



Reduced Port Laparoscopic Retroperitoneal Liposarcoma Resection

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Abstract

Liposarcomas originate from the primitive mesenchymal cells of the soft tissue of the body's extremities and retroperitoneum. Retroperitoneal liposarcomas are suspected once they become clinically symptomatic due to their size and repercussion to the adjacent organs. They are commonly diagnosed at 40-60 years of age with a slight male predominance. Contrast enhanced computed tomography scan and magnetic resonance imaging allow establishing the staging. Image-guided core needle biopsy can help in the diagnosis, but the specimen's examination remains the gold standard.

The authors report a 47-year-old female presenting the suspicion of a middle-size liposarcoma in the left paracolic gutter, safely removed by 3 trocars laparoscopy and confirmed at the histopathological examination.

Keywords: Retroperitoneal liposarcoma; Laparoscopy; Reduced port

Introduction

Liposarcomas account for 10-12% of all soft tissue sarcomas [1-3]. They seem to originate from the primitive mesenchymal cells. These cells come from the soft tissue of the body's extremities or the retroperitoneum. Retroperitoneal Liposarcomas (RPLS) represent the most frequent histologic type affecting the adults with 41% of these tumors [4]. Usually they are being suspected once they become clinically symptomatic due to their size and repercussion to the adjacent organs. They are commonly diagnosed at 40-60 years of age with a slight male predominance. Contrast Enhanced Computed Tomography scan (CECT-scan) and magnetic resonance imaging (MRI) allow to establish the staging and to evaluate the possibility of resection [5-6]. Image-guided core needle biopsy can help in the diagnosis [7], but the specimen's examination remains the gold standard. Due to the low response to chemotherapy, optimal treatment remains the surgical resection with safe margins [5]. Therefore large laparotomies are usually performed due to the large size of these tumors once they are being discovered.

The authors report a case of a woman presenting the suspicion of a middle-size liposarcoma in the left paracolic gutter, safely removed by 3 trocars laparoscopy and confirmed at the histopathological examination.

Case Presentation

A 47-year-old female with a 20,42 kg/m² body mass index, consulted her family doctor for a persistent cough and fever since a week. She was known with chronic constipation. She denied any other gastro-intestinal symptoms, and did not present any urologic, gynecological nor neurological complaints. General physical examination was unremarkable. Blood test showed an inflammatory syndrome and an increased CA-125 tumor marker. An abdominal MRI showed a heterogeneous retroperitoneal mass of 88 mm per 65 mm. This mass was located between the left Gerota's fascia and the descending colon containing fat tissues and calcifications (Figure 1). The abdominal CECT-scan confirmed this hypothesis. A reduced port diagnostic laparoscopy including tumor removal was proposed to the patient and has been accepted.

Surgical technique

The patient was placed in supine position. Peritoneal cavity was entered at the right flank

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Figure 1: Preoperative MRI.



Figure 4: Tumor mobilization.

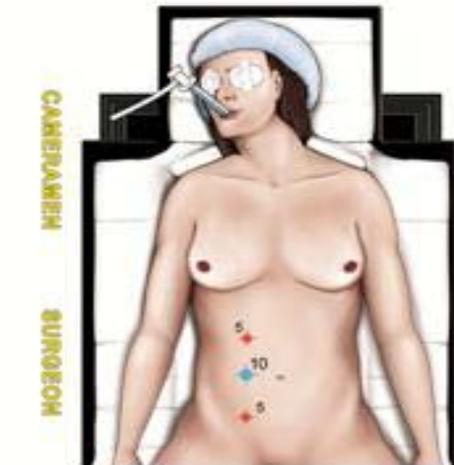


Figure 2: Abdominal trocars' disposition.

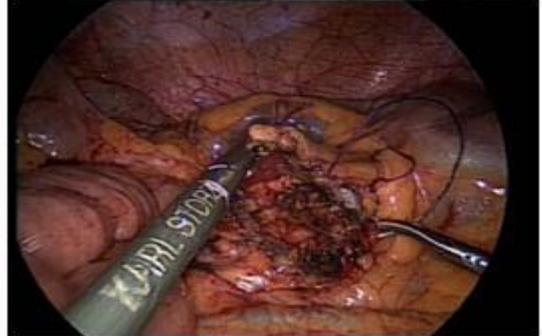


Figure 5: Mesocolic defect's closure.



Figure 3: Tumor appearance at laparoscopic exploration.



Figure 6: Tumor's extraction in a plastic bag.

by the open laparoscopy technique. After establishment of the pneumoperitoneum by carbon dioxide insufflations through a 10mm trocar, two other 5 mm trocars were positioned, one in the right hypochondrium and the other one in the right iliac fossa respectively (Figure 2). At laparoscopic exploration, the mass appeared located in the left mesocolon under the left colon and above the left kidney (Figure 3). The “touching sensation” of the mass by atraumatic grasping forceps revealed partially soft and calcified tissue. The left mesocolon was opened by a coagulating hook respecting the proper colic vascularization (Figure 4). The tumor was respected together with a part of the inferior renal fatty tissue and part of the retroperitoneal fatty tissue, ensuring an adequate safety of the margins. After complete removal, the left mesocolon appeared to be

well vascularized, as well as the descending colon. The left mesocolon was closed by an absorbable running suture (Figure 5). The respected specimen was removed in a plastic bag (Figure 6) through the enlargement of the 10 mm trocar. No drain was left in the abdomen. After withdrawal of the three trocars, the 10 mm trocar was closed in plans by absorbable sutures.

