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Case Report

When size meets skill: the surgical ordeal of a giant retroperitoneal liposarcoma

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ABSTRACT

Retroperitoneal liposarcomas represent an uncommon subset of soft tissue sarcomas, typically exhibiting an indolent growth pattern and remaining clinically silent until attaining a size sufficient to exert mass effect on adjacent organs. Lesions measuring 30 cm or more in maximal diameter are exceedingly rare, with only a limited number of such cases documented in the literature. This report presents a 32-year-old woman from Zambia presented with a history of progressive abdominal distension over the past eight years. She had been diagnosed with a retroperitoneal liposarcoma and was referred to our centre for further management. Contrast-enhanced computed tomography (CT) of the abdomen and pelvis revealed a large, predominantly fat-density lesion arising from the right retroperitoneum, measuring approximately 194×274×301 mm. The mass occupied most of the abdominal and pelvic cavities, encasing and displacing the right kidney, proximal ureter, and renal vessels. The right adrenal gland was also encased, and the bowel loops were displaced toward the left side. The duodenum, ascending colon, pancreas, and inferior vena cava (IVC) were displaced superiorly and to the left, with the lesion abutting the inferior surface of the liver. Complete surgical excision of the retroperitoneal tumour was achieved, including an en bloc right nephrectomy. Massive retroperitoneal liposarcoma is an extremely rare neoplasm with a high risk of recurrence, influenced by factors such as histological subtype, tumour grade, presence of metastases, and completeness of surgical excision. In the present case, a complete resection was achieved, including an en bloc right nephrectomy. The patient will be monitored closely with periodic clinical and radiological follow-up to enable early detection of any recurrence.

Keywords: Massive liposarcoma, Abdominal mass, En bloc resection, Retroperitoneal liposarcoma

INTRODUCTION

Soft tissue sarcomas are rare malignant tumours, accounting for less than 1% of all adult malignancies. Among these, approximately 10–15% arise in the retroperitoneum. Soft tissue sarcomas comprise multiple histological subtypes, of which liposarcoma is the most common, representing about 20% of cases.[1,2] Liposarcomas occur most frequently in the extremities (52%), followed by the retroperitoneum (19%).[1,3]

Retroperitoneal liposarcomas typically remain asymptomatic until they reach a size sufficient to compress adjacent organs. Due to their rarity and lack of early clinical manifestations, they are often misdiagnosed.[1,4] The size and weight of these tumours vary considerably. Compared with other retroperitoneal sarcoma subtypes, retroperitoneal liposarcomas carry a poorer prognosis.[2,5] Complete surgical excision offers the best chance for cure; however, this is frequently challenging, as tumour margins may be indistinct - in well-differentiated subtypes due to their infiltration into surrounding fat, and in high-grade or undifferentiated subtypes due to aggressive local invasion. These features often necessitate en bloc resection of contiguous organs to achieve negative margins.[1,3,6]

We report a case of a massive retroperitoneal liposarcoma measuring 27×30 cm and weighing 7.5 kg. This case is presented in accordance with the SCARE criteria.[7]

CASE REPORT

A 32-year-old woman from Zambia presented with an eight-year history of progressive abdominal distension. She had previously been diagnosed with a retroperitoneal liposarcoma and was referred to our hospital for further management. There was no history of other chronic illnesses, and no family history of similar tumours.

On physical examination, the abdomen was markedly distended, with a diffuse, firm mass of unclear margins palpable throughout the abdominal cavity, measuring approximately 30×30 cm (Figure 1).

