

Malignant Renal Tumours in Adults in Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

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ABSTRACT

BACKGROUND: Malignant renal tumour is the third commonest urological tumour after prostate and bladder cancer. It is however the urological tumour with the highest mortality/incidence ratio.

OBJECTIVE: To review the frequency, mode of presentation and histological pattern of patients with malignant renal tumours in Nnamdi Azikiwe University Teaching Hospital.

METHOD: A 7 year retrospective review of all our renal tumour folders in the institution.

RESULTS: 19 patients qualified for the study with a male/female ratio of 1:2.8 and a mean age of 52.6 ± 15.8 years. The peak age was in the seventh decade. Most patient present late (78.9%). Renal cell cancer was the commonest tumour type with the commonest mode of presentation being abdominal mass and pain.

CONCLUSION: Malignant renal tumours present very late in our environment and patients hesitate in accepting available treatment option which is surgery. There is need for increased patient awareness and high index of suspicion by the clinician, particularly during imaging procedures, as this would significantly enhance the early detection of these patients.

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INTRODUCTION

Renal tumours account for 3% of all new cases of cancer diagnosed in men and just under 2% of all cancer in women in the UK¹. In Africa however it accounts for between 0.5 to 3% of all adult tumours^{2,3}. Renal tumours are the third commonest urological tumours after prostate and bladder cancers worldwide^{4,6}. The incidence is still rising⁷. In 2006 the incidence of renal cell cancer in U.S.A was 38890 cases, of whom 12849 died⁸. This represents the highest yearly mortality/incidence ratio of all urologic tumours.⁸

While the exact cause of renal cancer remains unknown, documented risk factors include cigarette smoking, obesity, hypertension, diabetes mellitus, estrogen therapy, occupational exposure to petroleum products, heavy metals, asbestos, chronic dialysis and renal failure⁹.

Surgery remains the best modality of treatment and is our only hope of cure when these tumours are discovered

early since the tumour has not been found to respond optimally to irradiation and chemotherapy^{12,13}.

The advancement of radiological diagnosis in the developed world has led to increased incidence of early asymptomatic disease and thus curable form¹⁴. Previous reports in Nigeria and Africa show we are still plagued with patients with advanced diseases¹⁵⁻¹⁷. The common reported modes of presentation being haematuria, flank pain, flank swelling and weight loss while the commonest histologic type of adult malignant renal tumour is renal cell carcinoma.¹⁵⁻¹⁷ The poor outcome recorded in the developing world cannot be separated from the preponderance of advanced disease.

Knowing in clear terms the burden of this tumour, the pattern of presentation and patients' attitude and/or acceptance to the available treatment options will help strategize on how best to reduce the burden of the incurable metastatic stages, and improve on patients acceptance of physicians advice on treatment.

Although studies on renal neoplasm have been done in other parts of Nigeria^{15,18,19} reports are rife on the differences in people of different ethnic group in the incidence, presentation, and need for nephrectomy in people with renal tumour even in the same country^{7,20-23}.

Thus, in this retrospective, descriptive study we reviewed the frequency, mode of presentation, histologic pattern and outcome in patients that presented with malignant renal tumour in Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State, Nigeria.

This will also afford us the opportunity to take stock in our center and compare results with other people.

MATERIAL AND METHODS

This is a retrospective study of all the adult with malignant renal tumours seen consecutively in Nnamdi Azikiwe university teaching hospital over a period of 7 years starting from 1st January 2004 to 31st December 2010. The adults were people aged 18 year and above.

A total of 30 cases were analyzed. Of the 30 only 19 qualified for this study. All patients below 18 years were excluded. Data on folder number, age, occupation, sex, route of admission, presentation, examination findings, investigation, staging, treatment, histology and follow up

were collected and analyzed. Follow up was assumed to have started from the day of surgery for those operated upon and from the day of diagnosis for those not fit for surgery.

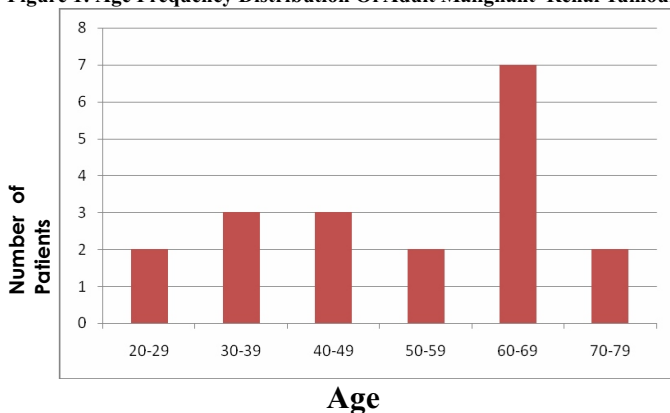
Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17.

