

Research Article

A study of surgical profile of patients with Wilms' tumor

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Received: 22 December 2015

Accepted: 06 January 2016

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ABSTRACT

Background: Much of the early treatment of Wilms, tumour was unsuccessful because of the high mortality from the nephrectomy in the nineteenth century. Radiotherapy was first attempted in 1915, but by 1936, fewer than 20% of the Patients with wilms' tumour survived. The objective was to study the staging and treatment modalities of Wilm's tumor.

Methods: Present study was Hospital based prospective study among 44 patients. Institutional Ethics Committee permission was obtained prior to the study. All the patients were explained the complete protocol of the study and their informed written consent was taken. Study was carried out at Department of General Surgery of a Tertiary care hospital for a period of one year.

Results: The youngest patient of Wilms' tumor was found to be of 8 month old, while patient was of 8 years. The age group of 0-2 years consists of highest number of cases. Maximum number of cases of Wilms' tumor was presented with lump in abdomen i.e, 12 cases (92.30%). Maximum number of patients was in stage III (42.67%). In one patient staging was not possible because he was absconded before treatment. Nephrectomy with postoperative chemotherapy was given in maximum number of cases (30.76%). Biopsy was done where tumor mass was adherent to adjoining viscera.

Conclusions: Male to female ratio in case of Wilms' tumors is almost equal (1:1.6). Bilateral Wilms' tumors are rare, found in 7.7% of cases. Lump in Abdomen was the common feature in Wilms' tumor. Maximum cases of Wilms' tumor were in stage III. Maximum cases of Wilms' tumor were treated with nephrectomy along with postoperative chemotherapy i.e. Vincristine and Actinomycin D in combination. Wilms' tumor 30.76% and renal pelvic tumors 42.85% for 2 year.

Keywords: Wilm's tumour, Staging, Chemotherapy

INTRODUCTION

Rance apparently was the first to describe the Wilms' tumour but Max Wilms' better characterized the tumour has become associated with his name. Other more descriptive terms, more than 40 including mixed tumour of kidney, embryoma of the kidney, and nephroblastoma are commonly used.¹

Much of the early treatment of Wilms, tumour was unsuccessful because of the high mortality from the nephrectomy in the nineteenth century. Radiotherapy was first attempted in 1915, but by 1936, fewer than 20% of the Patients with wilms' tumour survived.²

Sindney, Farber et al at Boston children's Hospital in 1956 reported actinomycin-D to be effective for Wilms' tumor.¹

By 1966, Farber reported a survival rate of 81% for children with Wilms' tumour treated by surgery, radiotherapy, and chemotherapy with actinomycin-D as compared with a 40% survival rate for children treated by surgery and radiotherapy alone.¹

Wolff et al reported that multiple courses of chemotherapy were more effective than a single course.

Subsequently high dose cyclophosphamide by Finklestein et al and Adriamycin by Wang et al were demonstrated to be useful in the treatment of wilms' tumor.¹

In 1969 the National Wilms' tumour study was formed in the United States and trial conducted by the international society of Paediatric oncology and the United Kingdom Medical Research Council helped guide the development of current treatment.¹

METHODS

Type of study

Present study was Hospital based prospective study

Sample size

A total of 44 patients were studied during the study period

Ethical consideration: Institutional Ethics Committee permission was obtained prior to the study. All the patients were explained the complete protocol of the study and their informed written consent was taken.

Study place

Department of General Surgery of a Tertiary care hospital

Study period: The study was carried out for a period of one year

Inclusion criteria

Patients having clinical features suggestive of Wilm's tumor and patients willing for participating in the study were included in the study.

Exclusion criteria

Patients not willing to be included in the study, patients with severe systemic diseases and bed ridden patients were not included in the present study.

Complete clinical history was taken and recorded in the pre designed and semi structured questionnaire from all the patients. Patients were evaluated for the staging the of the Wilm's tumor. Treatment modalities were carefully planned for each and every patient. Investigation like

intravenous pyelography was carried out for confirming diagnosis.

RESULTS

Table 1: Age incidence of Wilms' tumor.

Age group (yrs.)	No. of patients	Percentage
0-2	5	38.50
2-4	3	23.00
4-6	4	30.80
6 and above	1	07.70
Total	13	100.00

The youngest patient of Wilms' tumor was found to be of 8 month old, while patient was of 8 years. The age group of 0-2 years consists of highest number of cases.

Table 2: Clinical Feature of Wilms' tumor (No. of Patients 13).

Clinical features	No. of patients	Percentage (%)
Classic triad (Pain, lump, Hematuria)	1	07.70
Pain in abdomen	2	15.40
Lump in abdomen	12	92.30
Hematuria	2	15.40
Others (fever, wt. Loss)	4	30.80
Evidence of distant metastasis	3	23.00

It shows that the maximum numbers of cases of Wilms' tumor were presented with lump in abdomen i.e., 12 cases (92.30%).