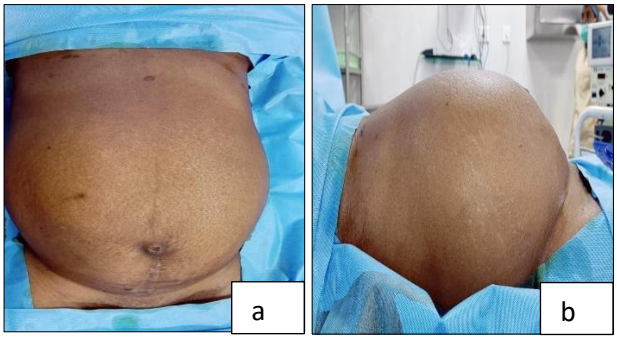

Figure 1 (a and b): Pre-operative picture showing abdominal distension.

Contrast-enhanced computed tomography (CECT) of the abdomen and pelvis revealed a large, predominantly fat-density lesion occupying most of the abdominal and pelvic cavities, arising from the right retroperitoneum, and measuring approximately 194×274×301 mm. The mass encased and displaced the right kidney, proximal ureter, and renal vessels; displaced bowel loops toward the left; and completely encased the right adrenal gland. The duodenum, ascending colon, pancreas, and inferior vena cava were displaced superiorly and to the left, and the lesion abutted the inferior surface of the liver without a clear fat plane. Contrast-enhanced computed tomography (CECT) of the abdomen and pelvis revealed a large retroperitoneal liposarcoma causing mass effect and displacement of contiguous structures (Figure 2).

Given the extent of the lesion and its anatomical relationships, surgical resection was planned. CT angiography of the abdominal aorta was normal in course, calibre, and enhancement, with no evidence of significant stenosis or occlusion. The coeliac trunk, hepatic artery, and splenic artery, superior and inferior mesenteric arteries were normal in course and calibre. The right renal artery and vein were encased by the mass lesion. The lesion received its vascular supply from an enlarged lumbar artery arising from the abdominal aorta at the level of the superior mesenteric artery, along with multiple peripheral arterial branches (Figure 3).

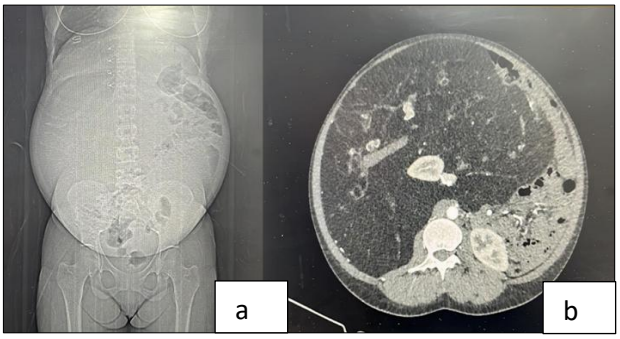

Figure 2 (a and b): Contrast-enhanced computed tomography of the abdomen and pelvis.

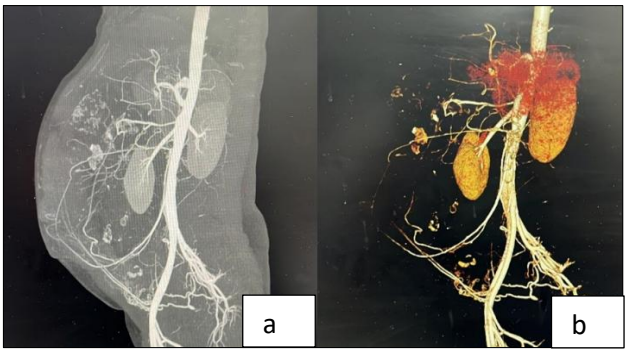

Figure 3 (a and b): CT angiography of the abdominal aorta.

Intraoperatively, the mass was found to originate from retroperitoneal fat, compressing adjacent organs and encasing the right kidney, proximal ureter, and renal vessels. Its vascular supply was confirmed to arise from an enlarged lumbar artery at the level of the superior mesenteric artery, with multiple additional peripheral feeders.

After multidisciplinary discussion with the vascular and urology teams, a complete en bloc excision of the retroperitoneal liposarcoma was performed, along with a right nephrectomy.

