Radical nephrectomy in management of renal cell cancer. A single surgeon experience

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Abstract

Background

There has been an increase in the incidence of renal cell cancer.Early diagnoses due to the easily availability of ultrasound has increased in its detection at early stage and improved survival. The incidence and outcomes of renal cell cancer (RCC) is not known in KPK region of Pakistan.

Objectives: To share a single surgeon experience in the management of renal cell cancer and its outcomes from KPK region of Pakistan and document it for the future research work.
Place of Study: Khyber Teaching Hospital, Peshawar
Duration of study:

Material & Methods: It's an observational cohort study conducted from March 2012 till June 2017 in Surgical Department B at Khyber teaching hospital, Peshawar. The patients who underwent radical nephrectomy in our department were included in the study. AJCC renal cell TMN staging system was used to stage the disease. Demographics, histopathology reports and follow-up investigations were noted. Standardfollow-up criteria were applied on all patients.
Data was analysed in SPSS 20 software, 5 years' survival was assessed with Kaplan Myers model, P value of <0.05 was taken significant.

Results: Only 77 patients fulfilled the criteria and were included in the study, mean age was 56.7 years ± 14.3 (Min 25 and max 89 years). 59.7% of the patients were male while 40.3% were female. 55.8% of patients were diagnosed incidentally, the most common symptom at presentation was classical flank pain (36.4%) followed by haematuria (27.3%), flank mass and weight loss, each in 5% of patients and fever in 1.3% patients only. Clear cell cancer was the most common histopathological variant of RCC followed by Papillary variant.
Mean duration of follow up was 37.5 ± 25 months. The overall 5 years' survival in our study was 69% (SE= 0.11). The 5 years' survival for recurrent disease was only 39%, there was significant difference of survival among the patients with recurrent and non-recurrent disease.

Conclusion: Radical nephrectomy still remains a better treatment option for organ confined RCC has good survival outcomes especially in the underdeveloped areas of the world.

Keywords: Renal cell carcinoma, Radical Nephrectomy, Survival, Recurrence.

INTRODUCTION

Renal cell cancer accounts approximately 2% of newly diagnosed cancers1.The incidence of renal cell cancer in United States is rising annually by 3.8% in males and 4.7% in female2. Gold standard treatment for localized RCC is surgery, those tumors that are equal or smaller that 4cm are surgically managed with Nephron sparing surgery and radical nephrectomy is recommended for those tumors which are greater than 4cm in size or those smaller tumors which cannot be excised safely by nephron sparing surgery3. Reteroperitoneoscopic Radical nephrectomy has superior outcomes as compared to open radical nephrectomy in terms of fast recovery to health related quality of life4.
The main aim of our study was to share experience in the treatment of renal cell cancer in form of radical nephrectomy and to assess the outcomes, document it for future studies in this field in our region.

METHODS

It's anobservational cohort study conducted from March 2012 till June 2017 in Surgical Department B at Khyber teaching hospital, Peshawar. The patients who underwent radical nephrectomy, with proven histopathology of renal cell cancer, in our department were included in the study. All the patients were staged according to AJCC renal cell TMN staging system, CT scans were performed in all patients before surgery, age, gender and symptoms at presentation were noted in all patients. Histopathology reports were noted at first post-surgery visit, ultrasound abdomen, X-ray chest were performed at 3 and 6 months while CT chest and abdomen was performed at 1 year from the date of surgery. Rest of follow was performed with alternation of ultrasound &X-ray chest with CT chest and abdomen at 6 months' intervals for the rest of 4 years. Disease recurrence and sites of recurrence was noted during follow-up. Patients with age less than 18 years, those who lost to follow within 3 months of surgery,

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metastatic disease on presentation, concomitant other type of malignancy and bilateral renal tumors were excluded from the study.

Data was analysed in SPSS 20 software, 5 years' survival was assessed with Kaplan Myers model, P value of <0.05 was taken significant.

RESULTS

Total of 77 patients were included in the study with mean age of 56.7 years ± 14.3 (Min 25 and max 89 years). 59.7% of the patients were male while 40.3% were female. 55.8% of patients were diagnosed incidentally while the reset presented with symptoms. The most common symptom at presentation was classical flank pain (36.4%) followed by haematuria (27.3%), flank mass and weight loss, each in 5% of patients and fever in 1.3% patients only. The histopathological variants and each Fuhrman grade percentage are shown in table 3&4 respectively.

Mean duration of follow up was 37.5 ± 25 months while the mean time to recurrence was 19 ± 22 months. 19% of the patients had disease recurrence, the most common site of metastasis was lungs while the rest of metastatic sites and their frequencies are shown in table 5.The overall 5 years' survival in our study was 69% (SE= 0.11) as shown in figure 1. The 5 years' survival for recurrent disease was only 39%, there was significant difference of survival among the patients with recurrent and non-recurrent disease (Log Rank = 0.001) as shown in Figure 2.

