Case Report

Sarcomatoid Renal Cell Carcinoma

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Abstract: Sarcomatoid renal cell carcinoma (SRCC) is an aggressive variant of renal cell carcinoma. It is thought to originate predominantly from clear cell carcinoma through de-differentiation. It is a rare entity constituting about 1-5% of all renal malignant neoplasms and is more commonly associated with conventional (clear cell) renal cell carcinomas. We report a case of a 50 years old male who presented with complaints of haematuria and abdominal pain. The biopsy confirmed sarcomatoid variant of renal cell carcinoma.

Key words: Sarcomatoid carcinoma, Renal cell carcinoma

Introduction

Sarcomatoid renal cell carcinoma (SRCC) is currently defined in the 2004 World Health Organization (WHO) classification of renal tumors as any histologic type of renal cell carcinoma (RCC) containing foci of high-grade malignant spindle cells. Most patients are symptomatic at diagnosis; abdominal pain and haematuria are commonly observed. Sarcomatoid tumors are characterized by a relatively high incidence of metastases to the lung and bone at presentation. Positive immunohistochemical markers in these tumors include AE1/AE3, epithelial membrane antigen, and vimentin, which supports epithelial origin. Sarcomatoid carcinomas signify a poor prognosis. The prognostic implication of the proportion of sarcomatoid component within an RCC tumor is an area of controversy. A higher proportion of sarcomatoid differentiation has been associated with worse survival in some series.

Case Report

A fifty year old male presented with the history of abdominal pain and haematuria. The ultrasound and CT scan showed a renal mass. Laparotomy was performed and the nephrectomy specimen was sent for histopathology.

GROSS EXAMINATION: The whole kidney was replaced by a necrotic mass measuring 19x18x10cm. Renal parenchyma was identified at the periphery measuring 5cm. Tumor was invading peri-nephric fat and Gerota’s fascia.

MICROSCOPIC EXAMINATION: It was a malignant neoplasm composed primarily of spindly cells with cartilage and bone formation. (Fig 1) The cells were pleomorphic and few giant cells were also seen. The Fuhrman Nuclear grade was G4. The renal vein, ureteral margin and Gerota’s fascia were involved. Lymphovascular invasion was also seen. One of the sections revealed conventional renal cell carcinoma. (Fig 2 & 3)

Discussion

On microscopic examination, two main histologic types of sarcomatoid component have been described. A fibrosarcoma like appearance, which is reported in 14-65% of cases. Alternately, 27-85% of cases resemble malignant fibrous histiocytoma characterized by a greater degree of nuclear pleomorphism and occasional multinucleated osteoclast like giant cells. Some tumors (3-24%) have no distinct pattern and a hemangiopericytoma like pattern has been described in rare cases. In our case it had a malignant fibrosarcoma like appearance. (Fig 3)

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Fig 1: Cartilage and bone formation (H&Ex100)
Little information is available on genetic alterations in sarcomatoid renal cell carcinoma (SRCC). Mutations of the p53 tumor suppressor gene are reported to be more prevalent in sarcomatoid components (79%) compared with clear cell components (14%) of sarcomatoid renal cell carcinoma (SRCC) arising from clear cell renal cell carcinoma (CCRCC). Ultrastructural findings show frequent desmosomal junctions, confirming the epithelial nature of the neoplasm.  

References