

## Case Report

# Giant Retroperitoneal Liposarcoma – Case Report and Literature Review

Kiril Kirov<sup>1\*</sup> and Bogdan Bogdanov<sup>2</sup>

### Abstract

<sup>1</sup>Medical University – Pleven,  
Bulgaria.

<sup>2</sup>Department of Oncology Surgery,  
Specialized Hospital for Active  
Treatment of Oncological Diseases,  
M.Markov " - Varna, Bulgaria.

\*Corresponding Author's E-mail:  
[kirovkg@yahoo.com](mailto:kirovkg@yahoo.com)  
Mob.: +359 889652084

The giant retroperitoneal liposarcoma is a relatively rare malignancy, characterized by slow and asymptomatic growth. Because of the anatomical spaces of the retroperitoneum, they often reach giant sizes. It is diagnosed by computed tomography and magnetic resonance imaging. Surgical treatment is the method of choice. We present a clinical case of retroperitoneal liposarcoma in a patient 69 years of age, measuring 35/24/16 cm and weight of 9.5 kg. Surgery includes tumor resection and right hemicolectomy in June 2014 (06/2014) as well as two other operations in the coming years performed by us due to local recurrence. Chemotherapy and radiotherapy have been administered. Chemotherapy and radiotherapy have controversial value according to different authors after the literature review has been made. Publications in Bulgarian and foreign literature in recent years are discussed.

**Keywords:** Asymptomatic growth, Chemotherapy and radiotherapy, Diagnosis, Retroperitoneal liposarcoma, Surgical treatment

## INTRODUCTION

Retroperitoneal liposarcomas are rare malignant mesenchymal tumors with an annual incidence of 2.5 cases per 100,000 of all cases (Caizzzone et al., 2015; Herrera-Gómez et al., 2008). The age range varies from 40 to 60 years (Caizzzone et al., 2015; Herrera-Gómez et al., 2008) and the ratio of men to women is 1:1 (Caizzzone et al., 2015). Liposarcomas occur in the upper and lower extremities - 52%, body, head, retroperitoneum - 19%, mediastinum and groins - 12% (Shahaji et al., 2012). Liposarcomas are derived from adipose tissue, most notably the perinephral capsule - 13-15% (Baev et al., 1969; Caizzzone et al., 2015; Herrera-Gómez et al., 2008). The age range varies from 40 to 60 years (Baev et al., 1969; Caizzzone et al., 2015; Herrera-Gómez et al., 2008), and the ratio of men to women is 1:1 (Caizzzone et al., 2015; Herrera-Gómez et al., 2008).

Retroperitoneal liposarcomas remain asymptomatic for a long time, the first symptoms being the growing mass in the abdomen or the symptoms of compression of adjacent organs. They are characterized by locally

aggressive growth and low metastatic activity. The diagnosis was made by computer tomography (CT) and magnetic resonance imaging (MRI) and confirmed histopathologically.

Clean surgical removal is the main method of treatment, given the large size often achieved is a challenge for any surgeon, since resection of adjacent infiltrating organs is required. The most often is the kidney, followed by colon (Caizzzone et al., 2015; Herrera-Gómez et al., 2008).

## CASE REPORT

We operated a 69-year-old man hospitalized at the Oncology Surgery Unit in June 2014 (06/2014) with complaints of gradually growing non-painful tumor formation in the right abdominal half with inconspicuous onset. There was no history of any prior chronic illness except slight weight loss.

### Clinical status

The patient was afebrile with a blood pressure of 135/80 mm Hg and a heart rate of 80 bpm. The abdomen is above the level of the chest, with a palpable movable tumor formation in the right lateral canal, starting from the right hypochondrium and entering the small pelvis. Other somatic indicators and laboratory test results are normal.

