*DOI: 10.58490/ctump.2024i8TA.3342*

# SURGICAL MANAGEMENT OF GIANT ABDOMINAL LIPOSARCOMA TWO CASE REPORTS

***Le Minh Hang*, Huynh Thao Luat, Tran Minh Khoi***
*Can Tho Oncology Hospital*
**Corresponding author: Juliele1995@gmail.com*
*Received: 27/9/2024*
*Reviewed: 14/10/2024*
*Accepted: 25/11/2024*

## ABSTRACT

***Introduction:*** *Abdominal sarcomas, accounting for 15–20% of all sarcomas, are rare and often grow large before causing symptoms, leading to limited reports on the disease.* ***Case presentation:*** *This review discusses two surgical cases: a 13.5 kg retroperitoneal liposarcoma (40 cm) in a 71-year-old male and a 6 kg liposarcoma in the small bowel mesentery in a 46-year-old female. Both patients presented with large abdominal tumors causing compressive symptoms. Contrast-enhanced CT scans suggested liposarcoma, and both underwent complete surgical excisions without complications. They were discharged after 7 days, with final diagnoses confirming retroperitoneal liposarcoma. Postoperative management involved active surveillance without chemotherapy or radiotherapy. After 1 year, no recurrence or metastasis has been observed.* ***Conclusions:*** *Abdominal liposarcoma often presents as locally advanced at the time of diagnosis, often due to the absence of noticeable symptoms. Currently, chemotherapy for retroperitoneal soft-tissue sarcomas is not effective, and radiotherapy has limited efficacy due to the toxicity affecting adjacent intra-abdominal structures. The exclusive treatment option is a complete surgical excision to achieve successful outcomes. In these two cases, we performed complete resections without combined resection of the surrounding organ. Furthermore, we will continue to observe our patients closely for recurrence.*

***Keywords:*** *Giant abdominal liposarcoma, Retroperitoneal liposarcoma, surgery.*

## I. CASE PRESENTATIONS

Retroperitoneal or mesenteric primary sarcomas are relatively uncommon, accounting for approximately 15% of all sarcomas. The most common histological subtype is liposarcoma. Tumors often reach significant sizes before the patient's nonspecific complaints are assessed or an abdominal mass is identified during a physical examination [1].

Giant retroperitoneal liposarcoma with a diameter exceeding 30 centimeters is exceedingly rare [2]. Moreover, although liposarcomas are the most common tumors of the retroperitoneum, bowel mesentery is an uncommon site for them. Only a few cases of mesenteric liposarcomas have been reported in the literature [3]. There are no standard guidelines for the management of mesenteric liposarcomas in view of the rarity of the tumor. In this report, we present two rare cases of giant abdominal liposarcoma. The work has been reported in line with CARE criteria [4].

## II. INTRODUCE CASE

### 2.1. Case 1

A 71-year-old male sought medical attention due to respiratory distress, anorexia, and weight loss for 8 months. Medical history: cirrhosis and chronic hepatitis B, chronic bronchitis, smoking 40 packs per year.

A clinical examination revealed a palpable abdominal mass. Contrast-enhanced abdominal CT imaging illuminated a large, enhancing soft tissue mass, measuring approximately 30 cm, intricately involving adipose tissue, and displacing adjacent structures to the right. Respiratory function measurement: severe obstructive airway disorder.

