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Pleomorphic retroperitoneal liposarcoma with kidney infiltration mimicking renal trauma

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ABSTRACT

Pleomorphic retroperitoneal liposarcoma are uncommon malignant tumor which hard to treat condition for its local aggressiveness and clinical specificity. A 84 years-old male patient complained with an abdominal mass and left flank pain without hematuria. The patient also complained of shortness of breath due to left pleural effusion. Contrast CT Scan revealed left renal hematoma with suggestive of renal trauma. Left flank exploration and tumor excision was performed to the patient. Histopathological examination showed pleomorphic retroperitoneal liposarcoma. In seventh day post-operative, the condition was fully recovered. This is an unusual presentation retroperitoneal mass. Pleomorphic retroperitoneal liposarcoma can provide atypical imaging.

Introduction

Sarcomas, consisted of soft tissue sarcomas (STSs) and bone sarcomas, are a heterogeneous group of mesenchymal malignancies that can develop at any age, comprising approximately 1% of all adult malignancies and 15% of pediatric malignancies. Among the retroperitoneal sarcomas, which represent the 10–20% of all soft tissue sarcomas, the most common histology type is represented by liposarcoma, covering from 20% to 45% of all cases.[1] Although retroperitoneal liposarcoma (RLPS) is the most frequent (20–45%), which is followed by other types of tumor such as leiomyosarcoma, malignant fibrous histiocytoma or undifferentiated pleomorphic sarcomas, it was considered an uncommon malignant which representing between 0.07% and 0.2% of all neoplasms. In Indonesia, retroperitoneal liposarcoma occurs rarely which only less than 5% of all liposarcoma cases and during 2019, there were only 3 retroperitoneal carcinomas but none was originated from fat tissue in our hospital.[1,2] Most RLPS originate from perirenal fatty tissue.[3] We report the case of a 84 year-old man who underwent surgery for a retroperitoneal tumor that caused an increase in the abdominal perimeter with a left flank pain and gasping due to pleural effusion. Histopathological analysis revealed a pleomorphic retroperitoneal liposarcoma with kidney infiltration.

Case presentation

A 84 year-old man present with an abdominal mass and left flank pain. He also complained of shortness of breath. On physical examination, there was a lump in the left flank accompanied by progressive pain. Initial laboratory examination such as blood count did not reveal any particular findings, but liver function show slight elevatations. The patient underwent Ultrasound and MSCT. CT-scan with contrast revealed a hyperdense lesion, suggestive of hematoma due to renal trauma or abscess (Fig. 1). The decision was made to perform left flank exploration. During left Flank exploration, retroperitoneal mass was found and tumor excision was performed followed by pleural fluid puncture. Then the tissue examined by the histopathology department (Fig. 2). Patient's post-surgery recovery was uneventful. Pathological findings revealed a Pleomorphic retroperitoneal liposarcoma. Unfortunately the patient was loss to follow-up.

Discussion

Retroperitoneal liposarcoma are uncommon malignant tumor, representing between 0.07% and 0.2% of all neoplasms.[3] They have an incidence of approximately 2.5 inhabitants per 100,000, with an average age of presentation between 40 and 60 years, with a distribution in both sexes equally.[2] It predominantly originates from fat, loose connective tissue, fascia, muscles, lymphatic tissue or residual embryonic

