

## Utility of percutaneous image-guided biopsies of retroperitoneal masses prior to surgical resection

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## Aims and objectives

Several retroperitoneal masses (well-differentiated liposarcomas, myelolipomas, adrenal adenomas) have a relatively pathognomic imaging findings that obviate the need for biopsies while others are indeterminate by imaging. While the radiological appearance of a retroperitoneal mass plays a significant role in management, the histologic diagnosis may be the most helpful in guiding treatment. The purpose of this study is to assess whether prior knowledge of the histological diagnosis of a surgically resected unknown retroperitoneal mass would have changed clinical management.

## Methods and materials

**Patient population:** Patients that underwent biopsy and/or surgical resection of retroperitoneal masses at a single institution from 01/2009 to 12/2017 were included in this study. All patients underwent a pre-surgical MRI or CT study. Pre-procedural chemotherapy or radiotherapy was not performed.

**Data acquisition:** Patient age and sex, preoperative history and physical examination, radiology diagnosis, surgeon diagnosis, and pathology data were collected. The histological diagnosis of the resected mass was compared to the radiologic and surgical differential diagnosis prior to resection.

**Evaluation:** All cases were anonymized and the preoperative information (preoperative imaging and preoperative history and physical examination) were reviewed by an independent expert surgeon. We simulated the management of these cases assuming the diagnosis was known and compared clinical management in cases without preoperative biopsies to that expected if preoperative biopsies were performed. The proportion of cases where clinical management would have changed, the time to delay in appropriate treatment, and length of hospital stay were recorded. Change in clinical management was defined as whether optimal therapy included neoadjuvant preoperative radiotherapy, neoadjuvant preoperative chemotherapy, a different surgical approach or procedure, or no surgery. Additionally, patient symptomatology and clinical status was included in the consideration of optimal therapy.

**Statistical analysis:** Proportions were compared using Fisher's exact tests.

## Results

170 patients underwent biopsy and/or resection of a retroperitoneal mass, of whom 44 (25.9%) patients went directly to surgical resection without a pre-surgical biopsy (Fig 1). 5/44 (11.4%) ( $p = 0.000974$ ) patients would have had a change in clinical management if the histology of the mass was known prior to resection. These 5 patients had on average a 7.6 (SD 6.4) day length of hospital stay and had on average a 40.3 (SD 25.7) day delay to receiving appropriate therapy (Table 1). Two representative cases are shown in the accompanying figures where there was a delay in treatment with chemotherapy (Fig 3) and a case where surgical resection may not have been necessary (Fig 4). Clinical management was appropriate in 15/15 (100 %) of patients with resected liposarcomas where biopsy was not performed (Fig 2).

Images for this section:

Pre-surgical DDx	Histologic Dx	Sex	Age	Hospital Stay	Change in management	Delay to treatment
adrenal malignancy	B cell lymphoma	F	70	5	Chemotherapy	32 days delay to chemotherapy
angiomyolipoma, sarcoma	myelolipoma	F	55	5	No surgery	70 days from surgery to IR embolization
teratocarcinoma, liposarcoma	mucinous adenocarcinoma	M	61	19	Chemotherapy prior to surgery	No subsequent treatment
sarcoma, solid tumor	Seminoma	M	24	4	Chemotherapy	27 days delay to chemotherapy
liposarcoma	myelolipoma	M	58	5	No surgery	lost to follow-up

