchymal tumours that are usually located in deep body plane.<sup>16</sup> The mechanism for the uncontrolled growth of such lipomas remains unclear.<sup>14</sup> However, it has been suggested that after a blunt trauma, rupture of the fibrous septa, which prevents fat migration, accompanied by tears in the anchorage between the skin and the deep fascia, may result in proliferation of adipose tissue.<sup>15</sup> Very large lipomas have been reported in the literature,<sup>17,18</sup> such lipomas may be found in any part of the body, though they are extremely rare.<sup>4</sup> When located close to vital structures, giant lipomas may cause functional limitations on account of their excessive size and weight<sup>19,20</sup> or lymphoedema, pain or nerve compression syndrome.<sup>5,16</sup> In our case patient had weakness of the limb due to the heaviness but no nerve compression, lymphoedema and pain were present. From

their review of the literature, Phalen et al<sup>16</sup> found peripheral nerve compression by lipomas to be rare. Thus, it is clear that the mass effect of a lipoma is due not so much to its size as to its location. Malignant lesions such as high grade liposarcomas show no plane of cleavage between the mass and adjacent muscle layers and they present infiltrative growth and tumour digitations.<sup>21,22</sup> The present lesion presented several characteristics indicating malignancy such as the large size, ill-defined capsule and poorly defined margins, but at the same time some benign characteristics such as a fat content greater than 75%, the absence of vascularization and mainly regular contours. Malignant transformation of a lipoma into a liposarcoma is rare<sup>23</sup> as is the sarcomatous transformation of giant lipomas.<sup>16,24</sup> Some reports have suggested that large tumours (>10 cm) are more likely to contain sarcomas, which makes a preoperative biopsy advisable in such cases.<sup>25, 26</sup> The intramuscular location of a lipoma is also considered to be a risk factor for malignancy.<sup>25,26</sup> It is important to differentiate giant lipomas from liposarcomas, malignant fibrous histiocytomas and other benign soft-tissue lesions, such as old muscle rupture, epidermoid cysts, angioliomas, deep haemangiomas and lipoblastomatosis.<sup>14</sup> Indeed, the main concern in the diagnosis of giant lipomas should be the exclusion of malignancy.<sup>18</sup> It has been suggested that a liposarcoma should be considered when a fatty subcutaneous tumour is more than 10 cm in diameter and has grown rapidly in recent months.<sup>27,28</sup> Treatment for giant lipomas is complete excision.<sup>20</sup> As giant lipomas usually have a well-defined pseudo-capsule,<sup>4,16,20</sup> dissection of these benign neoplasms is relatively straightforward. There was no well-defined capsule in our case and also the lesion was infiltrating into the muscles of the thigh and so, straight forward excision was not possible. Some part of thigh skin was decided to remove as was redundant after removal of the tumour to obtain a good esthetic and functional result.

Liposuction for the treatment of giant lipomas has also been reported.<sup>9,12</sup> However, as differential diagnosis between lipomas and liposarcomas is exceedingly difficult on the basis of clinical findings alone,<sup>29</sup> liposuction was not recommended in our situation and there was likelihood of recurrence after liposuction.

The recurrence rate in a series by Chung and Enzinger was 14% and was attributed to incomplete removal of the tumour.<sup>30</sup> There was no recurrence after one year of follow up in our case.

## CONCLUSION

Giant infiltrating lipomas of the thigh are rarely observed. These lesions are of interest because of the tendency to recur following surgical excision as well the potential hazard of malignant transformation. Weakness or aching results owing to mechanical interference with the muscle action. The surgery is sometime challenging and needs a meticulous technique.

