jkcvhl.com

KIDNEY CANCER: CASE REPORT

Inflammatory Myofibroblastic Tumor of the Right Kidney Mimicking a Locally Advanced Renal Carcinoma: A Case Report

Ali Ariafar[1], Faisal Ahmed[2], AbdolAzim Khorshidi[3], Simin Torabi-Nezhad[4], Seyed Hossein Hosseini[1]

[1]Urology Oncology Research Center, Department of Urology, School of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran; [2]Urology Research Center, Al-Thora General Hospital, Department of Urology, School of Medicine, Ibb University, Ibb, Yemen; [3]Department of Urology, Dena Hospital, School of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran; [4]Department of Pathology, Dena Hospital, School of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

An inflammatory myofibroblastic tumor (IMT) is a rare neoplasm with an unclear origin that can arise anywhere on the body. It contains spindle cells (myofibroblasts) with different inflammatory elements. Primary IMT of the kidney is a clinically rare disease and is difficult to differentiate from other renal malignancies. We reported a 49-year-old male who presented with right flank pain in the past year. A computed tomography scan showed a mixed density with slight heterogeneous enhancement mass in the upper pole of the right kidney, two small hypodense nodules invading the liver, and another mass in the lateral aspect of inferior vena cava. The patient underwent right radical nephrectomy and metastasectomy. IMT was confirmed by both postoperative histopathological examination and immunohistochemical assay. The patient recovered well after the operation, and no recurrence or metastasis was noted during the 12-month follow-up.

Keywords: case report; inflammatory myofibroblastic tumor; kidney; surgery

Received: 27 May 2022; *Accepted after revision:* 3 November 2022; *Published*: 14 December 2022

Author for correspondence: Faisal Ahmed, Urology Research Center, Al-Thora General Hospital, Department of Urology, School of Medicine, Ibb University, Ibb, Yemen. Email: fmaaa2006@yahoo.com

How to cite: Ariafar A, et al. Inflammatory Myofibroblastic Tumor of the Right Kidney Mimicking a Locally Advanced Renal Carcinoma: A Case Report. J Kidney Cancer VHL. 2022; 9(4): 14–18.

Doi: https://doi.org/10.15586/jkcvhl.v9i4.238

Introduction

An inflammatory myofibroblastic tumor (IMT) of the kidney is an uncommon neoplasm (1). The prognosis of this tumor has altered over a course of time from a benign reactive process to a high malignant potential neoplasm, depending on the many reported cases that confirm frequent and persistent clonal genetic changes (1, 2).

Nodular fasciitis, fibrous histiocytoma, and desmoid or scar tissue are its main histological features (2). IMT is most prevalent in teenagers and younger adults, and the most common location is the pulmonary system (3).

IMT treatment is not very well specified and might be difficult, and surgical diagnosis is usually required (4).

There are few cases of IMT originating from the kidney in the literature (5). In addition, an appropriate diagnosis

IMT can occur anywhere, but it is most common in the abdominal organs, retroperitoneal space, and pulmonary system (1).

The coexistence of IMTs in the kidney, retroperitoneal space, and abdominal area could indicate a simple incidental coexistence or multiple metastases in the absence of any apparent predisposing factors and this relationship requires further investigation, as in our case (1). Similar reports of the coexistence of IMT in the kidney and other abdominal organs were reported by Wang et al. and Boualaoui et al. (1,5).

Conclusion

Renal IMT is an uncommon tumor with unknown malignant potential. Because of the relative scarcity of renal involvement, the heterogeneity of the clinical manifestations, and the nonspecificity of the radiological signs, it is difficult to distinguish it from other types of renal malignancy. The gold standard treatment is still complete radical surgical excision.

Consent

Written informed consent was obtained as per institutional guidelines.

Acknowledgments

The authors would like to thank Shiraz University of Medical Sciences, Shiraz, Iran, the Center for Development of Clinical Research of Nemazee Hospital, and Dr. Nasrin Shokrpour for editorial assistance.

Conflict of interest

The authors declare no potential conflicts of interest with respect to research, authorship, and/or publication of this article.

