The Conundrum of Retroperitoneal Liposarcoma—To Be More Aggressive or Less Aggressive?

Elizabeth H. Baldini, MD, MPH

Department of Radiation Oncology, Brigham and Women’s Hospital and Dana-Farber Cancer Institute; Center for Sarcoma and Bone Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts

An otherwise healthy 53-year-old woman presented to an emergency room with abdominal pain. Abdominal and pelvic computed tomography (CT) scans (Fig. 1) showed a 6.5 × 7.2 × 7.6-cm mass in the left upper quadrant abutting the posterior wall of the stomach and tail of the pancreas, a 3.7 × 4.1-cm mass-like area in the left pararenal space, and stranding of the fat surrounding the kidney and extending inferiorly. The core biopsy findings showed de-differentiated liposarcoma. The chest CT scan showed no evidence of disease.

Fig. 1. Abdominal and pelvic computed tomography scans.

Conflict of interest: none.
GRAY ZONE EXPERT OPINIONS

Treatment Recommendations for Retroperitoneal Liposarcoma

1. We would recommend complete surgical resection alone.
2. We would recommend complete surgical resection of the left upper quadrant mass and all abnormal retroperitoneal fat from the diaphragm to the pelvis, including the discontiguous mass in the left pararenal space. We would try to preserve the left kidney, because the central renal vasculature is not involved. We would strive to remove the kidney capsule with the surrounding retroperitoneal fat, leaving the kidney parenchyma intact, and would try to preserve the tail of the pancreas, stomach, and, possibly, the spleen, but this would depend on the intraoperative findings. We would not perform prophylactic appendectomy and would only consider removal of the left colon if its blood supply or the colon wall were directly involved with the liposarcoma.
3. We typically do not recommend radiation therapy (RT). Its role is questionable owing to the lack of randomized clinical trial data, and we have concerns regarding its adverse effects on kidney function. If RT were to be given, the preferred approach would be 50.4 Gy preoperatively rather than intraoperative or postoperative RT, owing to the high risk of complications with the latter. Interest is growing in higher doses of RT to posterior structures (eg, dose-painting intensity modulated RT).
4. If the biopsy specimen showed well-differentiated liposarcoma, the treatment would still be complete surgical resection, with a similar approach to organ preservation. Thus, in the absence of a clinical trial, we would not have performed a biopsy on this patient (1), because the findings would not alter our treatment approach and the diagnosis of retroperitoneal liposarcoma is evident from the imaging studies alone (2, 3).

Conflict of interest: none.

References


http://dx.doi.org/10.1016/j.ijrobp.2017.01.234

The Toronto Solution: Fat Free With a Side of STRASS

1. Complete resection is the cornerstone of treatment. We would offer participation in the European Organization for Research and Treatment of Cancer (STRASS) randomized trial of preoperative radiation therapy (RT) plus surgery versus surgery alone.

Off trial, given the current international equipoise, we would rarely make a strong recommendation for or against preoperative RT. Based on our experience (1), we believe preoperative RT is safe and has minimal morbidity, although we acknowledge that its effectiveness is unknown.

2. Complete macroscopic resection is the goal. Although the imaging report describes 2 solid tumor nodules, we know that for retroperitoneal dedifferentiated liposarcoma, the solid areas are frequently associated with adjacent lower density areas of liposarcoma, and the extent of primary tumor can be underappreciated both on imaging studies and...

Kaled Alektiar, MD
Department of Radiation Oncology
Memorial Sloan Kettering Cancer Center
New York, New York

Samuel Singer, MD
Department of Surgery
Memorial Sloan Kettering Cancer Center
New York, New York

0360-3016/S - see front matter © 2017 Elsevier Inc. All rights reserved.
during surgery. Therefore, our approach is to remove the grossly apparent tumor and all fat from the ipsilateral retroperitoneum, preserving the major neurovascular structures, where technically possible. In the present case, multivisceral organ resection would include removal of the left kidney, possibly the spleen and tail of the pancreas, and, depending on the intraoperative findings, possibly the splenic flexure and left colon. For left-sided retroperitoneal sarcoma, we would not perform prophylactic appendectomy.

3. If the patient chooses RT, we would recommend 50.4 Gy in 28 fractions preoperatively, without an intraoperative or a postoperative boost. Preoperative RT is preferable for technical reasons and to minimize toxicity. The evidence supporting intraoperative RT is weak, and our experience with postoperative brachytherapy was disappointing.

4. For well-differentiated liposarcoma, we would similarly offer the European Organization for Research and Treatment of Cancer trial. If declined, we would proceed as described above. With extended follow-up, retroperitoneal well-differentiated liposarcoma carries a high risk of recurrence, which aggressive initial treatment might reduce.

Carol J. Swallow, MD, PhD
Department of Surgical Oncology
Princess Margaret Cancer Centre, and
Department of Surgery
Sinai Health System
University of Toronto
Toronto, Ontario, Canada

Charles N. Catton, MD
Department of Radiation Oncology
Princess Margaret Cancer Centre
University of Toronto
Toronto, Ontario, Canada

Conflict of interest: none.

