



CLINICOPATHOLOGICAL PROFILE OF RENAL TUMOURS IN EASTERN INDIA: A STUDY FROM TERTIARY CARE ARMED FORCES HOSPITAL

Surgery

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ABSTRACT

A primary renal tumor comprises a wide spectrum of neoplastic lesions of the kidney with patterns, which are relatively distinct among children and adults. Primary renal tumors may be benign or malignant. A wide variety of both benign and malignant renal tumors may arise from the different components of the renal parenchyma, mostly from the tubular epithelium (1,2). With the widespread use of cross sectional imaging modalities the incidence of renal tumors has been increased throughout the world during the last few decades. Until now, the gold standard treatment for most of the renal tumors is their surgical removal, either by radical nephrectomy or partial nephrectomy (3).

Incidence of renal cell carcinoma (RCC) is 2-3% of all malignancy. Seventh most common tumor in western world. Country to country the incidence varies and most common in the western part of the world. Incidence of RCC is less in Asian country, particularly in India (4,5). The profile of these patients has not been studied enough in our country as yet and the data regarding RCC in India is scarce. The data available in our country either retrospective or inadequately collected. This study will help to understand characteristics of renal tumor in this geographical area and can be used as source for future reference. The study was conducted among 38 patients of renal mass from the eastern India. In the absence of robust Indian data on Renal tumours, this study provides baseline information on epidemiology, stage at presentation, and outcomes of RCC at Indian population compared with the Western population. Though symptomatic tumour still more common in India, asymptomatic tumour detection rate has been increased due to more health care facility and available imaging modalities.

KEYWORDS

Renal tumour, Renal carcinoma, Renal mass, abdominal lump, military

MATERIALS AND METHODS

Study Design: This is a prospective non randomized study.

Place of study: This study was conducted at surgery department of Command Hospital (EC) Kolkata A tertiary care referral Armed forces hospital in eastern India.

Study population: All patients with symptomatic renal mass/ incidentally detected renal mass at this hospital during a period of 2 yrs from jul 2016-jul 2018.

Statistical Methods: Categorical variables are expressed as Number of patients and percentage of patients and compared across the groups using Pearson's Chi Square test for Independence of Attributes/ Fisher's Exact Test as appropriate.

Continuous variables are expressed as Mean, Median and Standard Deviation and compared overtime using Wilcoxon Sign Rank Test. The statistical software SPSS version 20 has been used for the analysis. An alpha level of 5% has been taken, i.e. if any p value is less than 0.05 it has been considered as significant.

Study Design

All patients having symptomatic renal mass/ incidentally detected renal mass (6,7,8)

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Initial workup: History & clinical evaluation

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Investigation as required: Hb, urea, creatinine, USG abdomen, CT chest, abdomen, pelvis, Bone scan, WB PET CT (9,10)

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Diagnosis and stage of the disease (11)

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Radical nephrectomy/ Partial nephrectomy according to the clinical stage of tumor, Biopsy for unresectable tumor mass (12,13)

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Per op findings & post op complications

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HPE report analysis (14,15,16)

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Comparison & analysis of clinical features, age, gender distribution with final HPE outcome for significant data, comparison of clinical stage with pathological stage of the disease for significant outcome (17)

RESULTS

- 38 patients with renal mass were evaluated and managed by this centre. Mean age of the patients was 53.11 yrs, youngest being 31 yrs and eldest being 75 yrs. There were 27 male patients and 11 female patients. Male and female ratio 2.5:1. Peak age of incidence is 40-60 yrs.
- 24 patients were symptomatic and 14 were asymptomatic. Most common presenting feature is pain in the flank (52.6%, n: 20) followed by incidentally detected (n: 14) and hematuria with mixed symptoms. Triad of RCC noted in one patient. Most renal masses involved in the left kidney (n: 21) and most common location is lower pole of kidney (n:17).
- 11 patient had hypertension, 10 were smoker & 1 patient had both. One patient was obese among the hypertensive. Overall 52.6% (n:20) had one or more risk factors.
- Stage I disease -47.4% (n = 18), stage II - 5.3% (n = 2), Stage III - 26.3% (n = 10) and Stage IV - 21% (n = 8). 2 patients had infra diaphragmatic IVC thrombus, 5 patients had locally advanced including vascular invasion, 1 patient had distant metastasis in the form supra umbilical nodule with peritoneal metastasis. These 8 cases were referred to medical oncologist in our centre after biopsy.
- After undergoing initial work up, underwent radical nephrectomy-26, partial nephrectomy -3, and cytoreductive nephrectomy-1. Overall, RCC was the most common malignant renal tumor. Among them Clear cell RCC found to be the most common followed by the papillary RCC. Clear cell RCC -71.1% (n = 27), papillary RCC-18.4% (n = 7), chromophobe RCC 5.3% (n = 2), Urothelial carcinoma- 2.6% (n = 1), metanephric adenoma -2.6% (n = 1).
- Clear cell RCC was noted in all age groups including young adults. However Papillary, Chromophobe RCC, Urothelial carcinoma, and Metanephric adenoma are present in above 40 yrs of age only. Overall most common age presentation is in the range of 40- 70 yrs. Clear cell RCC most commonly observed in males. But papillary and chromophobe RCC have equal distribution in both gender.
- 84.2% of patients with RCC presented early. They were either asymptomatic or less than 6 months duration. However Urothelial carcinoma presented late.
- 37% of the clear cell RCC were asymptomatic. 22.2% of the clear cell RCC had hematuria, however urothelial & chromophobe RCC were presented with hematuria.
- 14 patients underwent lymph node dissection based on preoperative imaging and intraoperative suspicion but only 3 of them showed lymphnode involvement on histopathology. Hence 9

- patients who were stage III disease down staged to early stage.
- Finally Stage I disease was most common in both clinical and pathological staging analysis. Clear cell RCC mostly presented in early stage (stage I- n:15), Papillary RCC mostly presented in late stage (stage IV- n:5), Chromophobe RCC noted in both early and late stages. Fuhrman grade 3 was the overall commonest grade and in both Clear cell RCC and Papillary RCC.
 - Mean urea in pre & post op was 29.72 & 32.08 mg/dl and mean creatinine in pre & post op was 0.98 & 1.15 mg/dl. Urea and creatinine levels increased in post nephrectomy patients with single kidney.

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