Valley International Journals
Open Access Journal
International Journal Of Medical Science And Clinical Inventions
Volume 2 issue 06 2015 page no. 1035-1037 ISSN: 2348-991X
Available Online At: http://valleyinternational.net/index.php/our-jou/ijmsci

Carcinasarcoma Of Kidney- A Case Report

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Abstract:
Carcinosarcoma is a type of renal cell carcinoma which exhibits areas of sarcomatous differentiation. It is a rare change seen in renal cell carcinoma and carries very poor prognosis. Carcinosarcoma mostly seen in older age group having an incidence of 1%. Sarcomatoid differentiation in renal cell carcinoma is composed of spindle shaped cells with marked nuclear pleomorphisim. Due to poor survival rate and in the view of high grade of tumour it is very important to diagnose sarcoma component in renal cell carcinoma. Histologically adequate sampling of tissue along with the immunohistochemical studies are required for accurate diagnosis.

Key words:Carcinosarcoma, Immunohistochemistry, Renal cell carcinoma, Sarcomatoid change,

Introduction:
Carcinosarcoma of kidney is also called as Sarcomatoid renal cell carcinoma / Carcinosarcoma / Spindled carcinoma due to sarcomatoid / spindle cell differentiation. The 2004 WHO classification of renal tumors recognizes this transformation as sarcomatoid change or sarcomatoid features arising within RCC, rather than as a separate histologic entity.[1,2,3] Sarcomatoid differentiation usually arises within high-grade RCC,[3,4] representing a late step in the progression of this tumor type; however, the factors leading to development of sarcomatoid differentiation are unknown.

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Case report:
A 69 year old female presented with complaints of hematuria, flank pain and abdominal discomfort since five months. Clinical evaluation revealed a firm mass occupying the right side lumbar region. Ultrasonography showed mass in the right kidney and radiologically diagmosed as renal cell carcinoma. Routine laboratory tests were done and on exploratory laprotomy a huge renal tumor was found, for which nephrectomy was done.
Macroscopically nephrectomy specimen measuring 18x9x8cms. Cut section shows a circumscribed gray white mass measuring 6x5cms at upper end of kidney, with areas of necrosis.

Microscopy shows round to polygonal cells with clear cytoplasm & round to oval nuclei. Cells are exhibiting prominent nucleoli. Areas of necrosis are seen. Focal areas showing **s**pindle shaped cells arranged in whirling & bundle pattern. Immunohistochemistry and tumour cells are positive with cytokeratin and vimentin.

Discussion:
Carcinosarcoma/Sarcomatoid renal cell carcinoma 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[2]. Many studies have defined a tumor as carcino sarcoma if even a small amount of sarcomatoid differentiation is present [5,6,7,8, 5] whereas other studies have excluded tumors with a sarcomatoid component of less than 20% of the tumor volume [6] or less than one microscopic low-power (40x) field in size.[7] The epithelial component is composed of cells with clear to granular cytoplasm. The sarcomatoid component is composed of spindle shaped cells with marked nuclear pleomorphisim. Immunohistochemistry shows tumour cells are positive with cytokeratin, vimentin and c-kitt [1,6].

The epithelial component may originate from any of the well-described RCC histologic types, because of the high incidence of clear cell RCC, this histology is associated with >80% of carcinosarcomas[3]. The diagnostic morphological feature is the intermingling of typical renal cell carcinoma with a component of sarcomatoid features and also a spindle cell component at least in one low power field [4]. Most common patterns are fibrosarcoma and malignant fibrous histiocytoma. Sometimes they are composed of strap like cells, giant cells and multinucleated giant cells intermixed with spindle cells and they mimic a rhabdomyosarcoma. Less frequently they look like liposarcomas or leiomyosarcomas. However the type of pattern does not affect the prognosis. Additional high-risk tumor characteristics such as necrosis (90%) and micro vascular invasion (30%) are present [4]. Several studies have looked at the effect of sarcomatoid transformation on prognosis and demonstrated that greater amounts were associated with a worse outcome [3] because majority of the patients have disseminated tumour (Stage IV) at the initial presentation and the median survival of all the patients is 6 months[6]. This may also be related to tumor grade since sarcomatoid renal cell carcinoma by definition belongs to grade IV category [9,10,11] . In addition to surgery, adjuvant radiotherapy and chemothempy is required in preventing its dismal prognosis.