Table 1

Table 1

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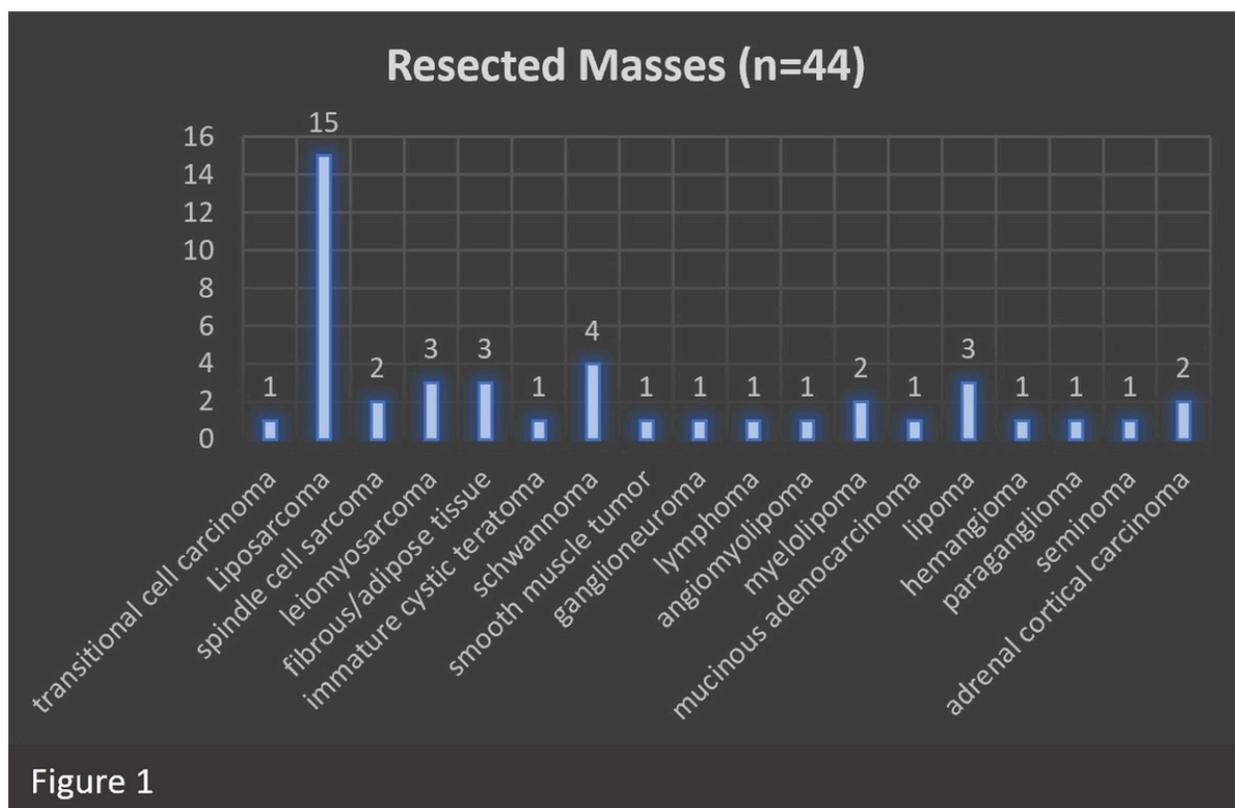
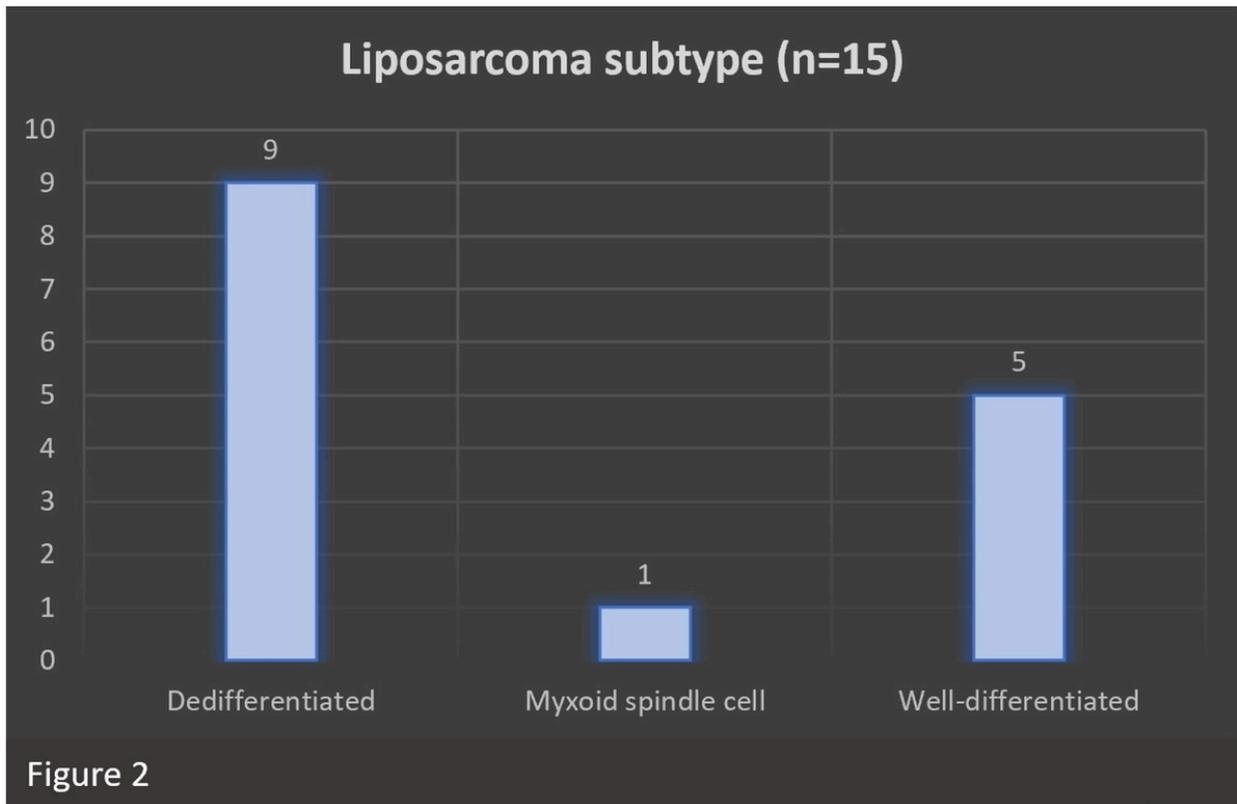