Histopathology Variants (Table 3)

		Frequency	Percent	Valid Percent
Valid	RCC(unclassified)	1	1.3	1.3
	Clear cell variant	50	64.9	64.9
	Papillary variant	9	11.7	11.7
	Chromophobe variant	9	11.7	11.7
	Sarcomatoid variant	6	7.8	7.8
	Multiloculatedvariant	1	1.3	1.3
	Eosinophilic variant	1	1.3	1.3
		77	100.0	100.0

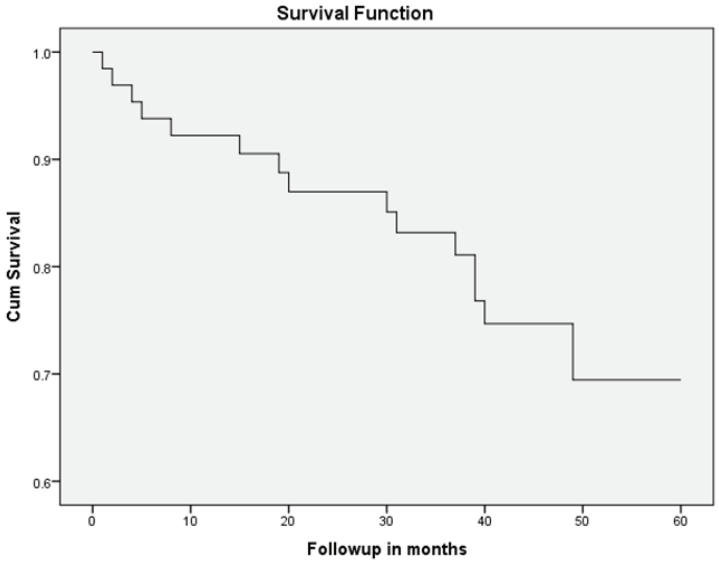
Fuhrman's grade (table 4)

		Frequency	Percent	Valid Percent
Valid	1	5	6.5	6.7
	2	45	58.4	60.0
	3	13	16.9	17.3
	4	10	13.0	13.3
	not mentioned	2	2.6	2.7
	Total	75	97.4	100.0
Missing	System	2	2.6	
Total		77	100.0	

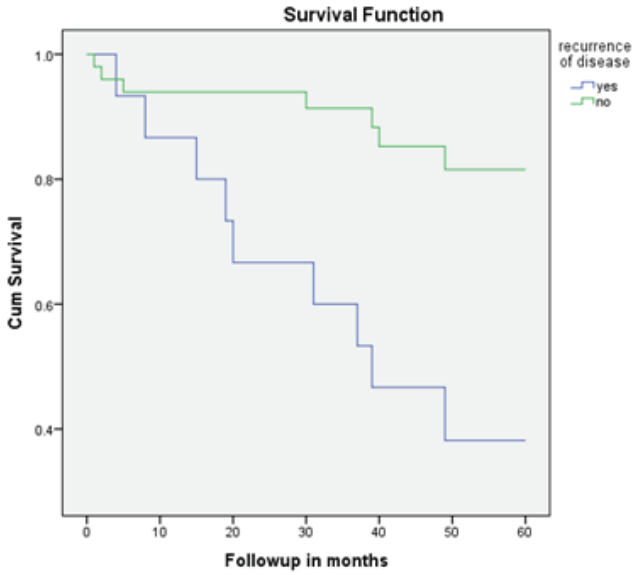
Metastatic sites (table 5)

		Frequency	Percent	Valid Percent
Valid	liver	1	1.3	1.3
	lungs	8	10.4	10.4
	multiple	2	2.6	2.6
	pancreas	1	1.3	1.3
	bones	1	1.3	1.3
	local	2	2.6	2.6
	not applicable	62	80.5	80.5
	Total	77	100.0	100.0

Overall 5 years survival (Figure 1)



5 years' survival graph for recurrent and non-recurrent disease (Figure 2)



DISCUSSION

Radical nephrectomy and Nephron sparing surgery remains the gold standard treatment for non-metastatic renal cell cancer and the only treatment option that can cure this disease.Cytoreductive nephrectomy & targeted therapy are reserved for patients with metastatic disease. Interferon and IL2 have some response to metastatic RCC but because of the toxicity there has been a steady decline in its use for the last 2 decads5,6.Tyrosine kinase inhibitors (*TKIs) and inhibitors of the mTOR complex are new promising medicines approved by FDA in treatment of Metastatic RCC7,8.

Clear cell carcinoma remains the most common variant of RCC on diagnosis followed by Papillary variant, we noted the same trends in our study as well9,10.

As far as the survival is concerned, there has been an approximately 20% improvement in survival of RCC in the last four decades from 57% to 74%11. The main reason of this change in the survival is due to the extensive use of Ultrasound as a routine investigation. There has been an increase in use of ultrasound in KPK province of Pakistan that has not only increased the incidental findings of RCC but has also improved the survival outcomes. 56% of the patients in our study were diagnosed incidentally which is similar to other studies. In our study the overall 5 years' survival was 69%, unfortunately we don't have sufficient data available in KPK to compare the survival outcomes that show the trends of survival in non-metastatic RCC in KPK province however our study will prove its importance for the further research in this field especially in our region of Pakistan.

CONCLUSION

Radical nephrectomy still remains a better treatment option for organ confined RCC has good survival outcomes especially in the underdeveloped areas of the world.

Key words:
Renal cell carcinoma, Radical Nephrectomy, Survival, Recurrence.

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