Clinical Image – Genitourinary Radiology

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Multipl Masses Diagnosed as Oncocytoma in Both Kidneys

Her İki Böbrekte Onkositom Tanılı Multipl Kitleler

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A 67-year-old male patient who had multiple solid masses in both kidneys in another center ultrasound examination was referred to our clinic for further examination. He had no known chronic or syndromic disease. The patient was evaluated with dynamic contrast enhanced upper abdominal magnetic resonance imaging (MRI). In MRI, homogeneous enhancing solid lesions with hypointense central stellate scar and non-enhancing cysts was seen in both kidneys. Diffusion restriction was observed in the periphery of the solid lesion in the lower pole of right kidney which was considered suspicious for malignancy and biopsy was performed from this lesion **(Figure 1)**. Pathology result reported as oncocytoma so follow-up decision was made for the patient. In the follow-up, the masses in the left kidney increased in size and diffusion restriction developed in the upper pole of the left kidney **(Figure 2)**. This lesion was also biopsied because of suspect imaging finding, the result was reported as oncocytoma as well. At the same time, the patient was evaluated for tuberous sclerosis and Birt-Hogg-Dube syndrome as they associated with multiple bilateral oncocytomas. There was no similar signs, semptoms and imaging findings related to these genetic syndromes in the family members of the patient. Informed written consent was obtained from the patient for this report.

Renal oncocytoma is a benign renal tumor and up to three-quarters of patients with a renal oncocytoma are asymptomatic [1]. So its diagnosis is incidental on abdominal imaging. Possible signs and symptoms of a renal oncocytoma include hematuria, flank pain and an abdominal mass [2].

Both oncocytomas and renal tumors show similar enhancement but the central scar and the inversion pattern of enhance-

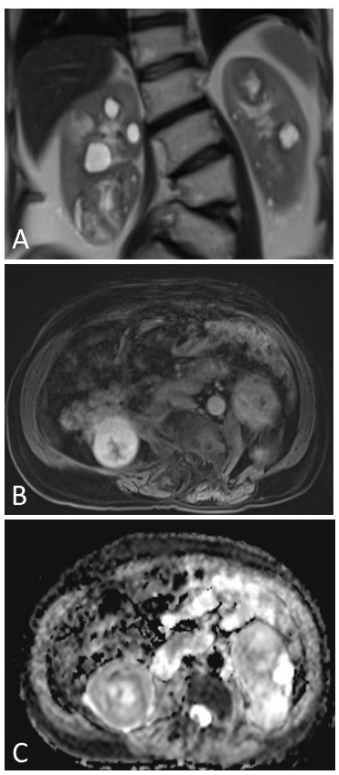

Figure 1. A-Homogeneous enhancing, B-Multipl solid lesions with hypointense central stellate scar and non-enhancing cysts in both kidneys, C- Diffusion restriction was observed in the periphery of the solid lesion in the lower pole of right kidney (Coronal and axial view of enhanced abdominal MRI)

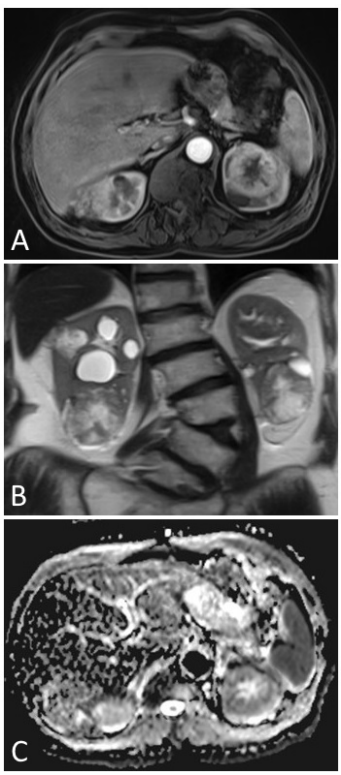

Figure 2. A- Although having homogeneous enhancement with hypointense central stellate scar, B- Solid lesions in the left kidney increased in size, C- Peripheral diffusion restriction developed in the upper pole of the left kidney on follow-up MRI (Coronal and axial view of enhanced abdominal MRI)

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ment have been associated with oncocytomas [3]. The "central stellate scar" sign refers to a central zone of fibrous connective tissue, with the bands of fibrosis radiating toward the periphery of the lesion is a characteristic radiological finding described of renal oncocytoma [4]. Central scar cannot be distinguished on imaging from the necrosis commonly found in renal cell carcinoma [5].