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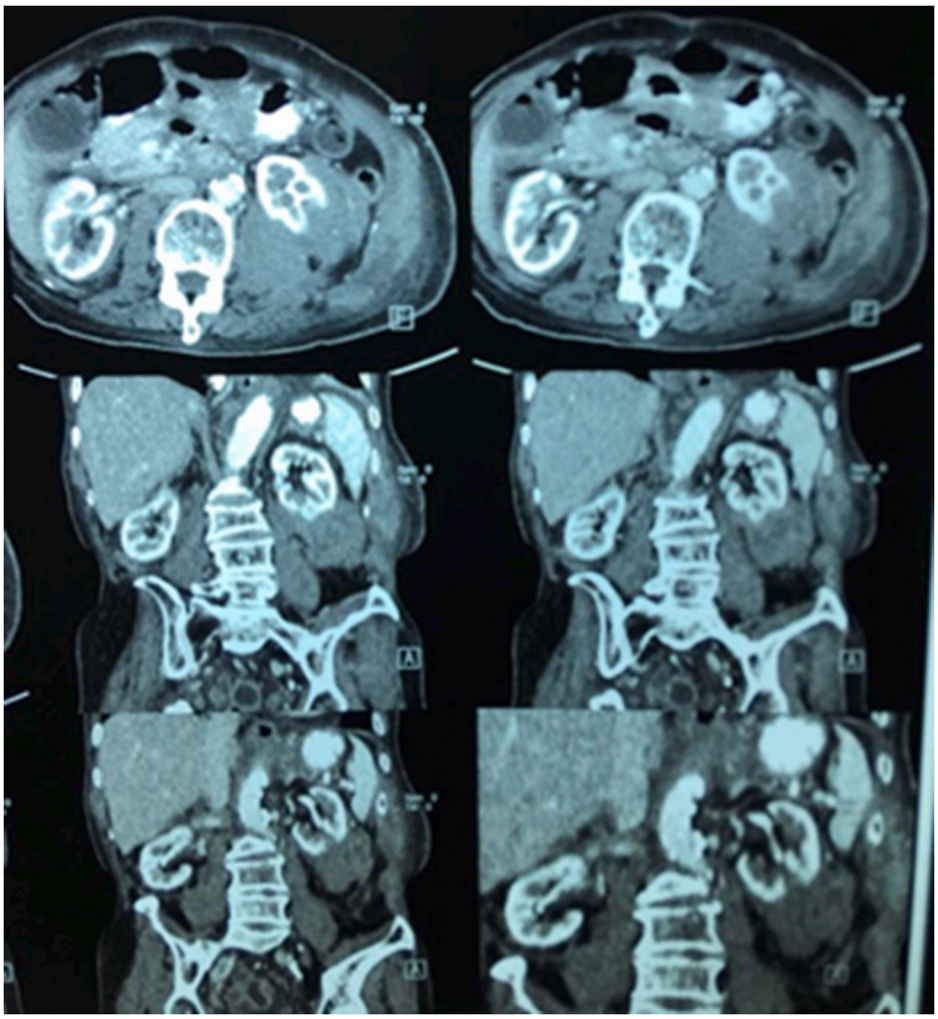

Fig. 1. Hyperdense lession at the left kidney in the abdominal pelvis CT-Scan with contrast.

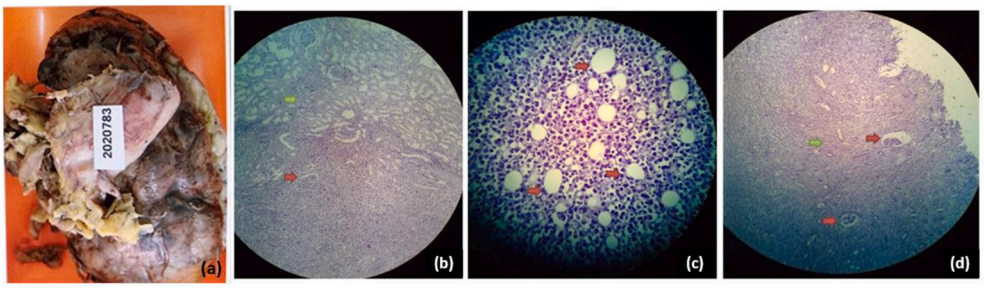

Fig. 2. (a) The gross tumor: The mass measures 15 × 9 × 8 cm; (b) Fibrotic renal kidney and atrophic renal glomerulus. (c) Various size of tumor cell with pleomorphic nucleus and clear cytoplasm, between which appear mature fat cells shows infiltration to fat tissue. (d) Transition of the renal parenchyma with tubular tubules at the top and Tumor cells at the bottom.

tissue, of which 80% is malignant. Retroperitoneal liposarcoma is the most frequently observed subtype of retroperitoneal tumor.[4] It usually occurs at 40–60 years of age, and the ratio between the genders is 1:1.[5]

This case was interesting because the tumor was similar to hematoma due to traumatic event. When a patient presents with an expanding, nontraumatic mass simulating a hematoma, several differential diagnoses should be considered including aneurysm, bleeding tendency, chronic expanding hematoma, and soft-tissue sarcoma.

