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Case Report

Complete Remission of Recurrent Retroperitoneal Liposarcoma after the Administration of Gemcitabine and Docetaxel as First-Line Adjuvant Chemotherapy: A Case Report

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Liposarcoma · Chemotherapy · Oncology

Abstract
Retroperitoneal liposarcoma is a rare type of cancer. Relapse after surgery is frequent, and relapsing tumors tend to be more aggressive and less differentiated each episode, worsening the prognosis. This report describes the case of a 42-year-old female diagnosed with retroperitoneal liposarcoma after complete tumor resection. At the 3-month follow-up, another expansive lipomatous mass in the retroperitoneal area almost the same size as the previous one was detected. The patient underwent a new surgery, followed by first-line treatment with a gemcitabine- and docetaxel-based regimen for 8 cycles. Finally, the patient achieved complete

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tumor remission confirmed by CT after the end of the treatment proposed. Although recurrence is a well-known characteristic of this neoplasia, no other case with such a vast expansion of a new tumor shortly after complete resection was found in the literature.

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Introduction

Retroperitoneal liposarcoma is a rare neoplasia that accounts for 10–15% of the soft-tissue tumors [1–3]. The annual incidence is approximately 2.7 cases/million inhabitants [4]. Well-differentiated (WD) liposarcoma is the most common subtype, besides being the one with the slowest and more gradual progression [5].

The histologic subtype, growth rate, and size of the tumor are independent predictors for survival, specifically for liposarcomas, besides influencing the time to recurrence after surgical extraction [6–8]. Recurrence is the main factor to be highlighted in the postoperative follow-up of these patients [3, 9].

The average time for the first local recurrence varies between 39 and 45 months [6, 7]. If the growth rate of the tumor is higher than 1 cm/month, it is related to a major incidence of recurrence, the average described in the literature being 0.34 cm/month [6, 10].

The gold-standard treatment is surgical resection [11]. In unresectable tumors, there is no consensus in the literature about the best treatment option [12]. Treatment with gemcitabine- and docetaxel-based regimens demonstrated a clinical response up to 40% in high-grade soft-tissue sarcomas [11–14].

This study has the purpose of reporting the case of an individual with WD liposarcoma with early recurrence and a high growth rate (5.3 cm/month) yet with a complete response to gemcitabine- and docetaxel-based adjuvant first-line chemotherapy.

Case Presentation

A 42-year-old female was admitted to an oncological service in January 2015 due to the presence of a lipomatous mass in the retroperitoneal area (T2bNXM0) observed in an abdominal computed tomography (CT) (Fig. 1a). The patient underwent a complete surgery in March of the same year.

The histopathological analysis of the specimen showed a tumor mass weighing 679 g and measuring 14.0 × 10.0 × 7.0 cm, partially encapsulated, formed by a trabeculated and fibroelastic, shinny brown-yellow tissue with central cystifications (Fig. 2) and the proliferation of lipoblast-like cells and hypercellular areas, with pleomorphic cells of bizarre hyperchromatic nuclear figures with both poorly and well-differentiated areas. Immunohistochemical stains were positive for the expression of S-100, ki-67, MDM2, and CDK4 proteins, consistent with WD liposarcoma (Fig. 3a, b).

In June 2015, the patient was submitted to a CT (Fig. 1b) showing an expansive lipogenic retroperitoneal mass involving the posterior pararenal space, measuring 8.0 × 16.0 × 7.7 cm in the biggest diameter with fibrous tissue and septations. The expansive effect determined the anterior displacement of the renal parenchyma and the compression of the iliopsoas muscle.

Thereafter, the patient underwent a new excision of the tumor, and the histopathological examination presented a high-grade pleomorphic sarcoma (Fig. 3b) that weighed 486 g and

measured 14.0 × 12.0 × 6.0 cm, evidencing a growth rate of 5.3 cm/month. Due to the recurrence, the patient was initiated on a first-line chemotherapy regimen of gemcitabine (675 mg/m^2) and docetaxel (100 mg/m^2) for 8 cycles, during which she developed toxicity grade 2 (headache). Complete remission was demonstrated by an abdominal CT follow-up after the 8th cycle (Fig. 1c). The patient is currently monitored through clinical follow-up with the oncology service and imaging scans showing no evidence of recurrent disease 8 months after the last cycle of chemotherapy.

Discussion

Time to relapse of the tumor in this report was only 3 months, while most of the studies observed 39–45 months for the first local relapse after surgery for WD liposarcoma [6, 7]. Another indispensable factor for the prognosis in this type of tumor is its growth rate, which was 5.3 cm/month in our patient; a value 15 times bigger compared to what is described in the literature (0.34 cm/month) [10]. Once a WD liposarcoma has a low growth rate and a relatively long time until relapse, it is considered more aggressive [5, 15].

Surgery is considered the first-line treatment for WD liposarcoma. For patients with inoperable tumors, the prognosis depends on adjuvant treatments that are controversial discussed among authors [11–14]. First-line standard adjuvant chemotherapy with doxorubicin and ifosfamide shows a myriad of toxic effects, thus limiting its use. The second-line option is treatment with gemcitabine and docetaxel, which has demonstrated a complete clinical response in 30–45% of the cases in high-grade sarcomas and being the first-line therapy in the present report [11–14]. Despite this tendency in the literature, this regimen's complete clinical response is still not well described [13–15]. Thus, the complete response observed in this report suggests the priorization of this therapy as a first-line adjuvant chemotherapy [13–15].