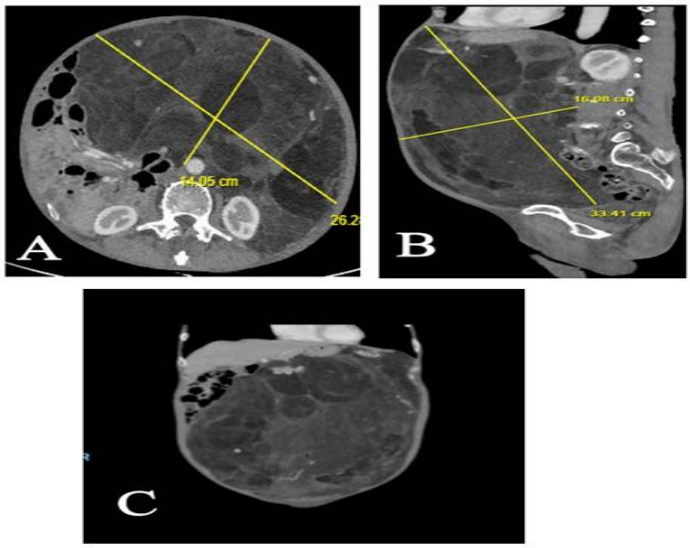


Figure 1. Sagittal section (A), cross section (B) and coronal section (C) of abdominal computed tomography

During surgical exploration, a massive liposarcoma was discovered. It originated from the omental bursa, occupying the entire abdominal cavity. It adhered to the transverse colon, pancreas, and stomach and compressed the splenic artery, leading to the shrinkage and impairment of spleen function. A successful en bloc surgical resection of the giant mass was performed. The mass was 40 cm × 35 cm × 12 cm in size and weighted 13.5 kg (Figure 2).

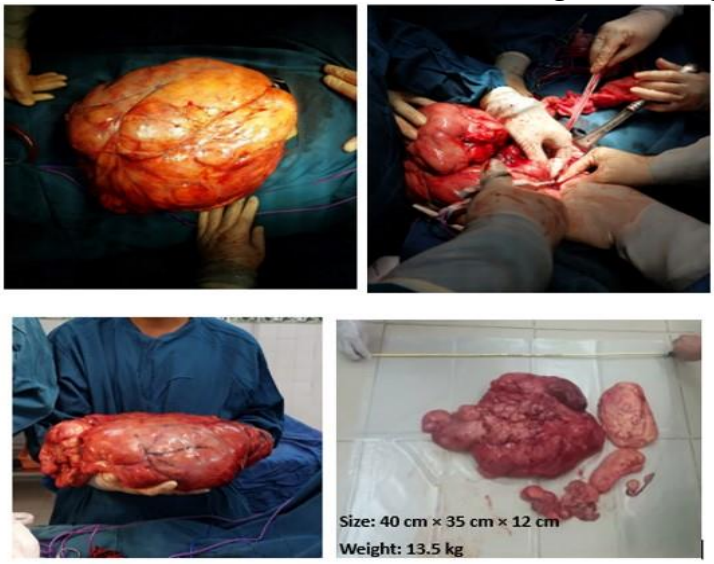


Figure 2. During surgery, a midline incision was performed, and a giant well-encapsulated tumor was found

Histopathological analysis indicated a low-grade liposarcoma. The patient was discharged from the hospital on postoperative day 8 without any postoperative complications.

No sign of recurrence was observed at the 12 – month follow-up. The patient was satisfied with the treatment and outcome. Figure 3 shows the timeline of clinical management.

### 2.2. Case 2

A 46-year-old woman presented for a progressive volumetric increase of the abdomen for 2 months. Medical history: hypertension. Regular menstrual cycles. No previously recorded surgical or obstetric diseases. An abdominal CT scan identified a mass behind the peritoneum, suggestive of liposarcoma (Figure 2.1)

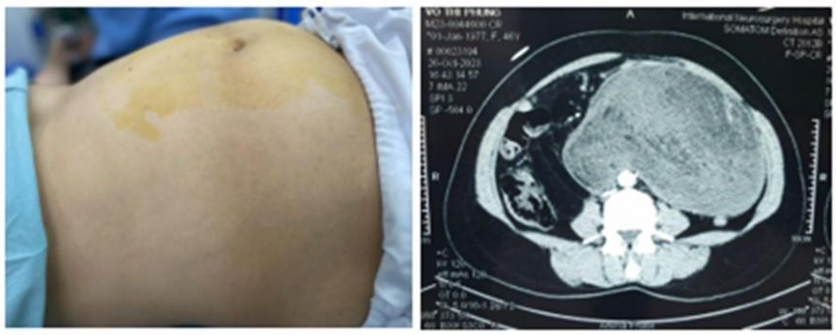

Figure 3. The tumor on clinical examination (left) and by CT scan (right)

Core needle biopsy results confirmed the histopathological diagnosis as low-grade myxoid liposarcoma. At operation, a large mass arising from the mesentery was found. The patient underwent successful surgery, during which multiple tumors were excised from the mesentery. The largest of these tumors measured up to 28cm, and the total weight of the excised tumors after the surgery was 6kg (Figure 3).

