

# Giant Lipomatous Lesion of the Thigh With Retroperitoneal Extension: Case Series

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## SUMMARY

Giant lipomatous lesions of the thigh swelling with extension into retroperitoneum are rare. Lesions can be malignant or benign and can have similar clinical presentation. Treatments options differ and their prognosis varies with histology. We present two cases of liposarcoma and lipoma with the same clinical presentations that underwent surgical resection.

## KEY WORDS:

*Lipoma, myolipoma, liposarcoma, retroperitoneum, thigh*

## INTRODUCTION

Lipomatous lesions are the commonest soft tissue tumours in adult. It is found commonly in the retroperitoneum, extremities, groins and abdominal wall. Lipomas are benign lesions while liposarcomas are malignant neoplasms derived from mesenchymal cells. Both tumours may share similar clinical presentations but differ histologically. Histology and tumour location are independent predictive outcome for long-term survival. Complete surgical resection is the main treatment followed by adjuvant therapy for malignant disease. We present two cases that were clinically similar but differ histologically.

## CASE REPORT

### Case 1

A 51 year-old woman presented with pain in her left thigh for 2 months, associated with progressive swelling for 2 years. Clinical examination revealed an anterior left thigh swelling.

CT scan findings revealed a well-encapsulated mass with fatty attenuation occupying left thigh extending into pelvis and abdomen in retroperitoneal space. No major blood vessels were compressed, no hydronephrosis noted. Thick septations were noted within the tumour with some areas of calcifications. An incisional biopsy was performed and revealed a well-differentiated liposarcoma.

The tumour was excised in trans-peritoneal manner with incision extending laterally into the left thigh, and the control of major vessels and ureter. The well-capsulated 25x15cm tumour extended from the thigh into retroperitoneum posterior to the inguinal ligament in a dumb-bell manner (Fig. 1). The tumour was excised in several blocks due to its size. There was minimal adhesion

surrounding the tumour and hence the surrounding tissues were left intact. Post operatively the patient recovered well with no neurological deficit.

The histopathology was reported as atypical stromal cells with hyperchromatic nuclei, scattered monovacuolated and multivacuolated lipoblasts. Surgical margins were clear. A diagnosis of well-differentiated liposarcoma was made. No adjuvant chemo or radiotherapy was given after discussion with our oncologist. On 6 months follow up, she showed no signs of recurrence.

### Case 2

A 60 year-old woman presented with mild right thigh pain for a year which was associated with progressive swelling for 10 years. Clinical examination revealed an anterior-medial swelling of her right thigh measuring approximately 25cm by 15cm.

CT scan showed a well-encapsulated anterior thigh lesion extending into retroperitoneal space along iliopsoas muscle (Fig. 2). Septations within the tumour were thin. No calcification was seen. Incisional biopsy was performed and reported as lipoma.

Surgical excision was performed via a thigh incision extending cranially into retroperitoneum on lateral abdomen. Major vessels were protected while the inguinal ligament was cut for exposure and later repaired. The tumour was excised in multiple blocks as it crossed the inguinal ligament. The majority of the tumour mass was situated in the thigh measuring 23x13cm. The margins were clear as dissection was freed of adhesion. Post operatively the patient recovered with some residual numbness over the medial thigh. No motor neural deficit was noted.

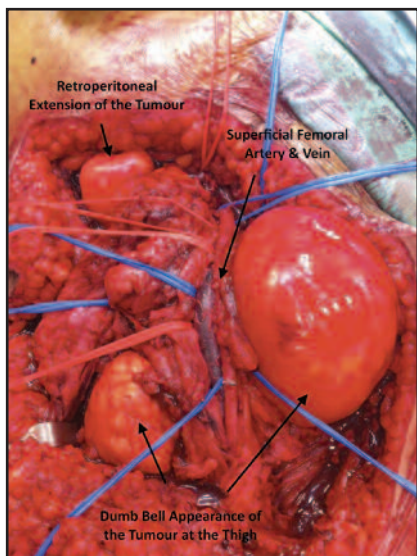
Histology report of the excised specimen showed sheets of adipocytes with fibrocollagenous septae and no atypical mesenchymal cell or lipoblast were seen, which was consistent with features of lipoma. Patient remained symptom-free on 6 months follow up.

## DISCUSSION

Liposarcoma and lipoma are two distinct histological tumours. Both commonly present in the 4th to 6th decades of life.<sup>1</sup> They are slow growing usually originating from the extremities into the retroperitoneal space. They are usually

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**Fig. 1:** Intra operative finding of liposarcoma -dumbbell shaped tumour.



**Fig. 2:** CT scan of pelvis & upper thigh showing the extent of the lipoma.

painless, but its growth can compress surrounding structures such as ureter, blood vessels and nerves causing hydronephrosis, deep vein thrombosis and pain.

Liposarcomas represent 10-35% of all soft tissue sarcomas. The WHO classification of soft tissue tumors (2002) divide liposarcomas into five distinct histological subtypes: well differentiated, dedifferentiated, mixoid, pleomorphic and mixed diversity of these lesions is reflected by their clinical and biological behavior, which ranges from non-metastatic tumors (well-differentiated liposarcoma) to tumors with high metastatic potential (pleomorphic liposarcoma). Well-differentiated liposarcoma are low grade variants with features resemble mature fat with occasional lipoblast and atypical stromal cells.<sup>2</sup> High grade liposarcoma have a dedifferentiated component and round cell with pleomorphism as its features. In general, a well-differentiated liposarcoma is not derived from malignant transformation of lipoma. It has no risk of metastasis unless dedifferentiation occurs. However, local recurrence is common.

Lipoma is a mature adipose tissue with no lipoblast, floret-like giant cell or zones of atypia pleomorphic features. Microscopically lipoma showed spindle-shaped cells intermingled with multiloculated clear cells. There is no necrosis or mitosis present within the lipoma cells. It has no metastatic capability.

The CT images of both tumours in our series have distinct features. The liposarcoma presented with thick septa (>2mm) while the lipoma has thinner septa (<2mm). The presence of nodular and globular area increases in liposarcoma as well as non-adipose area.<sup>3</sup> Calcification was seen in liposarcoma but not lipoma.

In both cases, we opted for surgical resection as the main curative treatment. The resection of liposarcoma was more complex requiring several blocks from retroperitoneum. Liposarcoma has higher recurrence rate when it occurs in the retroperitoneal region compared to extremities. This is

because they are generally larger, arise from an anatomically complex and surgically inaccessible site with surrounding vital structures which limits wide margin resection.<sup>4</sup> Lipoma on the other hand often has well-defined margin, which makes resection easier. Although the resection of lipoma was easier, it was compressing on major vessel and nerve thus posed a challenge to our resection.

The role of radiotherapy as combined modality to surgical resection is well established in extremities liposarcoma, but less so in retroperitoneal tumours.<sup>5</sup> Many retroperitoneal structures have low radiation tolerance and possibly increasing radiation-associated toxicities. Chemotherapy has not consistently shown to have any disease-free survival benefit. However certain histological subtypes have shown response to different chemotherapy agents.<sup>6</sup> Both our cases have not shown any recurrence after 1 year follow up.

**CONCLUSION**

Both liposarcoma and lipoma can present in a similar clinical fashion. Surgical resection is the main treatment option, with limited usage of adjuvant radiotherapy for liposarcoma. Care must be taken to minimize collateral damage during surgical resection. Patients should be followed up long term to watch for recurrence.

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