The underlying cause of most isolated renal oncocytomas is unknown; however, multiple oncocytomas can occur in people with certain genetic syndromes such as tuberous sclerosis and Birt-Hogg-Dube syndrome. Isolated oncocytomas usually seen as a single tumor affecting one kidney, on the other hand renal oncocytomas that are part of a genetic syndrome often affects both kidneys with multipl tumors [6,7].

Renal oncocytomas which are part of a genetic syndrome are associated with mutations. Birt-Hogg-Dube syndrome is caused by mutations in FLCN gene while tuberous sclerosisis caused by mutations in the TSC1 or TSC2 genes [8].

It can be hard to distinguish oncocytoma from renal cell carcinoma with only imaging studies. Biopsy is often needed to confirm the diagnosis [9]. Most patients are treated with surgery to confirm the diagnosis since the distinction between oncocytoma and renal cell carcinoma can not be made with imaging methods alone. Whether oncocytoma is strongly considered, partial nephrectomy can be done as a more conservative method [10].

Keywords: central stellate scar, magnetic resonance imaging, oncocytoma, renal mass

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References

[1] Woo S, Cho JY, Kim SH, Kim SY, Lee HJ, Hwang S Il, et al. Segmental enhancement inversion of small renal oncocytoma: Differences in prevalence according to tumor size. Am J Roentgenol 2013;200:1054–9. https://doi.org/10.2214/AJR.12.9300.

[2] Ishigami K, Jones AR, Dahmoush L, Leite L V., Pakalniskis MG, Barloon TJ. Imaging spectrum of renal oncocytomas: a pictorial review with pathologic correlation. Insights Imaging 2015;6:53–64. https://doi.org/10.1007/s13244-014-0373-x.

[3] Wu J, Zhu Q, Zhu W, Chen W, Wang S. Comparative study of CT appearances in renal oncocytoma and chromophobe renal cell carcinoma. Acta Radiol 2016;57:500–6. https://doi.org/10.1177/0284185115585035.

[4] Rosenkrantz AB, Hindman N, Fitzgerald EF, Niver BE, Melamed J, Babb JS. MRI features of renal oncocytoma and chromophobe renal cell carcinoma. Am J Roentgenol 2010;195:W421–427. https://doi.org/10.2214/AJR.10.4718.

[5] Galia M, Albano D, Bruno A, Agrusa A, Romano G, Di Buono G, et al. Imaging features of solid renal masses. Br J Radiol 2017;90:20170077. https://doi.org/10.1259/bjr.20170077.

[6] Kalva SP. Renal Oncocytoma Imaging. Medscape Reference. October 2015. http://emedicine.medscape.com/article/379653-overview.

[7] Atkins MB, Choueiri TK. Epidemiology, pathology, and pathogenesis of renal cell carcinoma. Uptodate n.d.

[8] Birt-Hogg-Dubé syndrome. Genetics Home Reference. January 2013. http://ghr.nlm.nih.gov/condition/birt-hogg-dube-syndrome.

[9] Schieda N, McInnes MDF, Cao L. Diagnostic accuracy of segmental enhancement inversion for diagnosis of renal oncocytoma at biphasic contrast enhanced CT: Systematic review. Eur Radiol 2014;24:1421–9. https://doi.org/10.1007/s00330-014-3147-4.

[10] Benatiya MA, Rais G, Tahri M, Barki A, Sayegh H El, Iken A, et al. Renal oncocytoma: Experience of clinical urology a, urology department, chu ibn sina, rabat, morocco and literature review. Pan Afr Med J 2012;12:84. https://doi.org/10.11604/pamj.2012.12.84.1428.