References

1. Wang Y, Qi X, Xue P, Zhang C, Cai C, Tu C, et al. Inflammatory myofibroblastic tumors in the kidney and abdominal wall mimicking malignancy: A case report. Medicine (Baltimore). 2018;97(34):e11994. http://dx.doi.org/10.1097/md.0000000000011994
2. Sun Z, Wang H, Guo X, Jiang S, Jing C. Inflammatory myofibroblastic tumor of kidney together with ipsilateral perinephric and periureteric fibrosis: A case report and literature review. Medicine (Baltimore). 2017;96(49):e8807. http://dx.doi.org/10.1097/md.0000000000008807
3. Poves I, Alonso S, Jimeno M, Bessa X, Burdío F, Grande L. Retroperitoneal inflammatory pseudotumor presenting as a pancreatic mass. Jop. 2012;13(3):308–11.
4. Firat O, Ozturk S, Akalin T, Coker A. Inflammatory myofibroblastic tumour. Can J Surg. 2009;52(3):E60–1.
5. Boualaoui I, Ziani I, Marrakchi S, Raiss M, Zouidia F, Ibrahimi A, et al. Laparoscopic management of an inflammatory pseudotumor mimicking a locally advanced renal carcinoma: A diagnostic pitfall. Case Rep Urol. 2022;2022:4485930. http://dx.doi.org/10.1155/2022/4485930
6. Gleason BC, Hornick JL. Inflammatory myofibroblastic tumours: Where are we now? J Clin Pathol. 2008;61(4):428–37. http://dx.doi.org/10.1136/jcp.2007.049387
7. Abduljawad H, Aslan A, Aldoseri K, Yilmaz E, Ibrahim W. Rare presentation of inflammatory myofibroblastic tumor in the kidney. Radiol Case Rep. 2020;15(8):1266–70. http://dx.doi.org/10.1016/j.radcr.2020.05.043
8. Lu J, Plank TD, Su F, Shi X, Liu C, Ji Y, et al. The nonsense-mediated RNA decay pathway is disrupted in inflammatory myofibroblastic tumors. J Clin Invest. 2016;126(8):3058–62. http://dx.doi.org/10.1172/jci86508
9. Zhang GH, Guo XY, Liang GZ, Wang Q. Kidney inflammatory myofibroblastic tumor masquerading as metastatic malignancy: A case report and literature review. World J Clin Cases. 2019;7(24):4366–76. http://dx.doi.org/10.12998/wjcc.v7.i24.4366
10. Coffin CM, Humphrey PA, Dehner LP. Extrapulmonary inflammatory myofibroblastic tumor: A clinical and pathological survey. Semin Diagn Pathol. 1998;15(2):85–101.
11. Liang W, Zhou X, Xu S, Lin S. CT manifestations of inflammatory myofibroblastic tumors (inflammatory pseudotumors) of the urinary system. AJR Am J Roentgenol. 2016;206(6):1149–55. http://dx.doi.org/10.2214/ajr.15.14494
12. Li Z, Wang W, Wang Y, Zhai X, Tian Y, Fu Y, et al. Inflammatory myofibroblastic tumor of the kidney with viral hepatitis B and trauma: A case report. Oncol Lett. 2013;6(6):1741–3. http://dx.doi.org/10.3892/ol.2013.1598
13. Bektas S, Okulu E, Kayigil O, Ertoy Baydar D. Inflammatory myofibroblastic tumor of the perirenal soft tissue misdiagnosed as renal cell carcinoma. Pathol Res Pract. 2007;203(6):461–5. http://dx.doi.org/10.1016/j.prp.2007.02.002
14. Li XQ, Hisaoka M, Shi DR, Zhu XZ, Hashimoto H. Expression of anaplastic lymphoma kinase in soft tissue tumors: An immunohistochemical and molecular study of 249 cases. Hum Pathol. 2004;35(6):711–21. http://dx.doi.org/10.1016/j.humpath.2003.12.004
15. Kapusta LR, Weiss MA, Ramsay J, Lopez-Beltran A, Srigley JR. Inflammatory myofibroblastic tumors of the kidney: a clinicopathologic and immunohistochemical study of 12 cases. Am J Surg Pathol. 2003;27(5):658–66. http://dx.doi.org/10.1097/00000478-200305000-00009
16. Bennett JA, Nardi V, Rouzbahman M, Morales-Oyarvide V, Nielsen GP, Oliva E. Inflammatory myofibroblastic tumor of the uterus: A clinicopathological, immunohistochemical, and molecular analysis of 13 cases highlighting their broad morphologic spectrum. Mod Pathol. 2017;30(10):1489–503. http://dx.doi.org/10.1038/modpathol.2017.69
17. Li JY, Yong TY, Coleman M, Astill D, Passaris G, Juneja R, et al. Bilateral renal inflammatory pseudotumour effectively treated with corticosteroid. Clin Exp Nephrol. 2010;14(2):190–8. http://dx.doi.org/10.1007/s10157-009-0242-y
18. Pettinato G, Manivel JC, De Rosa N, Dehner LP. Inflammatory myofibroblastic tumor (plasma cell granuloma). Clinicopathologic study of 20 cases with immunohistochemical and ultrastructural observations. Am J Clin Pathol. 1990;94(5):538–46. http://dx.doi.org/10.1093/ajcp/94.5.538