To differentiate from other soft tissue tumors, auxiliary examinations are required, including ultrasonography, CT and MRI. These examinations provide information on tumor's position and size, in addition to an appropriate staging of the tumor extension and involved structures, which aids greatly in designing a surgical scheme. Ultrasonography is usually preferred over CT scan and MRI for its convenience. On a CT scan, retroperitoneal liposarcoma usually appears as a large encapsulated mass containing variable amounts of fatty and soft tissue components.[4] Intermediate-grade tumors appear relatively lucent with transverse septations. High-grade tumors appear dense and heterogenous and enhances with intravenous contrast. WDLPSs tend to have smooth margins, a lobular contour, and a predominate attenuation of fat with no visible calcification. Internal nodular septations of soft tissue attenuation that demonstrate mild to moderate enhancement help

Table 1
Studies on retroperitoneal liposarcoma1-3.

Author	Year	Population	N	Intervention	Results
P. Leao et al	2012	An 86-year old male patient with giant recurrent retroperitoneal liposarcoma	1	Partial removal surgery	There were no complications during the period immediately following the surgery. However, the patient died on post-operative day 7 due to cardio-respiratory arrest.
Neuhaus SJ et al	2004	Patients with primary and recurrent RPLS since 1990 to 2003 treated in Royal Marsden Hospital	119	Surgery for primary RPLS and palliative surgery for recurrent RPLS	- 34 had no evidence of recurrence after median follow-up of 26 months. - Forty-seven patients had palliative surgery for recurrent RPLS. Median survival from time of last operation to death was 27 months
Caizzone A et al	2015	A 64-year-old women with giant pleomorphic retroperitoneal liposarcoma.	1	Surgical resection	At 24 months of follow-up the patient is disease free.

distinguish them from benign lipomas. Calcification within the mass is associated with a poor prognosis. MLPSs tend to have attenuation less than that of muscle and a unique enhancement pattern consisting of gradual, heterogenous, and often incomplete enhancement. Some myxoid tumors may appear cystic on noncontrast images, but demonstrate internal enhancement after the administration of contrast agents. PLPSs have predominant attenuation similar to muscle with a varying degree of contrast enhancement. MRI is important for the diagnosis of liposarcoma invasion of the abdominal aorta or inferior vena cava.

The World Health Organization (WHO) has classified the liposarcomas into two groups according to the degree of differentiation in low grade (well-differentiated liposarcoma and the myxoid) and high degree (dedifferentiated, pleomorphic liposarcoma and of mixed cells).[3] The well-differentiated and the dedifferentiated liposarcoma are the most frequent types. Well-differentiated liposarcoma have a slower growth rate and have a less aggressive behavior with a lower rate of distant metastasis compared to dedifferentiated liposarcomas. Its management is fundamentally surgical (Table 1). In the present case, In the seventh day of post-surgery, the wound was good, shortness of breath reduced, and VAS pain score was 2.

Conclusion

In summary, this is an unusual presentation retroperitoneal mass. Unfortunately the patient was loss to follow-up. Pleomorphic retroperitoneal liposarcoma can provide atypical imaging.

Author contribution

Concepts-FEH, SVP; Design-FEH, SVP; Definition of intellectual content- FS; Literature search-FEH, SVP; Data acquisition- FEH, BSH; Data analysis-FEH, SVP; Manuscript preparation-FEH, SVP; Manuscript editing- SVP, FS; Manuscript review- FS; Guarantor **(ONLY ONE)-Sawkar Vijay Pramod**

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Conflicts of interest/Competing interests

None.

Ethics approval

This study had ethical clearance from Universitas Padjadjaran ethical commity.

Consent to participate

None.

Availability of data and material

None.

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