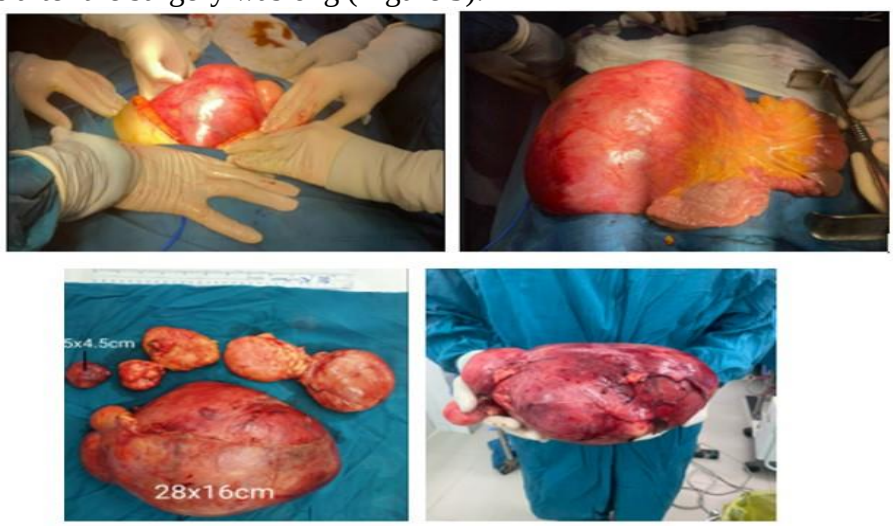


Figure 4. During surgery, a midline incision was performed, and a giant well-encapsulated tumor from bowel mesentery was found

The patient was discharged on the seventh postoperative day. The condition of the abdominal incision was favorable, with normal bowel movements and regular physical activity. The final histological diagnosis is low-grade myxoid liposarcoma. No sign of recurrence was observed at the 12 – month follow-up. The patient was satisfied with the treatment and outcome. Figure 3 shows the timeline of clinical management.

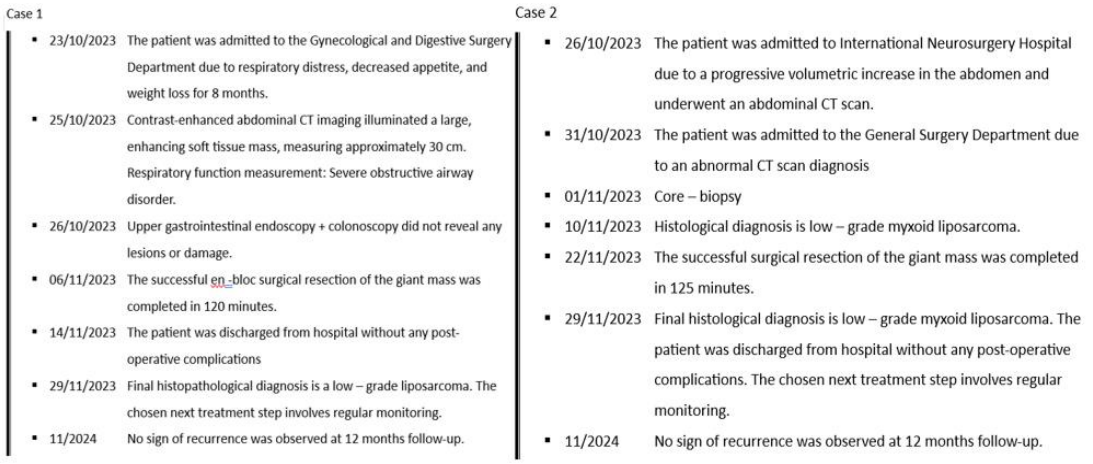


Figure 5. Timeline of Clinical Management

## III. DISCUSSION

Overview of the primary liposarcoma, whether retroperitoneal or mesenteric, is a rare mesenchymal tumor, it represents 0.2% of all cancers and 15% of all soft tissue sarcoma [1].

