Case Report

Conventional renal cell carcinoma with granulomatous reaction: A rare entity

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ABSTRACT

Granulomas may develop in a number of immunologically mediated infectious and noninfectious conditions. Granulomas may also occur within the malignancies like carcinomas of the breast, colon, and Hodgkin's lymphoma. Granulomatous reaction in association with renal cell carcinoma (RCC) is uncommon, with only fewer published reports in the literature. We reported a case of a conventional (clear cell) RCC associated with epithelioid granulomas within the tumor parenchyma.

Key words: Conventional renal cell carcinoma, granulomas, tuberculosis,

INTRODUCTION

Granuloma is characterized by accumulation of activated macrophages that often develop an epithelioid appearance. Granulomas may develop in a number of immunologically mediated infectious and noninfectious conditions.[1] Granulomas may be associated with malignancies like carcinomas of the breast, colon and Hodgkin's lymphoma.[2,3]

Granulomatous reaction in association with renal cell carcinoma (RCC) is uncommon, with only fewer published reports in the literature.[4-6] Also, in regions, where there is a high incidence of tuberculosis, it is important to differentiate tumor-related granulomatous reactions from tuberculosis for the purpose of treatment.

CASE REPORT

A 52-year-old man who presented with hematuria of 3 months duration presented for the study. Computerized tomography scan revealed 2 cm × 2 cm heterogeneously enhancing mass in the mid pole of the left kidney. Subsequently partial nephrectomy was done. Grossly we received a part of the kidney measuring 4 cm × 4 cm × 3 cm. The capsule over the mass was stretched, and there was no breach in the capsule. The cut section showed well encapsulated tumor nodule of 2 cm × 2 cm having variegated appearance with yellow areas, hemorrhagic foci, and few tiny cystic areas [Figure 1].

The microscopic section from the tumor showed nests and tubules of tumor cells supported on fine vascular stroma. The most conspicuous feature noted was the presence of multiple foci of non caseating granulomas with Langhans type of giant cells in the tumor parenchyma and periphery of the tumor [Figures 2 and 3]. The tumor cells showed clear cytoplasm with nuclear features corresponding to Fuhrman grade 2. Histopathological diagnosis was conventional RCC with granulomatous reaction. There were no asteroid/Schaumann bodies and no evidence of fungi or mycobacteria within the granulomas/within the tumor. Tuberculosis was excluded by a thorough clinical check-up and relevant investigations.

DISCUSSION

The occurrence of non caseating granulomas in lymph nodes is a well-documented phenomenon with cervical and breast carcinomas.[7] But this phenomenon is very rare in the case of RCC. The location of granulomas is

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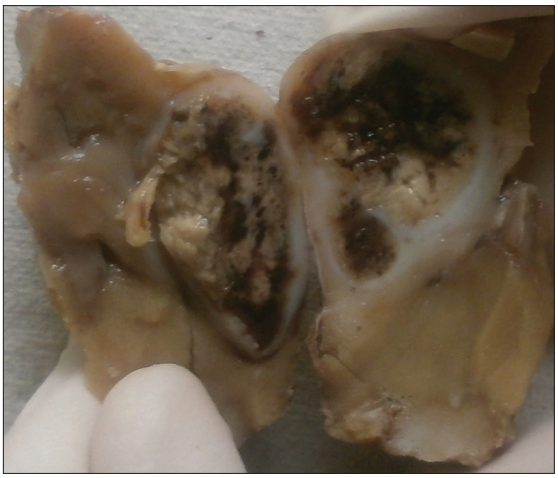

Figure 1: Partial nephrectomy with well encapsulated tumor with yellow, tan-brown and cystic areas

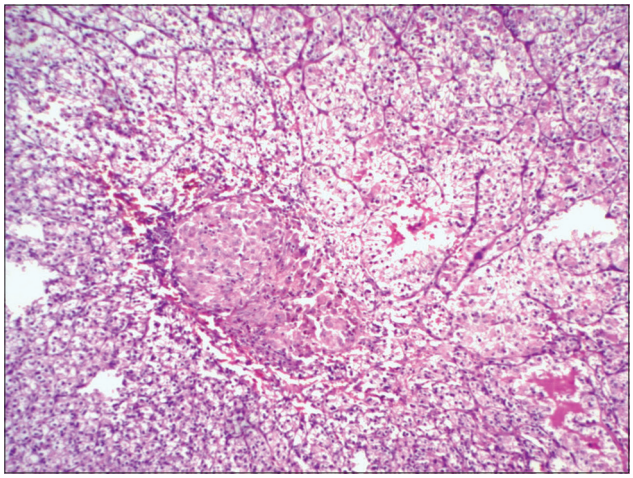

Figure 2: Non caseating granulomas with Langhans type of giant cells in the parenchyma of conventional renal cell carcinoma (H and E, ×100)

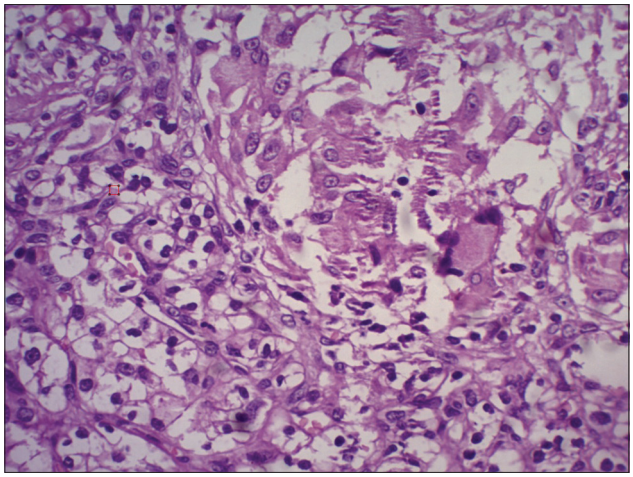

Figure 3: Part of granuloma with Langhans type of giant cell and adjacent tumor component (H and E, ×400)

variable. It can be within the tumor parenchyma, tumor stroma or periphery of the tumor.[4-6] In our case, the granulomas were both within the tumor parenchyma and at the periphery.

Granulomas that are associated with tumor, represent an immune response of the tumor stroma to antigens expressed by the tumor.[5,6] The possibilities to be considered in any tumor associated with granulomatous reaction are: (a) The granulomas are a reaction to tumor-related antigens and (b) there is co-existence of chronic granulomatous process like tuberculosis/sarcoidosis and tumor.

CONCLUSION

Based on the morphological features of granulomas, it is not possible to entirely exclude concomitant tuberculosis, especially in a country like India where there is a high incidence of tuberculosis. However, the lack of granulomas in the adjoining parenchyma along with the absence of supportive evidence of clinical and radiological features favor the tumor related granulomatous reaction. From a therapeutic point of view, it is difficult but important to distinguish between these two conditions.

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