### CT examination (Not performed)

A massive parenchymal-equivalent lesion was found with linear calcifications at sites around the periphery. It was monitored from the level of L1 and caudally enters the small pelvis to the level of the acetabulum. It is located mainly in the right abdominal half and has the following maximum dimensions: transverse - 29.1 cm, anteroposterior - 20.7 cm and craniocaudal - 25 cm. Tumor formation dislocates adjacent intestinal loops and compresses v. cava inferior, but no infiltration data. Next to it, below the pancreatic level, dorsal from a. mesenterica superior and ventrally from the adjacent duodenum, another lesion with the same characteristic and dimensions of 5.1 / 3.9 / 6.4 cm was found. All other organs were free from pathological findings. There were no CT data for ascites and outbreaks of bone metastatic lesions.

### Operative findings

It is a mildly elastic tumor of 35 cm in length extending from the retroperitoneum of the right lateral canal. The tumor was mobilized and subsequent right hemicolectomy was performed due to the involvement of the right and middle colic vessels near the right mesocolon. The extirpated tumor mass weighs 9.5 kg.

Macroscopically, it is an oval material of 35/24/16 cm in size with a smooth, yellowish, lobular and pink in some places intersecting surface (Figure 1).



**Figure 1.** Macroscopic view of the extirpated tumor

Histologic examination revealed a tumor composed of variable size adipocytes and layers of fibrous and myxomatous connective tissue. Cells with spindle polymorphic nuclei, circulatory inflammatory response, and necrosis sites are present (Figure 2). Immunohistochemically proved positive for SMMHC, vimentin, S100P, CD 68, CD45, CD3, CD20, caldesmon, desmin and Ki67 (<4%).



**Figure 2.** Histological characteristics of liposarcoma.

### The definitive diagnosis is undifferentiated retroperitoneal adipose tissue liposarcoma

The postoperative period went smoothly and the patient was discharged on the 6th postoperative day. Regular dispensary examinations for 1.5 years did not show any recurrence data. On the basis of the decision of the Oncology Committee, chemotherapy was applied.

Liposarcoma recurrence was detected in the follow-up with a control CT of the abdomen in June 2016. A second operation was performed in June 2016 and extirpated Tu formation from the right retroperitoneum encapsulated with a diameter of 14 cm. Liver was without pathological lesions. Smooth postoperative period and discharge on the 7th day. The histological examination confirmed a tumor with evidence of liposarcoma - recurrence.

This is followed by a new asymptomatic period until 2018 when a new recurrence in the right retroperitoneum of the subhepatic area with large formation -117/68/92 mm was found in the abdominal CT. A new operation was performed in 2018 - extirpation of a large oval encapsulated Tu formation 13-14 cm in diameter subhepatically above the right kidney, aorta and vena cava inferior and pancreas. The histological examination confirmed liposarcoma. Smooth postoperative period and discharge on the 7<sup>th</sup> day. Directed by the Oncology Committee to conduct second line 5 courses of chemotherapy and palliative radiation with a linear accelerator in the area of relapse in 15 sessions without patient complaints.

On control abdominal CT in December 2019, no new lesions were visualized in the scanned levels as well as on the bones. Stable disease is reported and referred for continued chemotherapy. At the last check-up, the patient feels well and has no complaints.

## DISCUSSION

In recent years, a number of casuistic reports have emerged in the English literature available to patients with giant retroperitoneal liposarcoma.

Two cases of giant retroperitoneal liposarcoma have been diagnosed with the use of multidimensional multidetector CT and MRI (Hekimoglu, 2013).

The only symptom in a 36-year-old patient with giant retroperitoneal liposarcoma measuring 35/15 cm in size is the minimal abdominal pain that occurred one month before the tumor was diagnosed (Fernandez-Pello et al., 2012).

A giant retroperitoneal, differentiated liposarcoma weighing over 7 kg has been reported in a 65-year-old patient in India (Shahaji et al., 2012). Successful resection of the tumor mass was performed. A complete macroscopic resection of the tumor was performed in a 24-year-old patient with giant retroperitoneal liposarcoma because previous palliative chemotherapy was not effective (Herrera-Gómez et al., 2008). Giant liposarcoma, weighing 47 kg and measuring 50/48/45 cm, originating from the right retroperitoneum (McCallum et al., 2006), was successfully resected in the menopausal patient.

