Urology Case Reports 21 (2018) 24–26

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Oncology

Dedifferentiated liposarcoma of the left kidney: A rare case report

Chiao-Ching Li[a,b], Chiao-Zhu Li[b,c], Chin-Yu Liu[d], Hong-Wei Gao[e], Sheng-Tang Wu[a], Tai-Lung Cha[a], Guang-Huan Sun[a], Dah-Shyong Yu[a], Chih-Wei Tsao[a,*]

[a] Division of Urology, Department of Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan
[b] Department of Surgery, Kaohsiung Armed Forces General Hospital, Kaohsiung, Taiwan
[c] Department of Neurological Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan
[d] Department of Nutritional Science, Fu Jen Catholic University, New Taipei, Taiwan
[e] Department of Pathology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan

ARTICLE INFO

Keywords:
Kidney
Liposarcoma
Trans-arterial embolization
Tumor

Introduction

Incidental renal mass affects half of people older than 50 years. The mass is detected by image when evaluating non-renal complaints. Liposarcoma is one of the common soft tissue sarcoma (STS) in adults and the most common lesion is observed in the retroperitoneum. In our case, the liposarcoma originates from the left kidney, not from the retroperitoneum.

Case presentation

A 67-year-old man had a history of hypertension for 20 years. The patient experienced intermittent fever for 1 month, but no obvious source was found. The laboratory data were within normal range, including normal urine analysis. Initially, abdominal ultrasonography was arranged to evaluate the possible source. A heterogeneously, hypoechoic mass about 92 mm in diameter was revealed over the left kidney (Fig. 1A). Subsequently, computed tomography (CT) (Fig. 1B) of the abdomen was performed; a hypointense mass without downward displacement of the left kidney was observed. Hence, a tumor was considered from the kidney parenchyma because it was analogous to an atypical enhanced renal tumor in the arterial phase of CT, not from retroperitoneum. Further management, such as magnetic resonance imaging (MRI) (Fig. 1C) of the kidney, was arranged to evaluate in details. A 1.5 T superconducting magnet and phase-arrayed body coil were used. The tumor was huge (size: 10.3 cm × 9.3 cm × 8 cm) (Fig. 1D) and had an ambiguous border over the upper pole of the kidney. It extended into the perinephric tissues but not into the ipsilateral adrenal gland. Trans-arterial embolization (TAE) of the tumor (Fig. 2A) was planned to prophylactically reduce blood loss before surgery.

A left subcostal incision was made for radical nephrectomy. The solid renal tumor with yellow fat component was disclosed (Fig. 2B). The pathologic findings (Fig. 3, A-D) showed hypercellular spindle tumor cells with rhabdomyoblastic differentiation. In nuclear immunohistochemical staining, murine double minute 2 (MDM2) and P16 for tumor cells were positive. The renal capsule and perirenal fat indicated tumor invasion. Finally, dedifferentiated liposarcoma of the left kidney, stage pT3 was diagnosed based on pathologic and imaging findings. No metastasis was observed during the 1-year follow-up.

Discussion

Renal parenchyma cancer in 2014 is the fourteenth most common cancer in male Taiwanese, sixth most common in male Americans, and fourth most common in male British individuals.[1,2] The risk factors of renal cancer include family history, hypertension, smoking, obesity, or hereditary kidney disease. Hematuria, lower back pain, palpable lump, and fever are the symptoms of renal cancer. Our patient has hypertension and no smoking habit, no palpable lump. The renal tumor is found incidentally by ultrasonography due to seeking fever source.

There are several types of RCC, including clear cell (75–80% in RCC), papillary (10%), chromophobe (5%), collecting duct, and medullary type. Renal sarcoma is rare type and develops in genitourinary

* Corresponding author. Division of Urology, Department of Surgery, Tri-Service General Hospital, National Defense Medical Center, Taiwan.
E-mail address: weisurger228@yahoo.com.tw (C.-W. Tsao).

https://doi.org/10.1016/j.eucr.2018.07.016
Received 26 June 2018; Accepted 16 July 2018
Available online 11 August 2018

