

Renal Tumors in Adults: The Clinical Experience of 124 Patients

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Abstract. To evaluate the clinical presentation and surgical management of adult patients who were presented with renal cancer, and to compare it with findings in the international studies as to give recommendations regarding future management in Saudi Arabia. 124 adult patients were included in the study. The data were reviewed for all patients. All data were entered and analyzed; the statistics obtained were the minimum values, maximum values, mean value and standard deviations. The age of the patients varied between 27 – 86 years old with a mean age of 54.08 (\pm 10.75) years, 96 (77.42%) patients were males while 28 (22.58%) were females. For clinical presentation, 32 (25.8%) patients were asymptomatic diagnosed during a general check up, 44 (35.5%) patients presented with gross hematuria, 14 (11.29%) patients presented with palpable masses, and 42 (33.87%) patients presented with flank pain. Among all renal tumor histological subtypes, conventional clear cell cancer was found in 66 (53.22%) patients, while transitional cell cancer was documented in 8 (6.45%) patients. Renal cancer is not a common disease. This study demonstrated the presence of some different clinical and pathological presentation than what has been reported in the literature. Multicenter national studies are needed to improve the outcomes for the management of renal cancer.

Keywords: Renal tumor, Renal mass, Kidney lesions.

Introduction

Renal cell carcinoma accounts for 3% of all adult cancers in western countries, it is the most lethal of the common genitourinary malignancies and about 25% of the patients die of the disease^[1,2].

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In the 2005, Saudi National Cancer Registry, when considering all age groups, renal cancer is not among the top ten common cancers. When looking more closely at more specific age group, the renal cancer is found to be the 6th and the 10th most common cancers in adult males of 30-45 and 45-59 years age group, respectively. On the other hand, prostate and bladder cancers are the 4th and 9th most common cancer in males, respectively.

The estimated incidence of kidney and renal pelvis cancer was based on the 2009 United States Cancer Statistics Report which was 5% in males and 3% in females. It was ranked 7th and 8th among the ten leading cancers in males and females respectively, and it was one of the top ten leading causes of cancer-related death^[4].

Methods and Patients

One hundred and twenty-four (124) adult patients were included in the study at King Abdulaziz University Hospital in Jeddah, from March 2001 to March 2010. Inclusion criteria were patients who underwent operative surgery and in exclusion criteria, all patients with multiple metastasis. All patients data were reviewed regarding age, sex, habits such as smoking, work, clinical presentation, co-morbid diseases such hypertension, *diabetes mellitus* (DM), renal impairment, laboratory investigation including complete blood count (CBC), renal and liver function test. As well as coagulation profile, radiological including ultrasonography and computerized tomography (CT) of the abdomen and pelvis, chest X-ray, CT scan of the chest and brain whenever indicated, histopathology reports, operative procedures and further medical oncology management.

Results

The age of the patients varied between 27 – 86 years old with a mean age of 54.08 (\pm 10.75) years, 96 (77.42%) patients were males and 28 (22.58%) females, and 60 (48.38%) were right kidney while 64 (51.62%) were on the left kidney.

32 (25.8%) patients were a symptomatic incidentally diagnosed during general check up, 44 (35.5%) patients presented with gross hematuria, 14 (11.29%) patients presented with palpable masses, and 42 (33.87%) patients with flank pain (Table 1). The average Hb was 12.32

gm/dl (± 1.9), lowest was 8.9; 16 patients at time of presentation, their Hb was less than 10; CT scan revealed heterogeneous masses in 110 patients and complicated cysts (3-4 Bosniak in 6 cases; liver metastases documented in 6 patients, and MRI was used in 4 patients with renal impairment to confirm the diagnosis. Conventional clear cell cancer was found in 66 patients (53.22%), and transitional cell cancer documented in 8 (6.45%). Other different pathological types and grading are mention in Table 2, and distant metastasis was documented in 33 (26.6%) patients.

Table 1. Presenting symptoms and concomitant diseases.

Symptoms & Concomitant Diseases	Number of Patients	Percentage (%)
Asymptomatic	32	25.8%
Hematuria	44	35.4%
Flank pain	42	33.8%
Flank mass	14	11.29%
Dysuria	6	4.8%
Weight loss	4	3.2%
Hypertension	12	9.7%
Urinary retention	2	1.6%
DM	18	14.5%
Contralateral stones	8	6.4%
Ipsilateral stones	4	3.2%
Renal impairment	4	3.2%
Fever	2	1.6%
Varicocele	2	1.6%

Radical nephrectomy was performed in 96 patients and partial nephrectomy in 20 patients. The indication for those partial nephrectomies were in 16 cases with tumor less than 4 cm, while in 2 patient, the other kidney was diseased and the tumor size was 5.2 cm and 5.7 cm. 1 patient had a 4.8 cm solid mass post donation of his contra lateral kidney, and one patient with single kidney tumor size 6 cm, while nephroureterectomy in 8 patients for transitional cell cancer (TCC).

Follow-up period varied throughout 6 - 41 months. 5 patients died within 6 months from radical nephrectomy. Local recurrence documented in 3 patients after radical nephrectomy in 3 months. 65 (52.2%) patients who were free of cancer at time of presentation had follow-up for 2 years, 29 patients had documented distant metastasis

while 36 patients were cancer free. 13 (10.48%) patients had documented follow-up for 41 months, 2 of these patients had distant metastasis.

Table 2. Different pathological types.