Figure 1

Fig. 1

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**Fig. 2**

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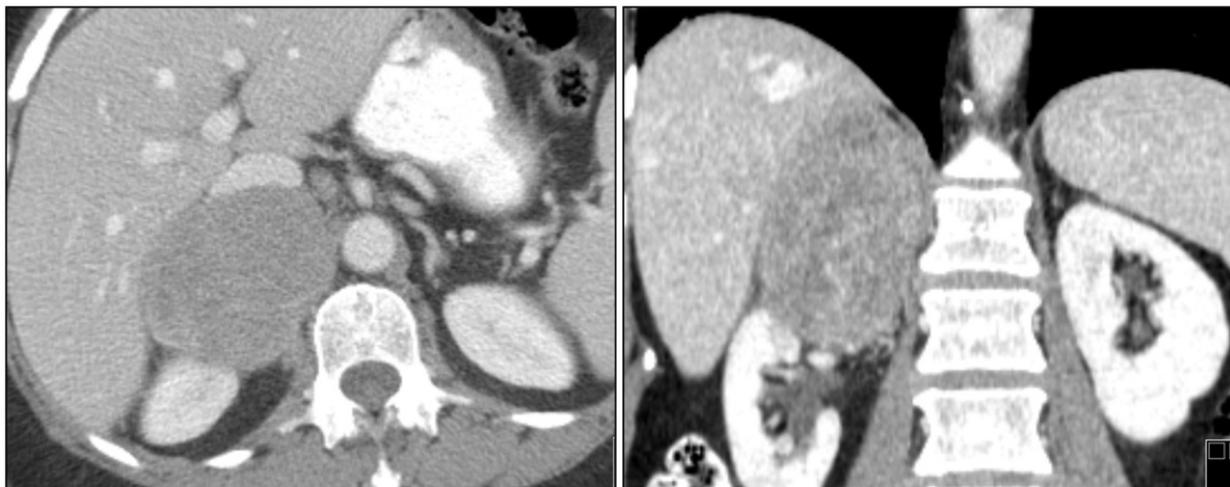


Figure 3: 70 year-old female undergoing evaluation for cough was incidentally found to have a right retroperitoneal mass. Pre-operative diagnosis by radiologist and surgeon favored adrenal neoplasm. Post-resection pathology showed that it was a B-cell lymphoma.

