

# Solid Tumours in Children Mayo Hospital Experience

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A retrospective study of solid tumours in children was conducted between January 1994 to August 1998. A total of 180 cases presented during this period. 95(52.7%) were males and 85(47.3%) were females. Majority (66.6%) of malignancies occurred during first five years of life. Teratoma was the most common tumour followed by Wilm's and neuroblastoma. Rare tumours like malignant Schwannoma, cervical teratoma, mesoblastic nephroma, retroperitoneal lymphangioma and liposarcoma of mandible were also observed in this study.

**Key words:** Tumours, prevalence.

Childhood cancer is the leading cause of death in children<sup>1</sup>. Majority of cancers in children are malignant solid tumours and about 4000 new cases are diagnosed each year<sup>2</sup>. In developed countries, cancer is second only to trauma as the leading cause of death<sup>3</sup>. As there has been improvement in the control of infectious diseases in Pakistan, there is need for increased attention towards epidemiology of cancer and cardiovascular diseases. This study highlights the present status of malignancies in Paediatric Surgery, Mayo Hospital, Lahore.

## Material and Methods:

A retrospective study was conducted between 1st January 1994 to 31st August 1998 in Paediatric Surgery Department, Mayo Hospital, Lahore to collect relevant details of childhood malignancies upto age of 12 years. All cases of malignancies, operated in this department were included in the study. Neurosurgical, ENT and Ophthalmological malignancies were excluded from the study. A total of 180 cases were dealt with during this period, involving different parts of the body.

## Results:

The total number of cases during the study period were 180. Majority (66.6%) of malignancies occurred during first 5 years of life (Table-1). 95 (52.7%) were males and 85 (47.3%) were females (Table-2).

Table 1. Age distribution

Sr. No.	Category	No. of Patients (%age)
1	Upto 1 year	40 (22.22%)
2	>1-5 years	80 (44.44%)
3	> 5 years	60 (33.34%)

Table 2. Sex distribution

Sr. No.	Category	No. of Cases (%age)
1	Males	95 (52.7%)
2	Females	85 (47.3%)

Various types of tumours and their numbers were analyzed (Table-3).

Table-3 Types & number. of various malignant tumours

Types	No. of Cases (%age)
Wilms' tumour	35 (19.44%)
Neuroblastoma	27 (15.00%)
Retroperitoneal teratoma	20 (11.11%)
Sacroccygeal teratoma	16 (8.89%)
Hodgkin's lymphoma	12 (6.67%)
Non Hodgkin's lymphoma	10 (5.55%)
Rhabdomyosarcoma	10 (5.55%)
Thyroid carcinoma	9 (5.00%)
Yolk sac tumour	8 (4.44%)
Hepatoblastoma	6 (3.33%)
Angiosarcoma	6 (3.33%)
Liposarcoma	5 (2.78%)
Cervical teratoma	4 (2.22%)
Chordoma	2 (1.11%)
Pheochromocytoma	1 (0.55%)
Retroperitoneal lymphangioma	1 (0.55%)
Mesoblastic nephroma	1 (0.55%)
Schwannoma	1 (0.55%)
Others	6 (3.33%)
n=	180

Table 4. Recurrence of various malignant tumours

Types	No. of patients
Wilm's tumour	2
Neuroblastoma	2
Teratoma	2
Non Hodgkin's lymphoma	1
Yolk sac tumour	1

Some details of malignancies regarding sites, clinical presentation and their operative treatment has been described as follows:-

In all cases of Wilms' tumour, laparotomy was done and tumour excised completely. Most of the cases were in stage I and stage II. In one case of mesoblastic nephroma, laparotomy was done and tumour excised. No chemotherapy or radiotherapy was recommended for this case. Cut section of this tumour showed typical whorly appearance. All of neuroblastomas were retroperitoneal. One of them was a ganglioneuroblastoma arising retroperitoneally from spinal cord and going up into chest. Only biopsy was taken in this case and referred to Oncology Department. Teratomas formed a relatively larger group (about 29%) involving retroperitoneum (11%)

and sacrococcygeal region (9%). Teratomas involving the face, tongue, gastric region and cervical region were also encountered. Laparotomy was done for retroperitoneal teratomas and were excised completely. Other teratomas were also excised completely. Alphafetoprotein levels were done in all cases. About 90% showed increased levels.