Resection of a giant pleomorphic retroperitoneal liposarcoma with a diameter of 45 cm and a weight of 4.5 kg in a 66-year-old patient requires the use of general anesthesia through the FloTrac / Vigileo (TM) monitoring system (Feng et al., 2015).

A 64-year-old patient with giant retroperitoneal liposarcoma of 42/37/18 cm in size and myxomatous patches has been reported (Caizzzone et al., 2015), a 58-year-old patient operated successfully on differentiated retroperitoneal liposarcoma of a lipoma-like subtype and weighing of 13.4 kg and CT dimensions of 50/25 cm (Selmani et al., 2011) and for a 57-year-old patient with retroperitoneal liposarcoma weighing 17 kg (Murphy et al., 2004).

A rare case of a giant retroperitoneal liposarcoma of myxomatous type has been reported in a 54-year-old patient in Greece, originating from the right peritoneal space, requiring additional radical nephrectomy and right salpingoophorectomy (Salemis et al., 2009). Histologically, it is a differentiated and pleomorphic element along with a deep invasion of the renal parenchyma. A 37-year-old patient in India has been described with an inflammatory version of a giant differentiated retroperitoneal liposarcoma weighing 9 kg, diagnosed with CT (Mehrotra et al., 2006).

Five cases have been reported in patients, four men and one woman, at an average age of 48 years, who were diagnosed with giant retroperitoneal liposarcoma between 2000 and 2006 (Makni et al., 2012). Successful surgical treatment was performed in four of the patients, but was refused by the fifth patient.

A giant undifferentiated retroperitoneal liposarcoma, gradually increasing over the last 25 years and reaching a weight of 46 kg, has been resected successfully in a 72-year-old patient in Pakistan (Amir et al., 2011).

Successful interdisciplinary resection of the malignant tumor and the adjacent abdominal organs is performed in patients with giant retroperitoneal liposarcoma weighing 25 kg (Clar et al., 2009). In a 62-year-old patient with rapidly growing tumor mass, resection of a giant differentiated retroperitoneal liposarcoma, removal of the uterus and adnexa, left hemicolectomy, and creation of a late-lateral anastomosis are required (Smrkolj et al., 2010). In a patient with recurrent giant undifferentiated retroperitoneal liposarcoma who has extensively invaded the thoracic wall, incl. and skin, reconstructive surgery is required after removal of the tumor (Colebunders et al., 2011). Successful complete resection of giant undifferentiated retroperitoneal liposarcoma was performed in a patient with no involvement of the adjacent abdominal organs (Dominguez et al., 2008).

In a patient with giant retroperitoneal liposarcoma weighing 24 kg, complete surgical resection was performed with preservation of the right kidney by renal autotransplantation (Bansal et al., 2013), and in another patient with undifferentiated retroperitoneal liposarcoma weighing 18 kg and dimensions of 20/44/40 cm, despite en bloc excision of the well-encapsulated tumor mass, relapse occurs after 9 months and fatal outcome after one year (Inoue and Higaki, 2005).

We have found two publications by Bulgarian authors on this issue. In 1967, a patient with a large retroperitoneal liposarcoma consisting of 10 to 12 myomatous masses was operated on in places of different size (1). At least five tumors are at least as large as a baby's head. Their total weight is 9.5 kg. A retroperitoneal liposarcoma has also been described with a large number of tumor segments with a total weight of nearly 20 kg, also successfully removed surgically (Baev et al., 2000).

## CONCLUSION

The present case report and the literature review indicate the need to discuss the possibility of retroperitoneal liposarcoma within the differential diagnosis in patients with slow-growing tumors in the abdominal cavity and timely radical surgical treatment. The three operations performed so far confirm the recurrent nature of this rare disease and the benefit of active surgery to achieve disease control and prolonged survival and asymptomatic

periods for patients is also confirmed, despite the often gigantic size reaching these tumors in the retroperitoneum. The additional effects of adjuvant chemotherapy and radiotherapy contribute to the attainment of the therapeutic goal, but of course after careful interdisciplinary discussion and evaluation of each patient.

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