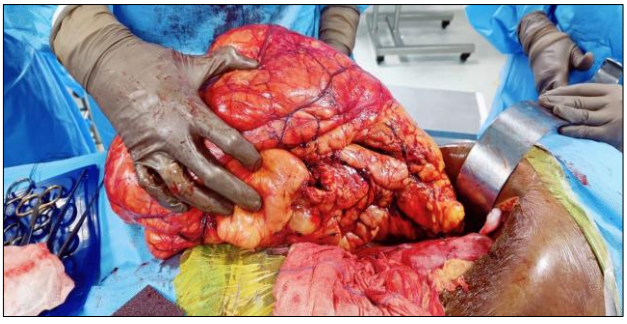

Figure 4: En bloc excision of the retroperitoneal liposarcoma.

DISCUSSION

Retroperitoneal liposarcoma most commonly presents in patients between 40 and 60 years of age, with no strong sex predilection, although some large retrospective series suggest a slight female predominance.[2,3] In our patient, the tumour measured 28×30 cm and weighed 7.5 kg. The retroperitoneum is a deep, highly expandable anatomical space with few rigid boundaries, which allows tumours to grow to massive dimensions before becoming clinically apparent.[1,2,5] As a result, symptoms such as abdominal discomfort, weight loss, or a palpable mass usually occur only when the tumour reaches a considerable size, exerting pressure on or invading adjacent organs.[3,6]

Liposarcoma represents the most common histological subtype of retroperitoneal sarcoma, accounting for approximately 41% of cases.[2,5] Retroperitoneal liposarcomas are generally low- to intermediate-grade malignancies, and hematogenous metastasis is uncommon at presentation. When distant spread occurs, the lung is the most frequent site.[3,4] Histologically, liposarcomas are classified into four subtypes-well-differentiated, myxoid/round cell, dedifferentiated, and pleomorphic. The dedifferentiated and pleomorphic variants are high-grade tumours with aggressive biological behaviour and greater metastatic potential, whereas well-differentiated and myxoid/round cell tumours are considered low- to intermediate-grade lesions.[4,6,9] In our case, histopathological examination confirmed a well-differentiated liposarcoma, a subtype associated with a relatively favourable prognosis, with reported 5-year survival rates ranging between 83% and 90%.[2,5]

Complete surgical resection remains the cornerstone of treatment for retroperitoneal liposarcoma. The role of neoadjuvant or adjuvant chemotherapy and/or radiotherapy remains controversial due to the relatively low chemosensitivity and radiosensitivity of these tumours.[2,7,10] The surgical objective is to achieve macroscopic and microscopic clearance of the tumour, often necessitating en bloc resection of adjacent organs if margins are not clearly defined.[1,3,6] Achieving complete resection has been shown to improve 5-year survival from approximately 16.7% to 58%.[3,5] The kidney is the most frequently resected organ in such combined procedures, followed by the colon.[1,6,8]

Local recurrence is the predominant cause of mortality in retroperitoneal liposarcoma. Repeat surgical excision of recurrent disease, when feasible, has been associated with improved survival compared to non-resectional management.[3,9] Thus, the current gold standard remains complete resection of both primary and recurrent tumours.[1,2,6,9] When radical resection is not achievable, palliative debulking may provide symptomatic relief by reducing compression of vital structures.[2,3]

Postoperative surveillance is critical, as recurrences are common. Current guidelines recommend cross-sectional imaging with CT every three months during the first two years, every six months for years 2–5, and annually thereafter.[2,5,10]

CONCLUSION

Massive retroperitoneal liposarcoma is an extremely rare tumour with a high risk of recurrence, influenced by factors such as histological subtype, tumour grade, metastatic potential, and completeness of surgical excision. In the present case, complete resection was achieved through en bloc removal of the tumour with the right kidney. The patient will continue to be monitored closely with regular follow-up imaging for early detection of recurrence if any.

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