

Diagnostic journey of a primary renal synovial sarcoma

Vishal Raza¹, Dawood Arshad¹, Khalid Irshad¹, and Khalid Khan¹

¹Fatima Jinnah Medical University

March 6, 2021

Abstract

A middle aged female presented with a large flank mass, was initially reported to be a renal cell carcinoma of the sarcomatoid variant. Discordant presentation lead to further pathological work-up and a primary renal synovial sarcoma was diagnosed. We present our journey in images.

Diagnostic journey of a primary renal synovial sarcoma: A case report

Abstract:

Large flank mass reported as renal cell carcinoma, sarcomatoid variant had discordant presentation; further pathological work-up with $t(X;18)$ showed a synovial sarcoma.

Case Presentation:

Middle-aged female with right flank pain had multiple visits to general practitioners in rural health centres in Pakistan.

CAT scan reported “Massive heterogenous mass replacing the whole of the right kidney, with residual scanty renal tissue, at its medial aspect.”

During surgery 15x18cm mass involving inferior vena cava was excised. (Figure 1)

Histopathology:

- *19x17x11cm mass, upper and lower pole and mid region; adherent to capsule; with necrosis. Lymph nodes free of tumor.*
- *Positive markers: CK, Vimentin, TLE-1, CD99, EMA, Cytokeratin AE1/AE3 and Cytokeratin 20.*
- *Renal cell carcinoma, **sarcomatoid variant***

(Figure 2)

Should sarcomatoid change in renal cell carcinoma be further worked up to diagnose accurately?

Metastatic work-up was negative, and the literature discordant with clinical presentation. Chromosomal translocation $t(X;18)$ was performed and synovial sarcoma diagnosed.[1]

Discussion:

Synovial sarcoma is extremely rare, aggressive presenting in young adults in periarticular tissue, commonly in lower limbs. Multipotent stem cells lead to sarcomatoid appearance. [2]

Renal sarcomas differentiated from embryonal carcinoma by the characteristic translocation. [3]

Case reports found large masses, grayish-white or tan with focal necrosis. Spindle cell morphology was consistent. [4-13]

Conclusion:

For developing countries, where cytogenetics is not routinely available in most public hospitals, endeavor to undertake $t(X;18)$ analysis for sarcomatoid change in a renal carcinoma.

Key Message:

Sarcomatoid change in a renal tumor should undergo cytogenetic analysis of $t(x;18)$ to diagnose accurately. Surgeons should be vigilant regarding pathology diagnosis.

References

1. Dal Cin P, Rao U, Jani-Sait S, Karakousis C, Sandberg AA. Chromosomes in the diagnosis of soft tissue tumors. I. Synovial sarcoma. *Mod Pathol.* 1992;5(4):357-62.
2. Caracciolo JT, Henderson-Jackson E, Binitie O. Synovial sarcoma of bone: Sarcoma typically of soft tissues presenting as a primary bone tumor. *Radiol Case Rep.* 2019;14(2):204-7.
3. Argani P, Faria PA, Epstein JI, Reuter VE, Perlman EJ, Beckwith JB, et al. Primary renal synovial sarcoma: molecular and morphologic delineation of an entity previously included among embryonal sarcomas of the kidney. *Am J Surg Pathol.* 2000;24(8):1087-96.
4. Park SJ, Kim HK, Kim CK, Park SK, Go ES, Kim ME, et al. A case of renal synovial sarcoma: complete remission was induced by chemotherapy with doxorubicin and ifosfamide. *Korean J Intern Med.* 2004;19(1):62-5.
5. Kim DH, Sohn JH, Lee MC, Lee G, Yoon GS, Hashimoto H, et al. Primary synovial sarcoma of the kidney. *Am J Surg Pathol.* 2000;24(8):1097-104.
6. Koyama S, Morimitsu Y, Morokuma F, Hashimoto H. Primary synovial sarcoma of the kidney: Report of a case confirmed by molecular detection of the SYT-SSX2 fusion transcripts. *Pathol Int.* 2001;51(5):385-91.
7. Dai YC, Wu HM, Chang CW, Liou CP, Tzeng CC. A rare synovial sarcoma of the kidney exhibiting translocation (X;18) and SYT-SSX2 fusion gene. *Zhonghua Yi Xue Za Zhi (Taipei).* 2002;65(6):293-7.
8. El Chediak A, Mukherji D, Temraz S, Nassif S, Sinno S, Mahfouz R, et al. Primary synovial sarcoma of the kidney: a case report of complete pathological response at a Lebanese tertiary care center. *BMC Urol.* 2018;18(1):40.
9. Grampurohit VU, Myageri A, Rao RV. Primary renal synovial sarcoma. *Urol Ann.* 2011;3(2):110-3.
10. Moorthy HK, Pillai BS, Varghese J. Primary Renal Synovial Sarcoma: An Oncologic Surprise. *Urol Case Rep.* 2014;2(5):152-3.
11. Dassi V, Das K, Singh BP, Swain SK. Primary synovial sarcoma of kidney: A rare tumor with an atypical presentation. *Indian J Urol.* 2009;25(2):269-71.
12. Dutt UK, Manikandan R, Dorairajan LN, Srinivas BH. Biphasic renal synovial sarcoma with extensive venous tumor thrombosis: A rare presentation. *Urol Ann.* 2018;10(3):339-41.
13. Abbas M, Dammrich ME, Braubach P, Meinardus A, Kramer MW, Merseburger AS, et al. Synovial sarcoma of the kidney in a young patient with a review of the literature. *Rare Tumors.* 2014;6(2):5393.