RESULTS

A total of 19 patients were seen within the seven years interval from 2004 to 2010. 15 were admitted through the surgical outpatient and four came through the Accident and Emergency Unit. Their ages ranged from 25 to 75 years with a mean age of 52.6 ± 15.8 years.

The peak age incidence is 60- 69 years with 7 patients (See figure 1).

Figure 1: Age Frequency Distribution Of Adult Malignant Renal Tumour



The male female ratio was 1:2.8. The duration of symptoms ranged from 0 to 180 months with an average of 20 months. 2 patients were asymptomatic and thus their duration of symptoms was Zero month.

More people presented with mass (78.9%) and pain (78.9%) than any other symptoms (See table I). Other symptoms and signs they presented with were weight loss in 15 (78.9%) patients, haematuria in 10(52.6%) patients, supraclavicular lymphadenopathy in 4(21.1%) patients and anorexia in 9(60%) patients

Table 1: Symptoms and Investigation

Symptom	Frequency	Percentage
Mass	15	78.9%
Pain	15	78.9%
Haematuria	10	52.6%
Mass & Pain	14	73.7%
Mass & Haematuria	8	42.1%
Pain & Haematuria	8	42.1%
Mass, Pain & Haematuria	7	36.8%
Weight loss	15	78.9%
Anorexia	9	60%
Supraclavicular node	4	21.1%

Investigation	Number of Patients Who Did	Number Suggestive of Renal Malignancy (%)
Ultrasound Scan	19	19 (100%)
IVU	17	9 (47.4%)
CT Scan	1	1 (100%)

All the patients did ultrasound scan which was suggestive of renal tumour in all 19 patients. Seventeen patients did intravenous urography; it was suggestive of renal tumour in nine and showed nonexcreting or delayed film in the remaining patients. Only one patient did computerized tomographic scan which characterized the tumour.

Using Robson staging, one patient presented in stage I, three presented in stage II, four presented in III while eleven presented in stage IV.

11 people had radical nephrectomy, one patient had partial nephrectomy while one patient had nephrectomy with residual unresectable tumour mass. Three patients were not fit for surgery while 3 people refused surgery and subsequently absconded from further management. Of those who had surgery and did histology, 11 (84.6%) were renal cell cancer and 2 (15.4%) were sarcomata (pleomorphic Liposarcoma and intermediate grade soft tissue sarcoma). Of the renal cell carcinoma, seven (53.8%) were of the clear cell variant, 2 (15.4%) were of the chromophobe variant, one (7.7%) was of the papillary variant and one (7.7%) was of the sarcomatoid variant.

All the patients who had surgery or not fit for surgery were followed up. The duration of follow up ranged from 13 days to 5 years with an average duration of 4 months.

DISCUSSION

Their ages ranged from 25 to 75 years with a mean age of 52.6 ± 15.8 years and peak age of 60-69 years. While this is slightly higher than the 44 years observed by Aghaji and Odoemena¹⁵ in South East Nigeria it is close to the 47.5 year and 51 years reported by Badmus et al¹⁹ in South West Nigeria and Gueye et al¹⁶ in Senegal respectively. Aghaji and Odoemena¹⁵ studied strictly renal cell cancer while Gueye et al¹⁶, Badmus et al¹⁹ and our work looked at all adult malignant renal tumours.

The mean age still remains less than the 61 years observed in Caucasians^{24,25} and Asians²⁶. Some other studies even put the mean ages at 63 and 66 years for Asian and White Americans respectively^{7,20}

The peak age incidence in our study is the seventh decade which does not agree with earlier studies in Africa that showed that it occurs earlier in our population^{2,15,17-19}. We could not explain the reason for this difference but this could well reflect the improvement in our life expectancy or the disparity in region/ethnic group. The peak incidence agrees with that in the caucasians²⁷.

