International Surgery Journal
*Hajgude V et al. Int Surg J. 2016 Feb;3(1):314-317*
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20160250

**Research Article**

# A clinical study of patients with renal cell carcinoma

**Varsha Hajgude[1]*, Rohan Umalkar[2]**

[1]Professor, Department of General Surgery, Maheshwara Medical College, Hyderabad, Telangana, India
[2]Assistant Professor, Department of General Surgery, Malla Reddy Medical College for Women, Hyderabad, Telangana, India

**Received:** 02 January2016
**Accepted:** 08 January2016

***Correspondence:**
Dr. Varsha Hajgude,
E-mail: varshahajgude@gmail.com



## ABSTRACT

**Background:** In 1894 Lubarch endorsed the idea of these being a suprarenal original tumour, and the term "hypernephroid tumors" indicating origin above the kidney was advocated by Birch-Hirschfeld. It was this semantic and conceptual mistake that led to the introduction of the term "hypernephroma", which predominates in the literature describing parenchymal tumours of the primary renal origin. The objective was to study the surgical profile, treatment modalities for patients with renal cell carcinoma.
**Methods:** Present study was retrospective as well as prospective study and was carried out in the Department of Surgery, Government Medical College and Hospital; Auragnabad for a period of one year Retrospective study was done from the record in Radiotherapy Department of this college. Prospective study was done with the number of cases of kidney tumors admitted during the study period. Total number of cases studied were 44, out of these, 26 was studied retrospectively and 18 cases prospectively. Patients who were absconded after admission are also included.
**Results:** The youngest patient of renal cell carcinoma was found to be of 35 years, and oldest of 70 years old. The maximum incidence was found in 5th and 6th decade of life. In this treatise, maximum numbers of cases were presented with lump in abdomen (78.27%), and classic triad of pain, lump and hematuria was only in 4 cases (17.40%). Maximum numbers of patients were in stage III and IV. Anemia was found only in 6 cases (26.10%) and raised E.S.R. in 2 cases (08.70%). Not a single patient showed hypercalcemia or erythrocytosis. Most commony used treatment modality in our patients was Nephrectomy + RT + CT + HT in 9 cases (39.13%).
**Conclusions:** Commonest etiological factor for renal cell carcinoma is smoking (30.50% of the cases). Maximum cases of renal cell carcinoma were presented with lump in abdomen and classic triad was found in only 17.4% of cases (i.e. pain, hematuria and lump). Maximum cases of renal cell carcinoma were found to be in stage III and IV. Majority of the renal cell carcinomas were treated with nephrectomy, postoperative radiotherapy, chemotherapy and hormonal therapy in combination.

**Keywords:** Renal cell carcinoma, Clinical features, Treatment modalities

## INTRODUCTION

Malignant renal tumours were described as early as 1826 when Knoig reported 2 patients with modullary sarcoma of the kidney.[1]

In 1855, Robin had concluded that renal carcinoma arose from renal tubular epithelium. This interpretation was confirmed by Waldeyer in 1867.[2]

Harris in 1982 reported on 100 surgical extripations of the kidney, a sufficient number to permit some sort of analysis of clinical, surgical and pathologic features of renal disorders that require surgery.[2]

Unfortunately, theoretical and practical considerations of renal tumors were confused by Gravitz, who contended that such apparent renal tumour arose from adrenal rests within the kidney. He introduced the terminology "Struma lipomatodes aberrata renis" as descriptive nomenclature for the tumours of clear cells that he believed were derived from the adrenal gland.

In 1894 Lubarch endorsed the idea of these being a suprarenal original tumour, and the term "hypernephroid tumors" indicating origin above the kidney was advocated by Birch-Hirschfeld. It was this semantic and conceptual mistake that led to the introduction of the term "hypernephroma", which predominates in the literature describing parenchymal tumors of the primary renal origin.

Some classification of the histopathology of renal tumors is derived from the work of Albanan and Imbert and the four volume contribution of Walf written between 1883 to 1928, adds further historical significance to our understanding of renal tumours today.[2]

The first planned nephrectomy for renal tumors was performed by Gustav Simon, the operation has undergone several modifications concerning the approach as well as the extent. Recently, radical nephrectomy which includes the dissection and early ligation of renal vein and artery, in addition to lymphadenectomy if necessary has been gaining ground (Robson).[1]

## METHODS

Present study was retrospective as well as prospective study and was carried out in the Department of Surgery, Government Medical College and Hospital, Auragnabad for a period of one year Retrospective study was done from the record in Radiotherapy Department of this college. Prospective study was done with the number of cases of kidney tumors admitted during the study period. Total number of cases studied were 44, out of these, 26 was studied retrospectively and 18 cases prospectively. Patients who were absconded after admission are also included.