Conclusion:

Renal cell carcinoma of any type exhibiting at least focal sarcomatoid / spindle cell differentiation is called as carcinosarcoma. It is a rare change in renal cell carcinoma, mostly seen in older age group having a poor prognosis. It has to be diagnosed accurately with the help of morphology and immunohistochemistry to assess the prognosis and in the view of treatment aspect.

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Figure legends:

Figure 1: Gross picture showing dark brown to gray white lesion.

Figure 2: The cells are round to polygonal with clear cytoplasm and round nucleus. Some of the nuclei are hyper chromatic with chromatin changes (H and E, ×400).

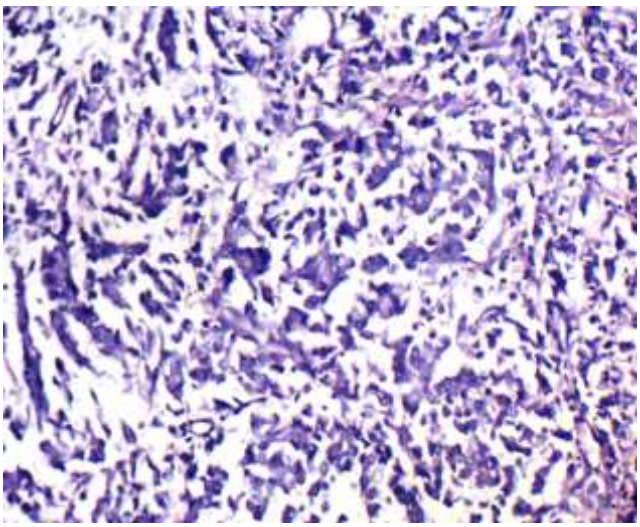

Figure 3: Pleomorphic spindle cells separated by delicate fibrous septae (H and E, ×200).

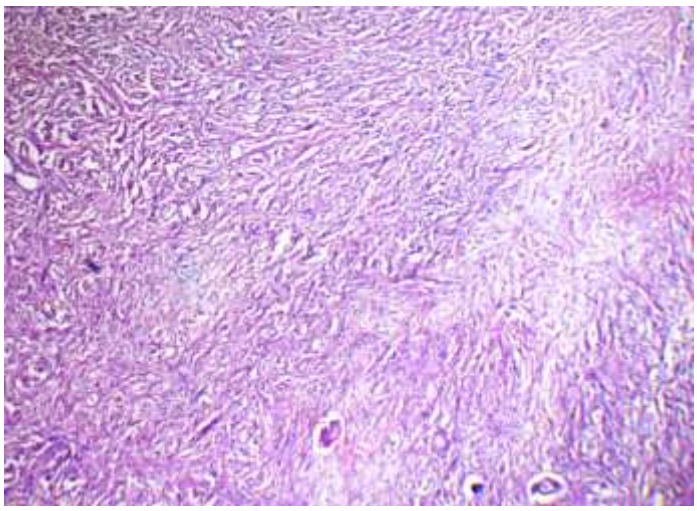

Figure 4:Tumour cells showing cytokeratin positive

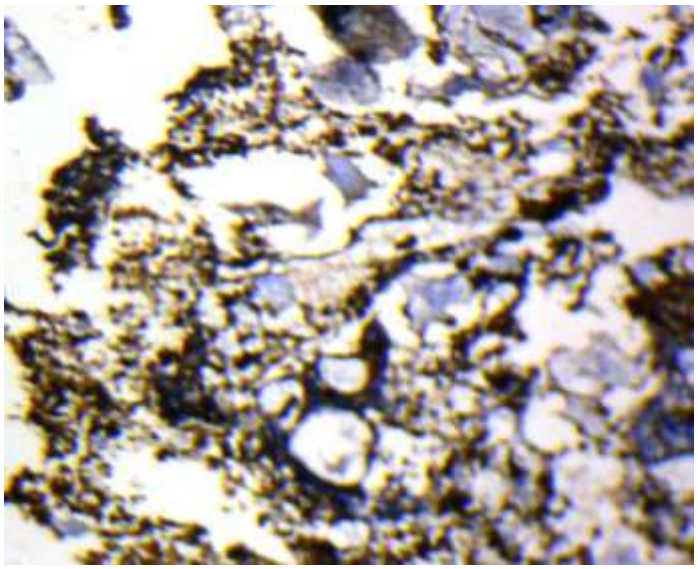

Figure 5:Tumour cells which are vimentin positive