The male/ female sex ratio of 1:2.8 is close to the 1:2.1 reported by Odubanjo et al¹⁸, in their 47 years retrospective review of renal cell cancer in South West Nigeria. This is however different from other report where renal tumours in adult is said to be commoner in males^{2,9,19,20,24,25,28,29}. In fact urethral cancer is the only

shared genitourinary urological tumour that has been found to be commoner in females³⁰

The commonest method of presentation in this study were abdominal mass(78%), abdominal pain (78.9) and weight loss(78.9%). This is in keeping with the high rate of such presentation in Africa which are more or less evidence of advanced disease.^{15,16,19,29} Only 52.6% of patients presented with haematuria which is similar to the report by Badmus et al¹⁹. Aghaji and Odoemena¹⁵ however reported haematuria in 86.5% of patients. This could be explained by the preponderance of patients with non excreting kidneys as shown on intravenous urogram in our study. The wide difference in sample size is another factor: Badmus et al¹⁹ and our study had only 18 and 19 patients respectively while Aghaji and Odoemena¹⁵ studied 74 patients. As noted earlier, the study by Aghaji and Odoemena¹⁵ is strictly on renal cell carcinoma while our study and that of Badmus et al¹⁹ studied malignant renal tumours.

The classical triad of renal tumour (haematuria, abdominal mass, abdominal pain) was found in only 36.7% of patients. This is higher than the 20.8% reported by Gueye et al¹⁶ in Senegal but slightly less than the 43.2% reported by Aghaji and Odoemena¹⁵ in South East Nigeria .Only 2 (10.5%) patients presented incidentally following imaging (ultrasound scan) for other indications. In contrast, most Caucasian patients present relatively early and the incidence of localized renal cancer is rising faster than that of advanced stage disease⁷. Increased incidental diagnoses as a result of more frequent use of radiologic imaging has been cited as a reason for the rising incidence in local stage disease.³¹ Infact, recent reports from USA show that 40-50% of cases of RCC are detected incidentally during imaging for non renal indications¹⁴.

Abdominal ultrasound scan was done on all our patients and was found to be very useful. It identified malignant renal tumour in all 19(100%) patients. Intravenous urography was done by only 17 patient and it identified renal tumours in only 9 (47.4%) while CTScan was done by only one patient and it characterized the tumour in that patient. Ultrasound is thus very useful in investigating advanced disease which is the predominant disease in our environment. It does not however tell us the state of the surrounding tissues like we got with CTScan. Most patients for financial reasons are not able to do CTScan. This is however changing as CTscan is becoming increasingly available and cheaper in our environment now.

Surgery remains the main stay of treatment as malignant renal tumour has not been found to respond to radiotherapy,chemotherapy or hormonal treatment^{12,13}. Thus we offered nephrectomy to our patients. The patient

who presented with incidental finding of renal tumour in stage I had partial nephrectomy. She has been followed up for 2 years now with CT scan imaging and has been found to be free from the disease. Another patient who had stage II disease was found to have tumour recurrence at 4 years post surgery, had chemotherapy which surprisingly relieved her pain. She finally succumbed to the tumour one year post recurrence.

The duration of follow up ranged from 13 days to 5 years with an average duration of 4 months. The poor outcome in this study is probably from the preponderance of late disease (78.9%). This mirrors the finding in other African reports^{2,15-17,19}. This completely contrasts reports from the developed world where most cases are detected early in stages 1 and 2 disease¹⁴

Our outcome may be made better when we become aggressive with our public awareness program to encourage early presentation and also explore the advantage of the new agent sunitinib which has been adjudged the standard therapy for all patients with metastatic renal cell cancer which is the commonest form of renal malignancy³². The problem we currently have is that sunitinib is not yet available in our environment.

Of great concern is the fact that 15.8% of the patients refused surgery. This may be because of abundance of competing alternative care (homeopathic, herbal medicine etc), lack of proper counseling or public awareness on the enormity of the disease entity especially when delay leads to late presentation.

84.6% of the malignant renal tumours in this study were renal cell carcinoma which confirms that renal cell carcinoma is the commonest malignant renal tumour in adults^{2,8,16,19,33}.

CONCLUSION

Renal tumours are rare in our environment and renal cell carcinoma is the predominant type. Patients with malignant renal tumours present very late and acceptance of the available surgical options is poor.

There is therefore need for increased education of the public to improve patients' health awareness. Since most of the required investigative tools are now available, there should be increased consciousness and index of suspicion by the clinician especially during imaging studies.

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