Confirmation of Diagnosis was made with intravenous pyelography in most of the cases, whereas retrograde pyelography in most of the cases, whereas retrograde pyelography and ultrasonography were done in few patients and properly recorded in the proforma.

## RESULTS

The youngest patient of renal cell carcinoma was found to be of 35 years, and oldest of 70 years old. The maximum incidence was found in 5th and 6th decade of life.

**Table 1: Age incidence of renal cell carcinoma.**

| Age group (yrs) | No. of Patients | Percentage (%) |
|---|---|---|
| 20-30 | - | - |
| 31-40 | 5 | 21.73 |
| 41-50 | 6 | 26-10 |
| 51-60 | 9 | 36.13 |
| 61-70 | 3 | 13.04 |
| Total | 23 | 100.00 |

**Table 2: Clinical features of renal cell carcinoma (no. of patients 23).**

| Clinical Features | No. of patients | Percentage (%) |
|---|---|---|
| Classic triad (pain, lump, Hematural) | 4 | 17.40 |
| Pain in abdomen | 11 | 47.80 |
| Lump in abdomen | 18 | 78.27 |
| Hematuria | 6 | 26.10 |
| Weight loss | 9 | 39.13 |
| Fever | 3 | 13.04 |
| Hypertension | 2 | 8.70 |
| Anemia | 6 | 26.10 |
| Varicocele | 1 | 4.34 |
| E/o Distant metastases | 8 | 34.80 |

In this treatise, maximum number of cases was presented with lump in abdomen (78.27%), and classic triad of pain, lump and hematuria was only in 4 cases (17.40%).

**Table 3: Staging in renal cell carcinoma.**

| Stages | No. of Patients | Percentage (%) |
|---|---|---|
| I | 6 | 26.1 |
| II | 1 | 04.34 |
| III | 8 | 34.78 |
| IV | 8 | 34.78 |
| Total | 23 | 100.00 |

Maximum number of patients was in stage III and IV.

Staging of renal cell carcinoma was done according to Robsons staging proposed by Holland.

**Table 4: Laboratory findings in renal cell carcinoma.**

| Laboratory findings | No. of patients | Percentage (%) |
|---|---|---|
| Hb <8 gms % | 6 | 26.10 |
| E.S.R. | 2 | 8.70 |
| Hypercalcemia | - | - |
| Erythrocytosis | - | - |

Anemia was found only in 6 cases (26.10%) and raised E.S.R. in 2 cases (08.70%). Not a single patient showed hypercalcemia or erythrocytosis.

**Table 5: Treatment modalities for renal cell carcinoma (no. of patients 23).**

| Treatment Modality | No. of patients | Percentage (%) |
|---|---|---|
| Nephrectomy+RT=CT=HT | 9 | 39.13 |
| Nephrectomy+CT=HT | 2 | 08.69 |
| Nephrectomy+RT | 4 | 17.40 |
| Biopsy+RT+CT+HT | 4 | 17.40 |
| Biopsy+RT | 1 | 04.34 |
| No treatment | 3 | 13.04 |
| Total | 23 | 100.00 |

RT: Radiotherapy, CT: Chemotherapy, HT: Harmonal therapy

We have used following treatment modalities:

1. Nephrectomy + Radiotherapy + Chemotherapy + Harmonal therapy
2. Nephrectomy + Chemotherapy + Harmonal therapy.
3. Nephrectomy + Radiotherapy.
4. Biopsy + Radiotherapy + Chemotherapy + Harmonal therapy
5. Biopsy + Radiotherapy

Most commony used treatment modality in our patients was Nephrectomy + RT + CT + HT in 9 cases (39.13%).

Chemotherapeuticagent used in our patient was inj. Vinblastine in the dose of 0.2 mg/kg, 2 weekly for 6 doses. Harmonal therapy was given which injection medroxyprogesteron 1000 mg once a week for 3 months.

Local radiotherapy was given in the dose of 4000 rade to 5000 rads in 10-15 fractions.

In 3 patients no any treatment was given because they are expired or absconded before any intervention.

## DISCUSSION

In our study maximum cases were of renal cell carcinoma i.e. 23 (52.28%). In the series of Bennington (1973),[3] renal cell carcinoma was found in 75% of cases. In the series of Rafla S[1] incidence of renal cell carcinoma was 63.70%. Mellinger T, Blackard CE[4] found adenocarcinoma in 83.4% of cases of renal cell carcinoma in 70-80% of renal tumours.

Even though our study is of only 44 patients of renal tumours, still the number of renal cell carcinoma are maximum.

