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Sarcomatoid Transrormation of Chromophobe Renal Cell Carcinoma

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Dear Editor-in-Chief

Chromophobe renal cell carcinoma is rare and represents around 5.9% of all renal cell carcinoma. It can have a wide range of age at the time of presentation but usually occurs between second to fourth decades of life (1). Grossly, chromophoberenal cell carcinoma is usually well circumscribed and solid with yellowish brown color (2). Microscopically, the tumor is characterized by large plant like cells with well-defined cell membranes and transparent or small cells with an eosinophilic cytoplasm and perinuclear clearing (3). This type of renal cell carcinoma is well known for its rather good prognosis.

We hereby present a case of chromophobe renal cell carcinoma with an aggressive course due to sarcomatoid transformation.

The patient was a 41-year-old man from Kerman Province with a 6-month history of flank pain radiating to the back and a recent complaint of bone pain especially in axial skeleton since the last month of 2014. He had no hematuria or other urinary symptoms. All laboratory tests were normal except a mild anemia. Abdominal computed tomograghy scan revealed a large heterogeneous mass with calcification from anteroinferior portion of left kidney and a lytic lesion second lumbar vertebra with its fracture(Fig. 1). Subsequently,whole bodybone scan was fulfilled and exhibited focal areas of increased activity in skeleton(posterior skull, T9, L1 to L3, right iliac wing, anterior border of left iliac wing, left greater trochanter, left femoral neck 9th left and 2nd right ribs) suggestive for multiple osseous metastasis (Fig. 2). Then he underwent left radical nephrectomy. Grossly, it was an irregular large mass with a beige color measuring 17 cm in greatest diameter. There was focal necrosis, calcification and fish flesh like areas in cut section leading to a variegated appearance. Microscopically, a biphasic malignant neoplasm was observed composed of chromophobe renal cell carcinoma and a malignant fibrous histiocytoma-like component (Fig. 3-4). The stroma of sarcomatous portion was focally hyalinized with calcification.

Sarcomatoid transformation usually occurs in 5% of all renal cell carcinomas and results from either dedifferentiation of epithelial components or the coincidental development of two synchronous tumors (3, 4).This ominous transformation is more prevalent in chromophobe renal cell carcinoma and reaches 8% (3). Sarcomatoid components are mostly homologous and malignant fibrous histiocytoma-like or fibrosarcoma-like in nature. However, sarcomatoid transformation with heterologous elements including osteosarcomatoid, chondrosarcomatoid, rhabdomysarcomatoid dedifferentiation or ossous metaplasia has also been rarely reported in literature (1, 3).In contrary to better prognosis of chromophobe renal cell carcinoma compared to the conventional type, sarcomatoid transformation leads to a worse

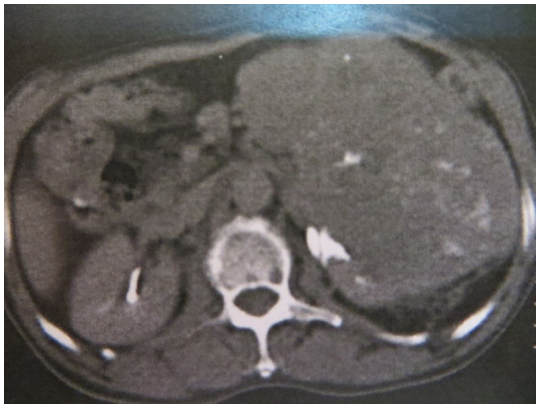

Fig. 1
Abdominal CT scan showed a large retroperitoneal heterogeneous mass with focal calcification. Positive beak sign was noted suggesting the left kidney as the origin of the tumor

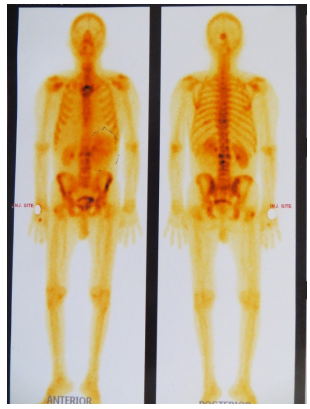

Fig. 2
Whole body bone scan(Three hours following intravenous injection of 20 mCi99mTc-MDP) depicted multiple areas of increased bony activity which was in favor of osseous metastasis