During embryonic development, a substantial portion of the anatomical structures within the abdominal cavity is intricately enveloped by the peritoneum. The retroperitoneal space and mesentery harbor connective tissue containing organs and structures that are categorized as extraperitoneal [1]. So primary retroperitoneal liposarcoma can reach considerable sizes before manifesting clinical symptoms, owing to the expansive and unconfined nature of the retroperitoneal space. Notably, Lewis *et al.* It's extensive study on retroperitoneal liposarcoma revealed that 94% of diagnosed tumors exceeded 5 cm in diameter, with 60% reaching 10 cm [5].

Nevertheless, instances of retroperitoneal liposarcoma surpassing 30 cm in diameter remain exceptionally rare. To the best of our knowledge, only 14 cases of giant retroperitoneal liposarcoma with a diameter greater than 30 cm have been reported in English literature before [2]. Though liposarcoma is the most common tumor of the retroperitoneum, bowel mesentery is an uncommon site for them. There are a few well-described cases of mesenteric liposarcoma in the English literature [3]. Due to its rarity and unique anatomical location. This rarity suggests a low likelihood of future prospective studies to determine the best treatment options. Few surgeons possess substantial experience in managing these massive tumors.

For diagnosis, according to the Transatlantic Retroperitoneal Sarcoma Working Group, abdominal ultrasound can be the initial imaging test, but CT or magnetic resonance imaging should be performed in all cases [6]. In general, a preoperative biopsy is not necessary when surgical resection is planned for a resectable primary retroperitoneal mass. However, there are specific circumstances in which biopsy of primary retroperitoneal masses should be performed. These include (1) clinical suspicion of lymphoma or germ cell tumor, (2) tissue diagnosis for preoperative treatment, (3) tissue diagnosis of radiologic unresectable disease, and (4) suspected retroperitoneal or intraabdominal metastasis from another primary tumor.

Currently, literature on the management of liposarcoma originating from the small intestine or retroperitoneum is limited, especially for giant tumors or those recurring post-

operatively. Surgery plays a principal role in the management of RPS and provides the only opportunity for cure [7]. The definitive operative procedure requires complete surgical resection of the tumor with negative margins and removal of the adjacent structures such as the kidney, and intestine if local invasion is confirmed. However, dealing with exceedingly large abdominal tumors remains a significant challenge for surgeons and anesthesiologists alike. One of the challenges associated with anesthesia is the occurrence of abdominal compartment syndrome induced by giant liposarcomas [8]. It is essential to emphasize the importance of effective interdisciplinary coordination before proceeding with treatment.

The role of radiotherapy for primary retroperitoneal sarcoma: Postoperative external beam radiation therapy (EBRT) has been shown to reduce local recurrence rates for extremity and superficial trunk sarcomas. However, gastrointestinal, or neural toxicities often limit the delivery of sufficient radiation doses to the retroperitoneum. There is no current consensus on the role of postoperative EBRT following a complete resection of retroperitoneal sarcomas [14]. About preoperative EBRT, the STRASS-1 trial was conducted, a phase 3 multicenter randomized trial comparing preoperative radiation therapy followed by surgery versus surgery alone for primary retroperitoneal sarcomas [9].

Like radiation therapy, the role of chemotherapy for primary retroperitoneal sarcoma remains unclear. There is no data available to support the use of routine postoperative chemotherapy for patients with retroperitoneal sarcoma [14]. While awaiting the outcomes of STRASS-1, another randomized study, the EORTC-1809-STBSG – STRASS 2, is underway. This international randomized multicenter, open-label phase 3 trial aims to investigate the potential role of neoadjuvant chemotherapy in subgroups of retroperitoneal liposarcomas with a high metastatic potential [9].