Hodgkin's lymphoma presented with cervical lymphadenopathy except two which presented as mass abdomen. All cases were diagnosed on lymph node biopsy. Cases of non Hodgkin's lymphoma presented with mass abdomen and laparotomy was done in all. Cases of rhabdomyosarcoma were of different sites like retroperitoneal, vaginal, chest, thigh and scrotum etc. Retroperitoneal rhabdomyosarcoma was excised through laparotomy while in other cases biopsy or excision biopsy was taken. Seven cases (78%) of thyroid malignancies were of papillary cell carcinoma and two cases (22%) were of follicular carcinoma. One case presented with metastases to axillary lymph node.

Out of 8 yolk sac tumours, 6 were of testicular origin and other two tumours presented with mass abdomen. Out of later two one turn out to be embryonal yolk sac and other was an endodermal sinus tumour of ovary. Six patients with hepatoblastoma were subjected to biopsy only and then referred to Oncology Department.

Two patient with liposarcoma presented as mass abdomen, laparotomy was done and only biopsy taken because of irresectability. In one rare case of liposarcoma of mandible, hemimandibulectomy was done. The rest two liposarcomas were involving lower extremities where excision was done. Chordomas presented as mass sacrococcygeal region. In both patients only biopsy was taken because of metastases. Schwannoma a rare malignant tumour presented with mass abdomen, laparotomy was done and tumour excised.

Patients with recurrence which presented to our department were 8 in number (Table 4). All these patients were initially referred to oncology but had in adequate treatment due to their own negligence and socioeconomic factors.

#### Discussions:

Zaidi and Jeffery collected 213 malignant tumours over a period of 6 years from Southern part of Pakistan<sup>4</sup>. A series of 617 cases of malignant tumours in childhood have been reported in literature during a 7 year period<sup>5</sup>. We received 180 cases of malignant tumours during period of 4.5 years. Zaidi and Jeffery had described lymphoma, Leukemia and Retinoblastoma as most common malignant tumours<sup>4</sup>. Ahmad et al had reported leukemia and lymphoma as more common malignancy with renal tumour comprising almost 5% of total cases<sup>6</sup>. Jamshed Akhtar et al had described Wilms' tumour as most common tumour followed by bone tumour, neuroblastoma and soft tissue sarcoma<sup>7</sup>.

In our series, teratoma is the most common malignancy followed by Wilm's and neuroblastoma. Jamshed Akhtar et al had described equal sex distribution in a series of 84 cases of malignancies<sup>7</sup>. In our series, sex

distribution is almost equal (95:85). Jamshed Akhtar et al had described that most of the malignancies occurred in first five years of life<sup>7</sup>. Our series is consistent with that of Jamshed et al in which childhood malignancy was more common during the first five years of life. We report 66.6% of malignancies under five years of life.

We encountered different types of rare tumours like cervical teratoma, pheochromocytoma, malignant schwannoma, chordoma, retroperitoneal lymphangioma and mesoblastic nephroma etc.

In one study, intra-abdominal lymphangioma is discussed as a rare entity<sup>8</sup>. We treated one retroperitoneal lymphangioma. A series of 17 cases of abdominal teratoma had been reported in a study during a period of 15 years<sup>9</sup>. We report 20 cases of abdominal teratoma during 4.5 years which is significantly a higher incidence. A case of malignant Schwannoma occurring in 11 years old boy had been reported in one study<sup>10</sup>. We treated 7 year old boy with malignant schwannoma.

Recurrence of 8 tumours in our series is not a true presentation. For we do not have a thorough follow up of the patients. It is mainly due to the fact that patients usually do not report for follow up.

Occurrence of rare tumours in our series is most likely due to the fact that we are a tertiary care center and presently the biggest hospitals catering for paediatric surgical cases in Punjab and NWFP. Keeping in view the high incidence of childhood malignancies, we recommend that most studies should be focussed toward the incidence and if possible to determine the cause of this alarming high rate. Public should be made aware of the early diagnosis and treatment of childhood tumours.

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