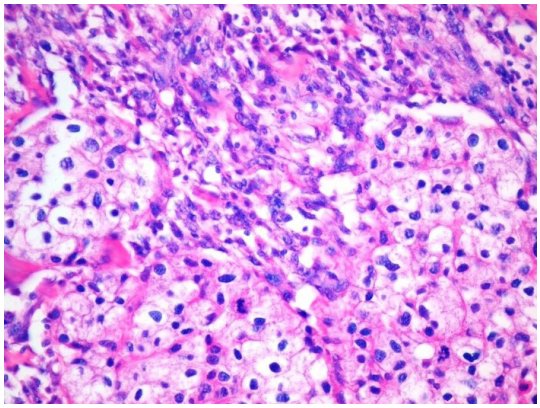

Fig. 3
Histologic sections revealed chromophobe renal cell carcinoma with transition to a malignant fibrous histiocytoma-like component(Hematoxylin and Eosin x400)

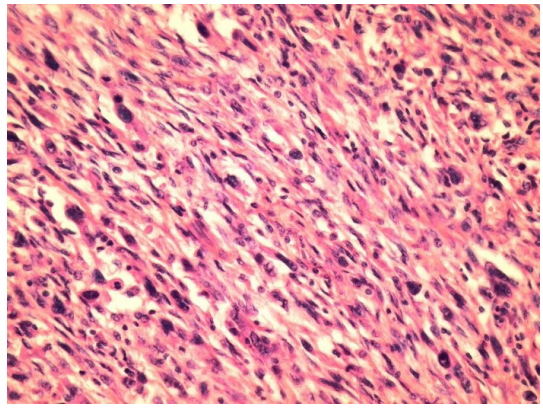

Fig. 4
Malignant fibrous histiocytomalike component was composed of spindle cells with bizarre and hyperchromatic nuclei (Hematoxylin and Eosin x400)

prognosis and reduces 10-yearcancer specific survival rate from 90% to 27% (5-6). The patients with sarcomatoidchromophobe renal cell carcinoma are usually older than those with ordinary chromophobe renal cell carcinoma are and often present with metastatic disease (1).

Conclusively, the presence of sarcomatoid components in this subtype of renal cell carcinoma has a prognostic importance and leads to the change of its clinical behavior from a rather indolent malignancy to an aggressive one.

Acknowledgements

The authors declare that there is no conflict of interests.

References

1. Quiroga-Garza G, Khurana H, Shen S, Ayala AG, Ro JY. Sarcomatoid chromophobe renal cell carcinoma with heterologous sarcomatoid elements. A case report and review of the literature. Arch Pathol Lab Med 2009;133(11):1857-60.

2. Zhang Z, Min J, Yu D, Shi H, Xie D. Renal collision tumour of papillary cell carcinoma and chromophobe cell carcinoma with sarcomatoid transformation: A case report and review of the literature. Canadian Urol Ass J 2014;8(7-8):E536.

3. Tanaka Y, Koie T, Hatakeyama S, Hashimoto Y, Ohyama C. Chromophobe renal cell carcinoma with concomitant sarcomatoid transformation and osseous metaplasia: a case report. BMC Urol 2013;13(1):72.

4. Parada D, Peña K, Moreira O. Sarcomatoid chromophobe renal cell carcinoma. A case report and review of the literature. Archivos Españoles De Urología. 2006;59(2):209-14.

5. Volpe A, Novara G, Antonelli A, Bertini R, Billia M, Carmignani G, Ficarra V. Chromophobe renal cell carcinoma (RCC): oncological outcomes and prognostic factors in a large multicentre series. BJU International. 2012;110(1), 76-83.

6. de Peralta-Venturina, M, Moch H, Amin M, Tamboli P, Hailemariam S, Mihatsch M, Amin M. BSarcomatoid differentiation in renal cell carcinoma: a study of 101 cases. Am J Surg Pathol 2001; 25(3), 275-84.

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