**Fig. 3**

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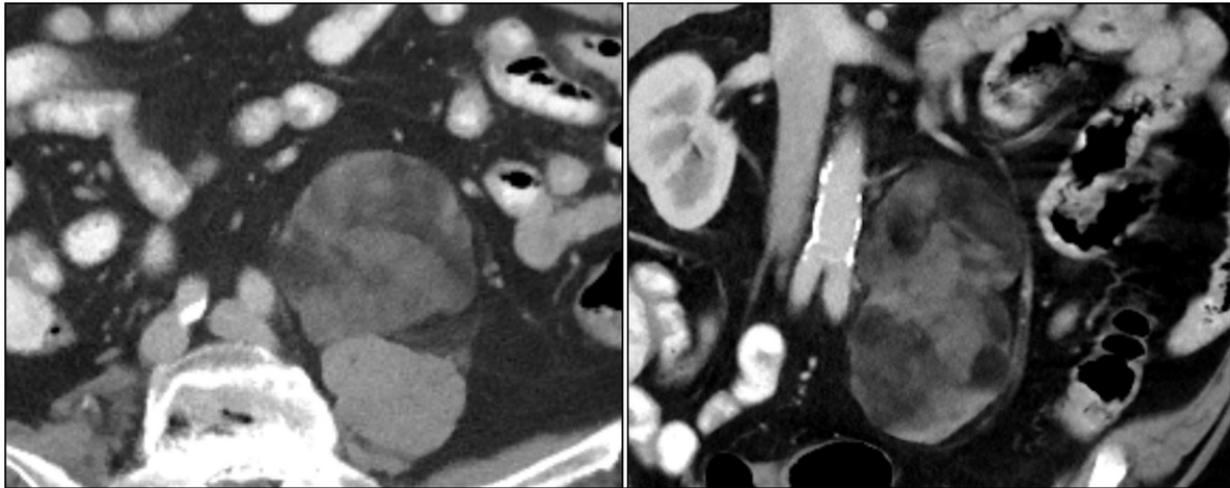


Figure 4: 58 year-old male undergoing work-up for back pain was incidentally found to have a large left retroperitoneal mass. Pre-operative diagnosis by radiologist and surgeon favored retroperitoneal liposarcoma and the patient underwent resection without biopsy. Post-resection pathology showed that it was a myelolipoma.

**Fig. 4**

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## Conclusion

Retroperitoneal masses that are not consistent with a well-differentiated liposarcoma based on imaging should be biopsied prior to surgery. There was a significant change in clinical management if the retroperitoneal mass histologic diagnosis was known prior to resection.

## References

Matthyssens LE, Creytens D, Ceelen WP. [Retroperitoneal liposarcoma: current insights in diagnosis and treatment](#). *Front Surg*. 2015 Feb 10;2:4.

Morosi C, Stacchiotti S, Marchianò A, Bianchi A, Radaelli S, Sanfilippo R, Colombo C, Richardson C, Collini P, Barisella M, Casali PG, Gronchi A, Fiore M. [Correlation between radiological assessment and histopathological diagnosis in retroperitoneal tumors: analysis of 291 consecutive patients at a tertiary reference sarcoma center](#). *Eur J Surg Oncol*. 2014 Dec;40(12):1662-70.

Ustün M, Heilo A, Fosså S, Aass N, Berner A. [Ultrasound-guided fine needle cytology of retroperitoneal masses in patients with malignant germ cell tumours: diagnosis and therapeutic impact](#). *Eur Urol*. 2002 Sep;42(3):221-8; discussion 228.

Tan MC, Yoon SS. Surgical management of retroperitoneal and pelvic sarcomas. *J Surg Oncol*. 2014;111(5):553-61.