Histopathological Type	Number of Patients	Percentage (%)
Clear Cell (Conventional)	66	53.2%
Sarcomatoid	10	8.06%
Chromophobe	12	9.67%
Papillary	12	9.67%
Leiomyosarcoma	2	1.6%
Clear Cell Granular	4	3.22%
Multilocular	2	1.6%
Angiomyolipoma	2	1.6%
Unclassified	6	4.83%
Oncocytoma	2	1.6%
Collecting Duct Carcinoma	2	1.6%
Transitional Cell Cancer	8	6.45%

Discussion

The overall genitourinary cancer in Saudi Arabia was fivefold higher in men than in women^[5]. The 2005 National Cancer Registry Report showed that the prevalence of kidney cancer was 1.6 males to 1 in females^[3]. This study showed that the male to female ratio was 3.4 to 1, which is more than twice the ratio seen in the whole Kingdom. This might be due to different risk factors in the city of Jeddah located in the western region.

Cauberg *et al.* reported in April 2010 a data from the Dutch histopathology registry of 3,476 patients, 67% were male, 33% were females, and most tumors were found in the renal pelvis (51.3%)^[6].

The Seers Cancer Registry between 2000 and 2004 reported that the number of new cases was 57,760 (61.9%) in males and 35,430 (38.1%) in females^[7]. The prevalence of renal pelvis tumors was 4.6% of all kidney tumors in the National Cancer Registry Report^[3], while in this study it was 6.42%.

Cauberg *et al.* mentioned in their reported data, that the mean age in their study was 68.6 years, while Seers Cancer Registry reported a mean

age of 65 years. This study showed that younger age were the mean age was 54.08 years^[6,7].

None of our patients had documented familial or hereditary diseases such as Von Hippel-Lindau, hereditary papillary renal cancer or others that account for approximately 3 - 5% of the renal cell cancers in western countries^[8].

Smoking is a well known etiological risk factor in renal cancer. Parker *et al.* confirmed that current cigarette smoking was associated with a 31% increased risk of death from renal cell cancer compared with non smoker, and more likely to present with advanced diseases^[9,10]. In our series, 38 (30.6%) patients included in the study were smokers. Six of the 38 patients had poor histological type and 3 patients had clear cell cancer with distant metastasis. The increased use of axial imaging and ultrasound has been proposed as the likely primary factor that accounts for the increase in the incidental diagnosis of renal masses by 25%^[11,12].

The most common presenting symptom among our patients was hematuria, which was observed in 44 (35.4%) patients. Incidentally discovered renal cancer occurred only in 32 (25.8%) patients with a female to male ratio of 1:3. A review of 368 patients were performed in Norway by Beisland *et al.*, who found that 21% of tumors diagnosed between 1978 and 1987 were incidental, while 34.7% of tumors diagnosed between 1988 and 2000 were also incidental. Furthermore, they found that women were more likely to have incidental diagnoses of tumors with a male to female ratio of 50.5% to 49.5%^[13].

In the west, approximately 25% of patients were presented with metastatic renal cell cancer at diagnosis, while 20-30% of patients with localized tumors at the time of nephrectomy relapsed after surgery and developed metastasis. Furthermore, metastatic renal cancer has a poor prognosis and is notoriously resistant to treatment with chemotherapy^[14-16].

The present study revealed almost similar incidence of metastatic renal cancer at time of presentation of 33 (26.6%) patients, whereas 27 (29.7%) patients with localized tumors at time of presentation developed distant metastases in 6-24 months.

Clear cell (conventional) renal cell cancer was found in 66 (53.22%) patients. Cancers with sarcomatoid differentiation were found in 6 (6.06%) patients, and this frequency was similar to what have been

reported in the literature. However, papillary renal cell cancer constitute up to 10.3% of all renal cortical tumors, which was less than what has been reported in the literature^[17-20].

The high frequency of late presentation of patients with high grade and distant metastasis in Saudi Arabia should encourage all urologists in the country to conduct multicenter studies. Moreover, develop regular check-up program that can detect renal cancer earlier and developed an earlier more effective medical system^[17-20]. A limitation of our study was that the longest follow-up time was only 41 months, and the follow-up for the patients with metastasis was less than 6 months, since patients had to be sent to another hospital due the lack of the targeted therapy in our institute.

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الخبره في ١٢٤ مريض بالغ مصاب بورم الكلية

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المستخلص. عملت الدراسة تقييم طرق شكوى المريض، والعلاج الجراحي للمرضى البالغين، الذين كانوا يعانون من أورام بالكلية، ومقارنتها بالدراسات العالمية المنشورة، ومن ثم إعطاء التوصيات التي تسهم في تحسين العناية بهؤلاء المرضى، وقد تم إدراج ١٢٤ مريضا بالغاً في هذه الدراسة. روجعت سجلات المرضى، كل المعلومات أدخلت، وحللت، وتم الحصول على القيم الدنيا، والعليا، والمعدل، ومعدل التفاوت في القيم، وتفاوت سن المرضى بين ٢٧- ٨٦ عاماً، معدل السن كان ٥٤,٠٨، عدد المرضى الذكور ٩٦ (٧٧,٤٢٪)، والإناث ٢٨ (٢٢,٥٨٪). أما طريقة شكوى المريض فكان خلال الفحوصات العامة في ٣٢ (٢٥,٨٪) مريض، أو نزيف بولي في ٤٤ (٣٥,٥٪) مريض، ورم محسوس في ١٤ (١١,٢٩٪) مريض، وآلام بالجانب في ٤٢ (٣٣,٨٧٪) مريض، الفحص للأنسجة أوضح أن ٦٦ (٥٣,٢٢٪) مريضا لديهم كليرسل، وأن ٨ مرضى كانوا يعانون من ترانسيشنل سل (Transitional cell cancer).