We received these two cases of liposarcoma for treatment, diagnosed based on contrast-enhanced abdominal CTscans. The female patient underwent pre-operative diagnosis via core needle biopsy due to the tumor's accessibility through ultrasound and clearly defined margins. The remaining patient presented with an excessively large tumor of mixed density, with indistinct boundaries between the tumor and adjacent organs, precluding core needle biopsy. As previously mentioned, with retroperitoneal tumors identified on CT scan, pre-operative biopsy is unnecessary. We opted for open surgery to assess complete tumor resection for both diagnosis and treatment. Notably, both patients were admitted within the same timeframe to different departments, presenting with massive tumors originating from the small bowel mesentery, a rare occurrence. Both patients were discharged one week post-operatively without complications. We chose active surveillance post-surgery due to the lack of specific recommendations or consensus regarding post-operative chemotherapy or radiotherapy. Currently, after one year of follow-up, neither patient has shown recurrence or metastasis. This report provides valuable data on the clinical management and treatment outcomes of giant liposarcoma in Vietnam, particularly cases involving the small bowel mesentery, which are exceptionally rare. These two cases represent the first case reports published in English from Vietnam.

## IV. CONCLUSION

Abdominal liposarcoma often presents as locally advanced at the time of diagnosis, often due to the absence of noticeable symptoms. CT can be reliably used as a diagnostic tool. Currently, chemotherapy for retroperitoneal soft-tissue sarcomas is not effective, and radiotherapy has limited efficacy due to the toxicity affecting adjacent intra-abdominal

structures. The exclusive treatment option, complete surgical excision, is accompanied by significant challenges for the surgeon, anesthetic management, and perioperative care to achieve successful outcomes.

## REFERENCES


1. Rosato, L., *et al.*, Retroperitoneal or mesenteric primary liposarcoma: clinical and prognostic evaluations on five cases. *Il Giornale di Chirurgia.* 2018. 39(1), 57-62 doi: 10.11138/gchir/2018.39.1.057.
2. Xu, C., *et al.*, Giant retroperitoneal liposarcoma with a maximum diameter of 37 cm: a case report and review of literature. *Ann Transl Med.* 2020. 8(19), 1248, doi: 10.21037/atm-20-1714.
3. Meher, S., *et al.*, Giant dedifferentiated liposarcoma of small bowel mesentery: a case report. *World Journal of Surgical Oncology.* 2016. 14. 1-5, https://doi.org/10.1186/s12957-016-1007-1.
4. Riley, D.S., *et al.*, CARE guidelines for case reports: explanation and elaboration document. *Journal of clinical epidemiology.* 2017. 89, 218-235, 10.1016/j.jclinepi.2017.04.026.
5. Lewis, J.J., *et al.*, Retroperitoneal soft-tissue sarcoma: analysis of 500 patients treated and followed at a single institution. *Annals of surgery.* 1998. 228(3), 355-365.
6. Herzberg, J., *et al.*, Giant retroperitoneal liposarcoma: a case report and literature review. *Journal of Taibah University Medical Sciences.* 2019. 14(5), 466-471, https://doi.org/10.1016/j.jtumed.2019.08.005.
7. Strauss, D., *et al.*, Surgical management of primary retroperitoneal sarcoma. *Journal of British Surgery.* 2010. 97(5), 698-706, https://doi.org/10.1002/bjs.6994.
8. Liu, H., *et al.*, Successful intraoperative management in patients with abdominal compartment syndrome induced by giant liposarcomas: Two case reports. *Medicine.* 2020. 99(40), e22575, 10.1097/MD.0000000000022575.
9. Van Houdt, W.J., *et al.*, New research strategies in retroperitoneal sarcoma. The case of TARPSWG, STRASS and RESAR: making progress through collaboration. *Current Opinion in Oncology.* 2019. 31(4), 310-316, 10.1097/CCO.0000000000000535.