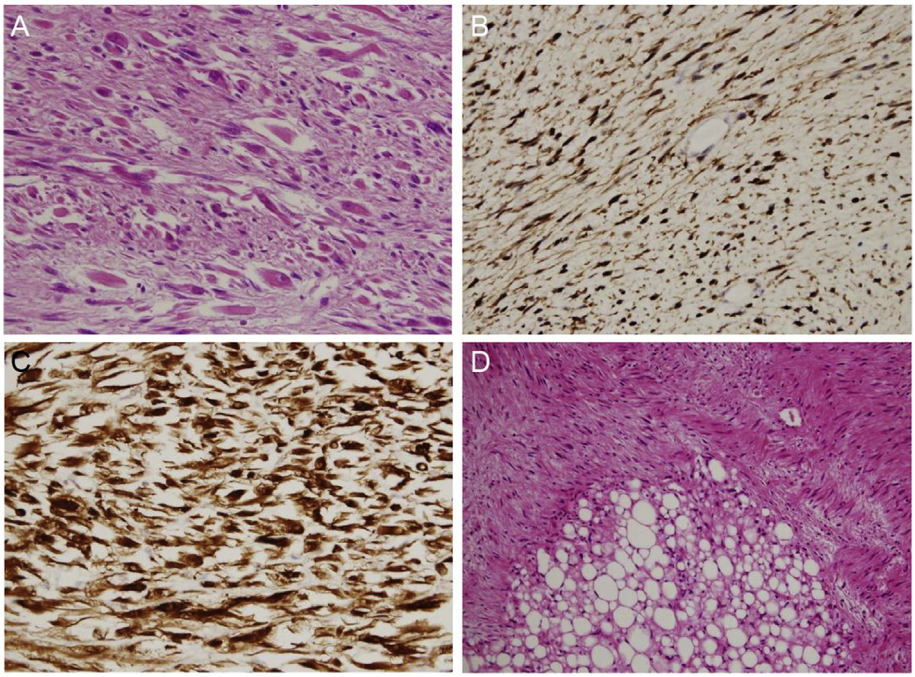

Fig. 1. (A) A hypoechoic lesion is over the upper pole of the left kidney on the ultrasonogram. (B) A poorly enhanced mass without downward displacement of the left kidney is on the CT in the coronal view. (C) Renal tumor is on the MRI in the axial view. (D) Renal tumor is on the MRI in the coronal view.

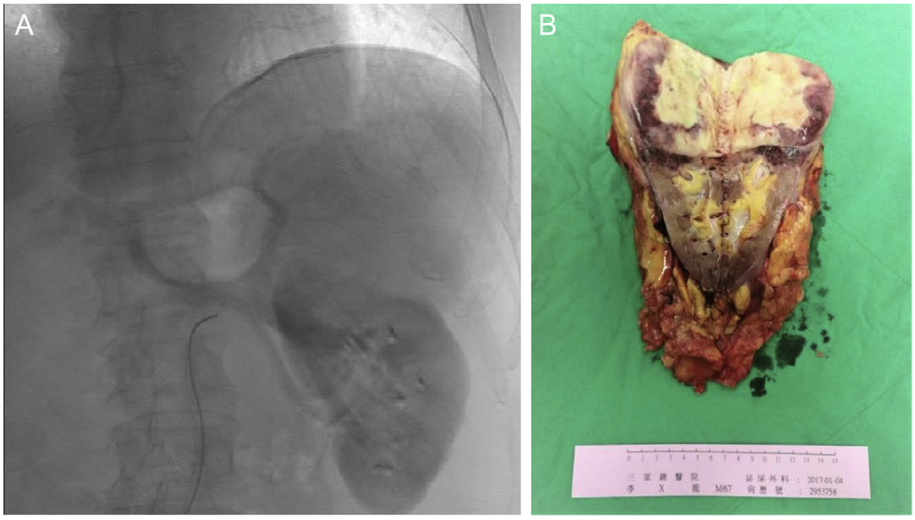

Fig. 2. (A) A hypervascular mass over the upper pole of the left kidney is in the renal arteriogram. (B) Gross specimen. The solid mass with yellow fat is located over the upper pole of the kidney. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

system about 1–2% of cases.[3] It is difficult to distinguish from other types of RCC by image, except the typical clear cell RCC. Our patient has a heterogeneously hypoechoic renal mass via ultrasonography. Furthermore, there is poor enhancement during the corticomedullary phase (25–70 seconds after the administration of contrast). MRI is arranged for further evaluation according to T2-weighted differences. Intermittent signal intensity of the renal tumor with fluid accumulation is presented on axial and coronal views of MRI. Yet, it remains difficult to differentiate which type of RCC before surgery.

The renal tumor is supplied by the inferior suprarenal artery in our patient. Gelform is instilled from the left renal artery to impede the distal vascularity supplement of the renal tumor.

Clear cell RCC has clear cytoplasm and arranged in nests with intervening blood vessels on a microscopic image. The pathologist uses various stains to make a differential diagnosis. The specimen is stained negative for the epithelial membrane antigen. This means that the tumor does not originate from the epithelium. However, the specimen is stained positive for vimentin, actin, and desmin, indicating that the tumor has rhabdomyoblast-like cells. Additionally, the specimen is stained positive for MDM2 and P16, hypercellular tumor cells with pleomorphic are found. Therefore, dedifferentiated liposarcoma is diagnosed.

