Case Report

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Surgical management of recurrent giant retroperitoneal liposarcoma: a challenging surgery

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ABSTRACT

Retroperitoneal liposarcoma is a rare malignant disease with a high rate of recurrence. Retroperitoneal liposarcoma is usually asymptomatic until the liposarcoma is large enough to compress the surrounding organs and usually presented with compressive symptoms. Main modality of the treatment is surgery both in primary and recurrence cases. Even with complete removal of the liposarcoma, local recurrence rate is very high. Till now, there is currently no evidence that chemotherapy or radiotherapy improve survival rates. Successful complete resection of recurrent retroperitoneal liposarcoma is the sole chance of cure and may increase the 5-year survival rate. In recurrent case, it is challenging for the operating surgeon because of the altered anatomy, adherent to adjacent organs and large vessels and the huge size of the recurrent tumour. The aim of the present study is to report a giant recurrent retroperitoneal liposarcoma and its challenging surgical management.

Keywords: Liposarcoma, Retroperitoneum, Chemotherapy, Radiotherapy

INTRODUCTION

Liposarcoma is the most common type of retroperitoneal soft tissue sarcoma.^{1,2} The histology of retroperitoneal lipoarcoma varies significantly from that of extremity and trunkal counterpart.³ superficial Retroperitoneal liposarcoma is usually asymptomatic until the liposarcoma is large enough to compress the surrounding organs and usally presented with compressive symptoms.⁴ The retroperitneum is a complex potential space which allows liposarcoma to grow. Main modality of the treatment is surgery both in primary and recurrence cases. Even with complete removal of the liposarcoma, local recurrence rate is very high. The second surgery for recurrence is challenging for the operating surgeon. Thus, the first surgery is critical for cure. Successful complete resection of recurrent retroperitoneal liposarcoma is the sole chance of cure and may increase the 5-year survival rate.⁵ Till now, there is currently no evidence that chemotherapy or radiotherapy improve survival rates. The aim of the present study is to report a giant recurrent retroperitoneal liposarcoma and its challenginging surgical management.

CASE REPORT

A 40 Years old male, known case of retroperitoneal liposarcoma was admitted to the department of surgical oncology, Dr. B Borooah Cancer Institute, Assam, India in May 2019, presenting with recurrent upper abdomen lump for last 1 year with abdominal distension following eating. In the past surgical history, the patient had underwent excision of similar abdominal lump 4 years ago and the final histopathological examination report was well differentiated liposarcoma. Surgical event was uneventful and did not receive any adjuvant treatment. On physical examination, 35×25 cm firm, non-tender mass is palpable on the right side of the abdomen,

extending from right subcostal margin to right illac fossa. Previous midline surgical scar is present and per rectal examination is normal. The laboratory tests including complete blood count, liver function test, and renal function test are within normal limits. Computed tomography (Figure 1-3) demonstrated a giant mass in the right abdomen, partially engulfed into the right kidney.



Figure 1: CT scan abdomen (coronal section).

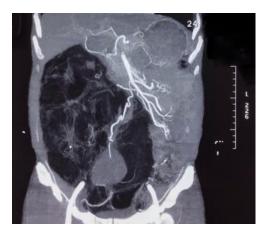


Figure 2: Contrast CT scan abdomen (coronal section).

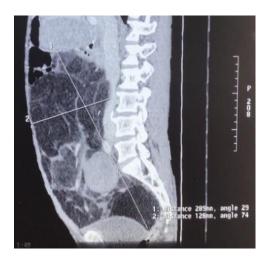


Figure 3: CT scan abdomen (sagittal section).



Figure 4: Giant liposarcoma (laparotomy).



Figure 5: Four resected specimens.



Figure 6: Total weight.

After multidisciplinary tumour board discussion, it was decided for surgery (exploration laparotomy and proceed). During surgery, it is found that there are 4 different masses adherent to each other and the largest mass originated from the right paravertebral region with infiltration into right psoas and quadratus muscle and the upper 2/3 of right kidney was hugging by the tumour (Figure 4). The right kidney was dissected out and preserved. All the tumours are completely resected enbloc with intact capsule and cuff of involved mucles. Size of the masses are 20×15×6 cms, 15×10×5 cms, 8×6×4 cms and 6×6×4 cms (Figure 5) and total weight was 5 kg (Figure 6).

The final histopathological examination report is well differentiated liposarcoma.

DISCUSSION

Retroperitoneal tumour originates from fat, loose connective tissue, fascia, muscles, lymphatic tissue or any residual embryonic tissue. Majority is malignant (80%). Retroperitoneal liposarcoma is the most common types.⁶ Liposarcoma can be histologically subdivided into 5 subtypes: Well differentiated, myxoid, round cell, pleomorphic and dedifferentiate.8 Among retroperitoneal liposarcoma, well differentiated and dedifferentiated are common variants. It usually occurs at 40-60 years of age. At the time of diagnosis, it usually reached to large size because the large volume of the intraabdominal space allows liposarcoma to grow without compressing the vital organs.

On CT scan, retroperitoneal liposarcoma usually appears as a large encapsulated mass containing variable amounts of fatty and soft tissue components. The final diagnosis of retroperitoneal liposarcoma is dependent on the pathological and immunohistochemical analyses. In the present study, only CT scan is done. Generally, round cell, pleomorphic and dedifferentiated subtypes are regarded as high grade; whilst well differentiated and myxoid liposarcoma are low-grade. High histological grade is one of the most important negative prognostic factors in patients with retroperitoneal liposarcoma. Well-differentiated liposarcomas may recur locally, but the metastatic potential is low, while pleomorphic liposarcomas have high metastatic potential.

With regards to the high recurrence rate of liposarcoma, the complete resection of the first surgery is particularly important. R0 resection is the cornerstone of treatment. The principle of the surgery is to resect the tumour and any invaded organs with cuff of normal tissue for adequate margin. Even with complete removal of the liposarcoma, there is high rate of recurrence. Local recurrence with unresectable remains the main cause of mortality in retroperitoneal liposarcoma.¹⁰ The survival rate is improved in the patients who received a complete resection of the recurrent tumour. 11 Therefore, the gold standard treatment for local recurrence is complete resection of tumour.¹² But surgery for recurrence case is challenging because of the fact that the anatomical relationship is more complex and the margins are not easily distinguishable. The reason for this is that after the first surgery, the anatomical position is altered and the tissues are adhere to one another or to important vessels and adjacent organs, resulting in the increased difficulty of the second surgery. 13 Another reason is the huge size of the recurrent tumour. Combined resection of the surrounding organs is often required to achieve complete resection. The kidney is the most commonly removed organ, followed by the colon. When radical surgery is not possible, palliative resection is advisable. In this study, the patient underwent complete resection without sacrificing adjacent organs. In this case, the liposarcoma engulfed the right kidney and dissection plane was present and for margin gerota's fascia was completely removed. There is no evidence that chemotherapy or radiotherapy improve survival rates. ¹⁴ In the present study, patient had not planned for any adjuvant therapy.

CONCLUSION

Retroperitoneal liposarcoma is a rare malignant disease with a high rate of recurrence. First surgery is the benchmark for treatment. In recurrent case, the gold standard for treatment is the complete resection of recurrent tumour and involved adjacent organs. It is challenging for the operating surgeon because of the altered anatomy, adherent to adjacent organs and large vessels and the huge size of the recurrent tumour.

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