Results

Operative time was 105 minutes. Estimated blood loss was 20 cc. Postoperative course was uneventful. Flatus and intestinal transit were restored at day one postoperative. Liquid nutrition was started and the patient was discharged at day two.

Anatomopathology revealed a well-differentiated liposarcoma weighting 170 grams with a major proportion of fatty tissue proliferation, with calcifications and atypical cells expressing the MDM2 receptor. This is corresponding with the grade 1 of the French FNCLCC (Fédération Nationale des Centres de Lutte Contre le

Cancer) histological evaluation system. The patient was followed up regularly at office visits and at 6 months she was doing well.

Discussion

Minimally invasive surgery (MIS) has to be considered as a useful diagnostic method in front of a patient with an uncertain diagnosis. It allows the surgeon to explore the entire abdominal cavity and to evaluate the location and extension of the tumor. Moreover by collecting liquid samples and frozen biopsies, it permits to detect the presence of a peritoneal carcinomatosis, which remains a contraindication to standard resection. This latter aspect is a substantial advantage of diagnostic laparoscopy because it avoids a useless laparotomy.

The optical system enables to localize precisely the mass, and thanks to the latest evolution of 3D cameras [8], the contiguity of the tumor with the surrounding organs can be assessed. Obviously, after having completed the diagnostic laparoscopy, the decision to continue to operate by laparoscopy or to perform a standard laparotomy can be undertaken. If laparoscopy is chosen, various advantages can be added to the patient like minimal postoperative pain, faster intestinal peristalsis restoration, reduced hospital stay, low surgical sites infection rate, low incisional hernia rate and finally enhanced cosmetic outcomes.

On the other hand, laparotomy may appear superior to laparoscopy concerning the “touching sensation” of the tumor, but nowadays laparoscopic atraumatic grasping forceps enable the surgeon to get a similar sensation like the one obtained with the proper hands. Furthermore, the surgeon’s experience in laparoscopic oncologic surgery can help in this matter. Surely, the laparoscopic resection must always be performed respecting the rules of oncologic surgery, like free margins, «R0» removal, no tumor’s diffusion, and tumor’s supplying vessels first.

Laparoscopic surgery is usually performed placing 5 to 7 trocars into the abdomen [9]. The current trend is to reduce the number and the size of the trocars, heading towards reduced port laparoscopic surgery [10]. We adopted this latter technique considering the patient’s characteristics, the size and the location of the tumor. The laparoscopic resection is feasible and can be proposed for small and middle size tumors, whereas laparotomy is certainly adopted in front of giant tumors. After laparoscopic resection, the retrieval of the mass can be done through a trocar enlargement, like in our patient, or through an additional suprapubic access.

Our operative time was similar to other laparoscopic approaches reported in literature [9] and it was shorter than the average time for open surgery regardless of the size of the masses [11]. The patient was discharged at day 2, which is another advantage of laparoscopy considering the average of 11 days reported in literature [11].

RPLS can be classified into four histologic types (well-differentiated, myxoid/round cell, pleomorphic, and dedifferentiated) and three grades (grade I, II and III) according to the WHO classification [12]. As Dalal “et al.” [13], among the four subtypes, well-differentiated (46%) are the most common forms, followed by myxoid/round cell (28%), dedifferentiated (18%) and pleomorphic (8%). Recently, Gronchi “et al.” [14] reported an overall 5-year survival for well-differentiated subtypes of 90%, comparing to 30-50% for the pleomorphic subtypes. The rates of myxoid/round cell and de-differentiated subtypes are 60-90% and 75%, respectively. In a

large cohort of 72 patients with primary RPLS, Neuhaus “et al.” [15] found that R0 excision and histologic grade I are the only variables significantly associated with a decreased rate of local recurrence.

The 5-year rate of metastasis is approximately 3%, when the size of the tumor is less than 2.5 cm. This rate climbs to 55-60% if the tumor measures more than 20 cm [16].

Even though there is no specific scientific data, the consensus agrees that a close clinical follow-up is mandatory. It may include an abdominal MRI and CECT-scan every 3 to 6 months in the early years after surgery and afterwards, yearly controls [17]. Follow-up is advised for at least 10 years, allowing controlling local recurrences that sometimes predate symptoms by years [17]. These recurrences are the cause of 75% the mortality of well-differentiated liposarcomas [17]. Our patient was consulted at 1, 3 and 6 months postoperatively and, so far, she did not present any clinical or radiological tumor recurrence.

Conclusion

Small, well-differentiated and isolated retroperitoneal liposarcomas can be safely removed by reduced port laparoscopy, which is a step forward to enhance all the advantages of MIS.

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