A poor prognosis of sarcoma has been reported; the 5-year survival rate is 39%. Surgical resection is the main treatment.[4] Chemotherapy is used for tumors that cannot be resected completely, and recurrent and distant metastases.[4] Radiotherapy is used when the tumor cannot be resected completely, and adjuvant therapy is provided if tumor recurrence or inadequate surgical margins are presented postoperatively.[4] Target therapy and immunotherapy are controversial.[4] The most important prognostic factors for survival are the histologic subtype or grade and completeness of resection.[4] In the report by Wang et al.,[5] the overall 1-year, 3-year, and 5-year survival rates were 86%, 41%, and

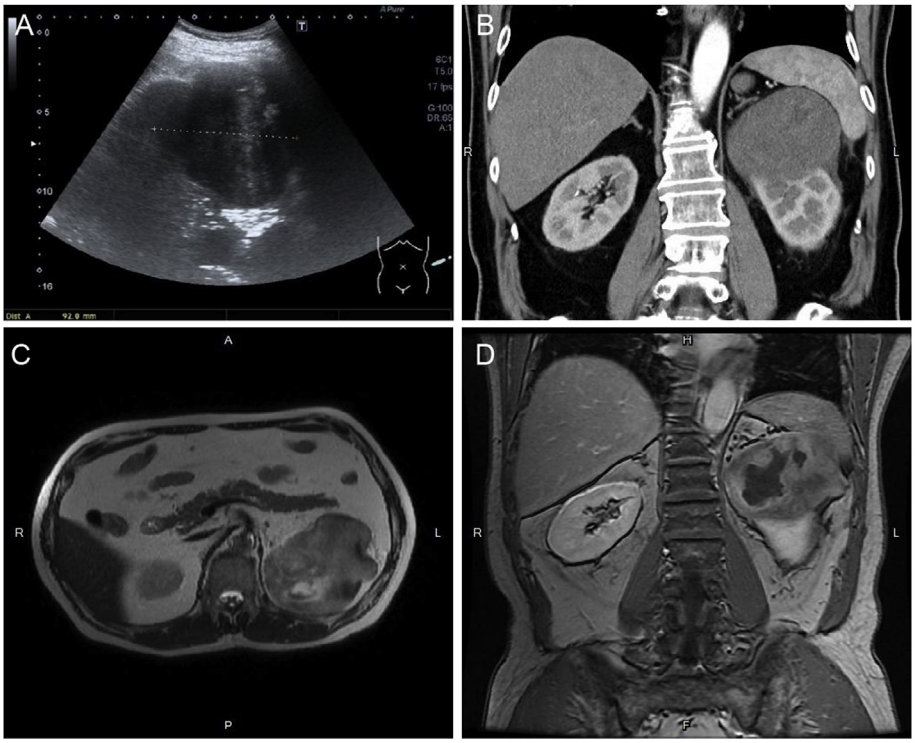

Fig. 3. (A) Dedifferentiated liposarcoma shows nuclear hyperchromatism and pleomorphism (hematoxylin and eosin [H&E] stain, original magnification 200 ×); (B) tumor cells with rhabdomyoblastic differentiation characterized by abundant eosinophilic cytoplasm with eccentric nuclei (H&E stain, original magnification 400 ×); (C) nuclear immunohistochemical staining of MDM2 (original magnification 400 ×); (D) nuclear immunohistochemical staining of P16 (original magnification 400 ×).

15%, respectively. The median survival was 28 months. The median survival with metastases or after recurrence was 8–10 months. There was no local recurrence in our patient during the 1-year follow-up.

Conclusion

Renal liposarcoma is rare in the literature and is difficult to make diagnosis under a series of examination. The main treatment for liposarcoma is surgical resection, whereas chemotherapy or radiotherapy is used for unresectable tumors. Because the median survival with metastases or after recurrence is 8–10 months, physicians should be more cautious during the follow-up.

Consent

The patient provided written informed consent for the information presented here to be shared.

Conflicts of interest

None.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgments

We appreciated Mrs. Lai and Mrs. Chen to arrange these information for English correction.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.eucr.2018.07.016.

References

1. American Cancer Society. Cancer facts & figures. . Available from: https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html; 2017.
2. Office of National Statistics. *Cancer Registration Statistics, England.* 2014; 2014. Available from: https://www.gov.uk/government/statistics/cancer-registration-statistics-england-2014.
3. Öztürk H. Prognostic features of renal sarcomas (Review). *Oncol Lett.* 2015;9:1034–1038.
4. Singer S, Antonescu CR, Riedel E, Brennan MF. Histologic subtype and margin of resection predict pattern of recurrence and survival for retroperitoneal liposarcoma. *Ann Surg.* 2003;238:358–370 discussion 370-371.
5. Wang X, Xu R, Yan L, et al. Adult renal sarcoma: clinical features and survival in a series of patients treated at a high-volume institution. *Urology.* 2011;77:836–841.