Maximum number of cases of renal cell carcinoma in our study was found to be in 5$^{th}$ and 6$^{th}$ decade of life (65.23%). Rafla S[1] found maximum incidence in 6$^{th}$, 7$^{th}$, 8$^{th}$ decade of life (88%).

Incidence of renal cell carcinoma in male was found to be more than female with male:female ratio of 2:1, in the number of series. de-kernion JB[5] , Rafla S[1] and Boxer R et al[6] found male:female ratio to be 2.2:1. We found male:female ratio 1.3:1, thus approximately equal incidence compared with afore mentioned series.

Our observation is that the renal cell carcinoma involves the left kidney more than that of right kidney 60.703 and 39.30% respectively. Other series also noted equal incidence on both side. It shows that there is no specific side predilection for renal tumour.

Bilateral involvement by renal cell carcinoma is rare entity. Out of 23 cases of renal cell carcinoma, we had not a single case of bilateral involvement.

Kantor[2] noted the high incidence of renal cell carcinoma in men who smoke pipe or cigars. Bennington and Labscher found that risk of developing renal cell carcinoma was found to be over 5 times higher in men who used any form of tobacco than those who did not use tobacco.[3] They also observed that the risk is higher amongst those who are smoking pipes and/or cigars. Lemerly[8] found high incidence of renal cell carcinoma in inflammatory conditions of kidney, where crystalline ester cholesterol got deposited and stimulated the development of cortical adenomas and continued neoplastic growth.

In our study, we found the etiological factors for renal cell carcinoma, as smoking in 30.50% of the cases and Infection in 0.50% of the cases. In cases of renal pelvic tumours, habit of smoking was found in 71.42% patients, infection in 28.57% of the cases stones in renal pelvis in 57.14% of cases. All cases of squamous cell carcinoma had stone in the renal pelvis.

Abnormal laboratory findings in cases of renal cell carcinoma reported by Skinner DG et al[9] are erythrocytosis in 3% of cases, Hypercalcemia in 3% of the cases. Hypercalcemia in 4.9%, polycythemia in 3.5% of the cases Boxer R et al[6] found raised ESR in 50% of cases of renal cell carcinoma, Hypercalcemia in 12.2% of cases. We found raised ESR in 8.70% of cases but hypercalcemia, abnormal liver function test and Erythrocytosis was not detected in our patients.

## CONCLUSION

Male to female ratio in case of renal cell carcinoma is found to be almost equal (1.3:1). Commonest etiological factor for renal cell carcinoma is smoking (30.50% of the cases). Maximum cases of renal cell carcinoma were presented with lump in abdomen and classic triad was found in only 17.4% of cases (i.e. pain, hematuria and lump). Maximum cases of renal cell carcinoma were found to be in stage III and IV. Majority of the renal cell carcinomas were treated with nephrectomy, postoperative radiotherapy, chemotherapy and hormonal therapy in combination. Approximately survival rate of renal cell carcinoma is 17.39%.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the institutional ethics committee*

## REFERENCES

1. Rafla S. Natural history and results of treatment. Cancer. 1970;25(1):26-40.
2. Howard MC. Paediatric oncology. In: Campbell MF, Retik AB, Vaughan ED, Walsh PC, editors. Campbell's Urology, 5th Ed. Saunders Publishers. 1986;2284.
3. Bennington JL. Cancer of the kidney – etiology, epidemiology and pathology. Cancer 1973;32(5):1017-29.
4. Mellinger T, Blackard CE. Cancer in horse shoe kidney. Arch Surg. 1968;97(4):616-27.
5. Dekernion JB, Ramming KP, Smith RB. The natural history of metastatic renal cell carcinoma: A computer analysis. J Urol. 1978;120(2):148-52.
6. Boxer RJ, Waisman J, Lieber MM, Mampaso FM, Skinner DG. Renal carcinoma: Computer analysis of 96 patients treated by nephrectomy. J Urol. 1979;122(5):598-601.
7. Kantor AF. Current concepts in the epidemiology and etiology of primary renal cell carcinoma. J Urology. 1977;117(4):415-7.
8. Lemerle J, Voute PA, Tournade MF, Delemarre FM, Jereb B, Ahstrom L. Preoperative versus postoperative radiotherapy, single versus multiple courses of actinomycin d, in the treatment of Wilms' tumor. Preliminary results of a controlled clinical trial conducted by the international society of pediatric oncology. Cancer. 1976;38(2):647-54.
9. Skinner DG, Colvin RB, Vermillion CD, Pfister RC, Leadbetter WF. Diagnosis and Management of renal cell carcinoma. A clinical and pathologic study of 309 cases. Cancer. 1971;28(5):1165-77.

**Cite this article as:** Hajgude V, Umalkar R. A clinical study of patients with renal cell carcinoma. Int Surg J 2016;3:314-7.