*Funding: None*

*Conflict of interest: The authors have no conflicts of interest to disclose*

*Ethical approval: Not required*

## REFERENCES

1. Righi A, Pantalone O and Tagliaferri G. Giant lipoma of the thigh: A case report. *J Ultrasound* 2012;15(2):124-126.
2. Alaggio R, Coffin CM, Weiss SW, Brdge JA and Issakov J : Liposarcomas in young patients: a study of 82 cases occurring in patients younger than 22 years of age. *Am J Surg Pathol*: 33(5): 645 – 658, 2009.
3. Whittle C, Cortes M, Baldassare G and Castro A. Subgaleallipomas: ultrasound findings. *Rev Med Chil*: 136(3): 334 – 337, 2008.
4. Hakim E, Kolander Y, Meller Y, Moses M and Sagi A: Giant lipomas. *Plast Reconstr Surg*: 94: 369 – 371, 1994.
5. Davis C and GruhnJG : Giant lipoma of the thigh. *Arch Surg*: 95 : 151 – 156, 1967.
6. Dionne GP and Thomas AS : Infiltrating lipomas and angiolipomas revisited. *Cancer* : 33: 732 – 738, 1974.
7. Terzioglu A, Tuncali D, Yuksel A, Bingul F and AslanG : Giant lipomas: a series of 12 consecutive cases and a giant liposarcoma of the thigh. *Dermatol Surg* : 30(3): 463 – 467, 2004.
8. Hirshowitz B and Golden S : Giant lipoma of the back and neck: case report. *Plast Reconstr Surg*: 52: 312 – 314, 1973.
9. Nichter LS and Gupta BR : Liposuction of giant Lipoma. *Ann Plast Surg* 24: 362 – 365, 1990.
10. Rodriguez IF, Shuster BA and Milliken RG : Giant lipoma of the breast. *Br J Plast Surg* : 50: 263 – 265, 1997.
11. Rubenstein R, Roenigk HH, Garden JM et al: Liposuction for lipomas. *J Dermatol Surg Oncol*: 11: 1070 – 1074, 1985.
12. Pinski KS and Roenigk HH Jr : Liposuction of lipomas. *Dermatol Clin* : 18 : 483 – 484, 1990.
13. Lefell DJ and Braverman IM : Familial multiple lipomatosis:report of a case and review literature. *J Am Acad Dermatol*: 15: 275 – 279, 1986.
14. Rydholm A, Berg NO. Size, site and clinical incidence of lipoma: factors in the differential diagnosis of lipoma and sarcoma. *Acta Orthop Scand*: 54: 929 – 934, 1983.
15. Meggit BF and Wilson JN : The battered buttock syndrome: Fat fracture: a report on a group of traumatic lipoma. *Br J Surg*: 59: 165 – 169, 1972.
16. Phelen GS, Kendrick JI and Rodriguez JM : Lipomas of the upper extremity: a series of 15 tumours in the hand and wrist and six tomours causing nerve compression. *Am J Surg* : 121 : 260 – 267, 1984.
17. Harrington AC, Adnot J and ChesserR : Infiltrating lipomas of upper extremities. *J Dermatol Surg Oncol* : 16: 834 – 837, 1990.
18. Zografos GC, Kourinis I, Kalliopi P et al: Giant lipoma of thigh in a patient with morbid obesity. *Plast Reconstr Surg*: 109: 1467 – 1468, 2002.
19. Guerrissi J, Klersfeld D, Sanpietro G and Veldiviesoj : Limitation of thigh function by a giant lipoma. *Plast Reconstr Surg* : 94: 410 – 411, 1994.
20. Higgs PE, Young VL, Schuster R and Weeks PM : Giant lipomas of the hand and forearm. *South Med J* : 86: 887 – 890, 1993.
21. Dei Tos AP: Liposarcoma: a new entities and evolving concepts. *Ann Diagn Pathol*: 4(4) : 252 – 266, 2000.
22. Weiss SW :Lipomatous tumours. *MonogrPathol* : 38: 207 – 239, 1996
23. Cotran RS, Kumar V and Robbins SL : In : Tumours of Adepose tissue. *Robbin's Pathological Basis of Disease*. Philadelphia. PA : Saunders, pp. 1374 – 1412, 1989.
24. Takagi H, Kato K, Yamada E and SuchiT : Six recent liposarcoma including largest to date. *J Surg Oncol* : 26 : 260 – 267, 1984.
25. Sanchez MR, Golomb FM, Moy JA and PotzkinJR : Giant Lipoma: case report and review of the lipterature. *J Am Acad Dermatol* : 28 : 266 – 268, 1993.
26. Brasfield RD and Das Gupta TK : Liposarcoma . *CA Cancer J Clin*: 20: 3 : 1970.
27. Celik C, Karakousis CP, Moore R and Holyoke ED : Liposarcoma: prognosis and management. *J Surg Oncol* : 14 : 245 – 249, 1980.
28. Deutsch AA, Bachav A and Reiss R :Hemipelvectomy for Liposarcoma: an unusual case and course. *Post Med J* : 60 : 70 – 72, 1984.
29. Marco M, Maria GO, Paota P, Rosaria LP, Daniele I and Nicolo S: *Anticancer Research*: 26: 3649 – 2654, 2006.
30. Chung EB, Enzinger FM. Benign Lipoblastomatosis. An analysis of 35 cases. *Cancer* 1973;32(2):482-92.

DOI: 10.5455/2320-6012.ijrms20131150

**Cite this article as:** Chatterjee D, Bhattacharya D. Giant infiltrating lipoma of the thigh: a rare case report and literature review. *Int J Res Med Sci* 2013;1:581-3.