References


2. Baldini EH. The conundrum of retroperitoneal liposarcoma—to be more aggressive or less aggressive? Int J Radiat Oncol Biol Phys 2017; 98:269-270.


http://dx.doi.org/10.1016/j.ijrobp.2017.01.233

Conflict of interest: none.
References

2. Baldini EH. The conundrum of retroperitoneal liposarcoma—to be more aggressive or less aggressive? *Int J Radiat Oncol Biol Phys* 2017;98:269-270.

http://dx.doi.org/10.1016/j.ijrobp.2017.01.232

A Rational Approach to Surgery for Retroperitoneal Sarcomas: Extent of Resection Tailored to Histologic Findings

1. I would offer the STRASS trial (EORTC 62092), randomizing patients to surgery alone versus preoperative radiation therapy (RT) followed by surgery. If declined, I would favor preoperative RT given the high rate of local recurrence. I would not recommend systemic therapy, brachytherapy, or postoperative RT.
2. I would favor multivisceral resection, including en bloc left nephroureterectomy and adrenalectomy. If the left mesocolon were attached to tumor, I would perform an en bloc left colectomy. The tumor abuts the psoas; thus, I would remove the psoas fascia. If the tumor were partly encasing the splenic vessels, distal pancreatectomy and splenectomy might be necessary. The tumor and stomach are anatomically separated by the lesser sac; thus, the need for partial gastrectomy is unlikely. I would not recommend appendectomy.
3. If the patient (1) declined the STRASS trial, I would recommend preoperative RT. I believe postoperative RT would be too toxic because the retroperitoneal cavity will be filled by hollow viscera. The large tumor bed surface area usually precludes comprehensive delivery of intraoperative RT to all at-risk margins. In our experience, the complication rate with iodine-125 seed brachytherapy was high; we have abandoned brachytherapy in this setting (2). Others have reported significant morbidity with catheter brachytherapy.
4. For well-differentiated liposarcoma (WDLPS), I would consider a more marginal resection and would attempt to save the kidney. The tumor will undoubtedly recur, but the patient could live for a long time. Furthermore, at some point, she might require nephrotoxic chemotherapy. We are re-evaluating the option of preoperative RT for WDLPS. Preliminary data have suggested that RT reduces the incidence of local recurrence for WDLPS, although it was not associated with improved survival (3).

Chandrajit P. Raut, MD, MSc
Division of Surgical Oncology
Brigham and Women’s Hospital
Dana-Farber Cancer Institute
Harvard Medical School
Boston, Massachusetts

Conflict of interest: none.

References

1. Baldini EH. The conundrum of retroperitoneal liposarcoma—to be more aggressive or less aggressive? *Int J Radiat Oncol Biol Phys* 2017;98:269-270.

http://dx.doi.org/10.1016/j.ijrobp.2017.01.231

Retroperitoneal Liposarcoma: An Aggressive Strategy to Maximize Disease Control

1. This patient (1) is affected by a single liposarcoma with multiple components. We would perform a core biopsy of the worst-appearing component of the lesion. Our strategy would depend on the grade of the dedifferentiated component (2). If the malignancy grade were high, we would consider neoadjuvant chemotherapy (≥3 courses of anthracycline plus ifosfamide-based chemotherapy), because the systemic risk would be greater than the local risk (3). Surgery would follow chemotherapy. If the malignancy grade were low or
intermediate, we would instead consider preoperative radiation therapy to maximize the chance of local control (3).

2. In all cases, resection would include left nephrectomy and adrenalectomy, because they are both encased by the tumor. Splenectomy and left pancreatectomy would be needed to clear the upper quadrant of the abdomen, and the stomach would probably be spared, because it lies in a different plane. Resection of the left colonic flexure, part of the diaphragm, and psoas muscle might also be needed. We would not perform prophylactic appendectomy.

3. For low or intermediate grade of the dedifferentiated component, we recommend preoperative radiation therapy to 50 Gy in 25 fractions. No intraoperative or postoperative boost would be planned, because neither has been proved to add benefit and both would add toxicity. Likewise, we would not consider postoperative radiation therapy.

4. If the final diagnosis of the biopsy specimen were well-differentiated liposarcoma, we would treat using the same approach as for dedifferentiated liposarcoma with a low or intermediate grade. Specifically, we would recommend 50 Gy preoperative radiation therapy, and the surgical plan as described (no. 2) would not change.

Sandro Pasquali, MD
Alessandro Gronchi, MD
Department of Surgery
Fondazione IRCCS Istituto Nazionale dei Tumori
Milan, Italy

Conflict of interest: none.

References

1. Baldini EH. The conundrum of retroperitoneal liposarcoma—to be more aggressive or less aggressive? *Int J Radiat Oncol Biol Phys* 2017; 98:269-270.


http://dx.doi.org/10.1016/j.ijrobp.2017.01.230