Table 3: Staging in Wilms' tumor (No. of patients 12).

Stages	No. of patients	Percentage (%)
I	2	16.67
II	2	16.67
III	5	41.67
IV	2	16.67
V	1	08.32

We have used following treatment modalities in our patients.

1. Nephrectomy
2. Nephrectomy + Chemotherapy
3. Nephrectomy + Radiotherapy + Chemotherapy
4. Biopsy + Radiotherapy + Chemotherapy
5. Preoperative radiotherapy + Nephrectomy + postoperative Chemotherapy

Nephrectomy with postoperative chemotherapy was given in maximum number of cases (30.76%). Biopsy

was done where tumor mass was adherent to adjoining viscera.

Table 4: Treatment modalities for Wilms' tumor.

Treatment Modality	No. of patients	Percentage (%)
Nephrectomy	2	15.38
Nephrectomy+CT	4	30.76
Nephrectomy+RT+CT	2	15.38
Biopsy+RT+CT	2	15.38
Preoperative+RT+Nephrectomy+CT	1	07.70
Preoperative CT+Surgery Postoperative CT	1	07.70
Total	13	100.00

CT = Chemotherapy, RT = Radiotherapy

Chemotherapy was given in the form of vincristine and actinomycin-D in combination. Inj vincristine 1.5 mg/m²/day once in a week. Then 3 monthly on first and fifth day for 1 ½ year. Inj actinomycin-D, 15 microgram/day for 5 days in first and seventh week. Then 3 monthly 5 doses for 1 ½ year. Local radiotherapy was given 1500-2000 rads/10-15 fractions. In one patient treatment was not given as he was absconded.

DISCUSSION

Thackray³ reported Wilms' tumor in 9% of cases of renal tumors whereas Bennington et al⁴ reported in 8% of cases. Bernard⁵ reported incidence to be 11% of all cases of renal tumors. In the series of S. Rafla⁶ the incidence of Wilms' tumor was found to be 12.01%. In our study the incidence of Wilms' tumor is found to be 29.54%.

D'Angio et al found maximum incidence of Wilms' tumor below the age of 7 years (90%).⁷ In Bernard's series maximum cases were below the age of 6 years (85%).⁵ Howard et al reported 75% incidence between the age of 1 and 5 years, and 90% below the age of 7 years.¹ We had 92% of cases below the age of 7 years which is similar to that of D'Angio,⁷ Harward et al.¹

Incidence for Wilms' tumor was almost equal (0.97:1) in series of Bennington.⁴ Bernard⁵ reported M:F ratio of 1:1.7. We found M:F ratio of 1: 1.6 which is equal to that of Bernard's series.⁵

In the series of Bernard incidence of Wilms' tumor on left side (51.85%) is slightly more than that of the right side (39.50%) and bilateral tumors found in 10% of cases.⁵ Lemerle had incidence more on left (57.25%) than on right side (42.74%) and bilateral tumors in 5.24% of cases.⁸ D'Angio et al noted equal incidence on both sides and bilateral tumors in 5%.⁷ We found equal incidence on both sides similar to that of D'Angio et al finding⁷ and bilateral Wilms' tumor in 7.70% of cases approximately

equal to that of Lemerle⁹ and D'Angio et al⁷ series. Thus there is no side predilection for Wilms' tumor.

Abdominal mass is the common presentation of Wilms' tumor and was found in 80% of the cases of Lucian L. Leape series² and in 95% of the cases of Bernard et al series.⁵ Hematuria is uncommon. D'Angio et al reported gross hematuria in 10% of cases.⁷ Associated congenital anomalies found in 13% of the cases in the series of Lemerle.⁸

Our patients had lump in abdomen in 92.30% of cases. Hematuria was present in 8.70% of cases and pain in 8.70% of cases. Constitutional symptoms like fever, weight loss were present in 30.80% of cases. Evidence of distant metastases was present in 23% of cases.

Thus the maximum number of cases in our study was presented with lump in abdomen equal to that of Lucian L. Leape,² Bernard et al⁵ series. Less number of cases were presented with hematuria similar to that of other series of Bernard⁵ and D'Angio.⁷ We had no patient with hypertension or associated congenital anomalies.

CONCLUSION

Male to female ratio in case of Wilms' tumors is almost equal (1:1.6). Bilateral Wilms' tumors are rare, found in 7.7% of cases. Lump in Abdomen was the common feature in Wilms' tumor. Maximum cases of Wilms' tumor were in stage III. Maximum cases of Wilms' tumor were treated with nephrectomy along with postoperative chemotherapy i.e. Vincristine and Actinomycin D in combination. Wilms' tumor 30.76% and renal pelvic tumors 42.85% for 2 year.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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Cite this article as: Hajgude V, Dawle A. A study of surgical profile of patients with Wilms' tumour. *Int Surg J* 2016;3:310-3.