Facing all discussed points, the present case is atypical when compared to the ones in the current literature because the tumor presented a short relapse time and a very high growth rate. Besides, as complete response was obtained after the first-line adjuvant chemotherapy with gemcitabine and docetaxel, which is described as controversial in the literature, further studies for a better understanding of the lines of treatment for this type of tumor are recommended. On the other hand, the debate is challenged by the rarity of the disease.

Statement of Ethics

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images.

Disclosure Statement

The authors certify that they have no conflicts of interest to disclose in the subject matter discussed in this paper.

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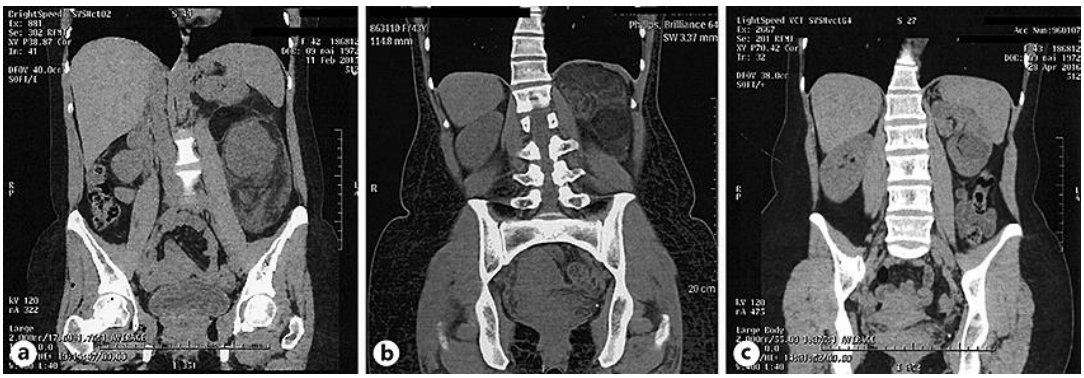

Fig. 1. **a** Abdominal computed tomography (CT) before the first surgery. **b** Abdominal CT after local recurrence. **c** Abdominal CT during cure follow-up.

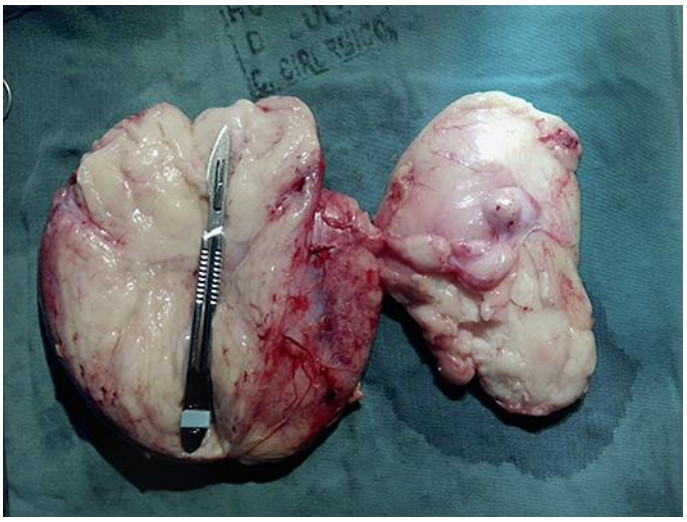

Fig. 2. Resected specimen of the first surgery.

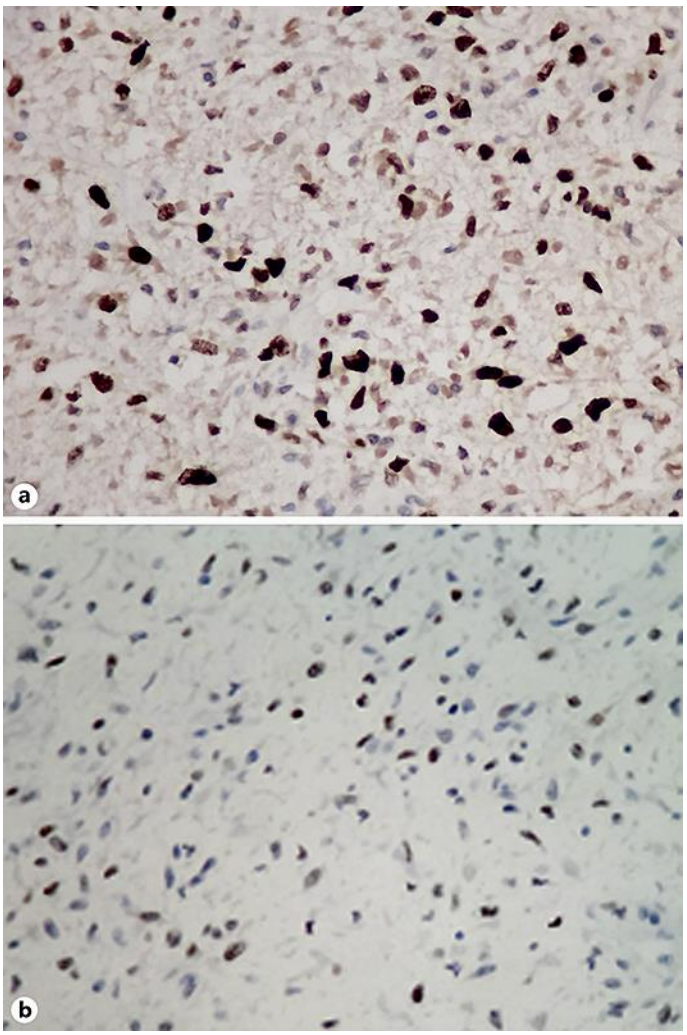

Fig. 3. **a** Immunohistochemistry with ki-67, ×400. **b** Immunohistochemistry with S-100, ×400.