



## A CLINICOPATHOLOGICAL STUDY OF ABDOMINAL LUMP IN CHILDREN

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## ABSTRACT

**Background:** An abdominal lump in a neonate, young child, or adolescent patient is something that every pediatrician needs to be wary of as these lumps can indicate malignancy. Neuroblastomas arising from the abdomen (the most common type) typically presents with abdominal pain. If the lump presents in the pelvic region, obstruction of the GI or GU tract can occur and can also present as paraspinal tumors and this can present as back pain or paraplegia. **Methods:** A prospective study involving 50 children (up to 12 year age group) of Abdominal lump in Pediatric Surgical Unit at Department of General Surgery, Gajra Raja Medical College and JA Group of hospital Gwalior during study from November 2017 to April 2019. **Results:** Out of 50 patients, were found under the age group of 3 years and 85% were children (under age group of 12 yrs). A high percentage occurred under the age group of 3 yrs. There were 30 males and 20 females. Ratio of male:female is 3:2. The commonest lump is the renal lump, gastrointestinal lump were the next common, whereas the mesenteric and other miscellaneous were the last in the order of involvement. All 50 patients presented with abdominal lump, 18% of them present with pain in abdomen, 10% with urinary retention, 10% with fever, 8% with hematuria and 8% with vomiting. In this group, 54% of cases were treated by surgery only, 12% by surgery + radiotherapy combined approach and 32% patients were treated conservatively. Only 2% patients were managed by radiotherapy. **Conclusion:** CT scanning may be also useful in identifying the type and extent of abdominal lumps in children. Outcome varies widely depending on the malignant or benign nature of the existing lump but is generally more favorable in neonates.

## KEYWORDS :

## INTRODUCTION

An abdominal lump in a neonate, young child, or adolescent patient is something that every pediatrician needs to be wary of as these lumps can indicate malignancy. An organized approach to abdominal lumps includes thinking about possible etiologies based on the location of the lump with regards to the underlining abdominal anatomy as well as discerning likely pathologies based on the age of the patient and associated symptoms or signs.<sup>1</sup>

Patients with abdominal lump can present with difficulty with urination or defecation if the lump physically obstructs the GI or GU tract. Neuroblastoma and Wilmstumour are two conditions where one must be vigilant about as they are the two malignant tumors in children where abdominal lump is commonly the initial presentation.<sup>2</sup>

Neuroblastomas arising from the abdomen (the most common type) typically presents with abdominal pain. If the lump presents in the pelvic region, obstruction of the GI or GU tract can occur and can also present as paraspinal tumors and this can present as back pain or paraplegia. Wilms tumors arise from the kidney and can present as an asymptomatic abdominal lump, or can be associated with abdominal pain, hematuria, or hypertension (with renin secreting tumors).<sup>3</sup>

To diagnose an abdominal lump, a proper history with a focused gastrointestinal physical exam is necessary to direct you to the proper diagnostic tests to order, or the right specialist to refer to respective speciality.

## AIMS AND OBJECTIVES

- To establish differential diagnosis of abdominal lumps in children up to 12 year age group.
- To outline the main management protocol in more common causes of abdominal lump in children.

## MATERIAL AND METHODS

A prospective study involving 50 children (up to 12 year age group) of Abdominal lump in Pediatric Surgical Unit at

Department of General Surgery, Gajra Raja Medical College and JA Group of hospital Gwalior during study from November 2017 to April 2019.

## INCLUSION CRITERIA:

- Children having abdominal lump
- Age up to 12 years

## EXCLUSION CRITERIA:

- Children above 12 year age group
- Children whose parent are not willing for study.

## METHOD OF COLLECTION OF DATA:

After obtaining approval from ethical committee, the present study were conducted on 50 children with less than 12 years age having abdominal lumps of and their parents giving consent to be included in study at Department of General Surgery, Gajra Raja Medical College and J.A. Group of Hospitals, Gwalior during study period of November 2017 to April 2019.

During the prospective study period, all selected patients were subjected to a detailed history taking and physical examination followed by routine laboratory tests and other investigations including ultrasonographic(US) of whole abdomen, CT scan etc.

## RESULTS

Table 1 : Showing Age and sex incidence in pediatric patients of abdominal lump

Gender	Age in years				Total
	1-3	3-6	6-10	10-12	
Male	11	9	5	5	30
Female	7	6	4	3	20

Out of 50 patients, were found under the age group of 3 years and 85% were children (under age group of 12 yrs). A high percentage occurred under the age group of 3 yrs. There were 30 males and 20 females. Ratio of male:female is 3:2.

**Table 2 : Showing Specific organ involvement in pediatric patients of abdominal lump**

Specific organ involvement	No. of cases	Percentage
Renal lump	27	54
Biliary tract lump	1	2
GI lump	15	30
Mesenteric lump	5	10
Miscellaneous/ Hepatosplenomegaly	1	2
Neuroblastoma	1	2

As shown in the table the commonest lump is the renal lump, gastrointestinal lump were the next common, whereas the mesenteric and other miscellaneous were the last in the order of involvement.

**Table 3 : Showing Incidence of clinical presentation in in pediatric patients of abdominal lump**

Clinical presentation	No. of cases	Percentage
Lump in abdomen	50	100
Pain in abdomen	9	18
Fever	5	10
Hematuria	4	8
Vomiting	4	8
Urinary retention	5	10

Out of 50 patients in our study, all of them presented with abdominal lump, 18% of them present with pain in abdomen, 10% with urinary retention, 10% with fever, 8% with hematuria and 8% with vomiting.

**Table 8 : Showing Management of cases of abdominal lump in pediatric age group**

Management	No. of cases	Percentage
Surgery only	27	54
Surgery + Radiotherapy	6	12
Conservatively only	16	32
Radiotherapy	1	2

In this group, 54% of cases were treated by surgery only, 12% by surgery + radiotherapy combined approach and 32% patients were treated conservatively. Only 2% patients were managed by radiotherapy.

## DISCUSSION

Pediatric tumours form a small proportion of all cancers; however, they are important in understanding the importance of neoplastic growth and evolution of cancer therapy, and its social impact is much more than anticipated; besides, it results in the loss of many more productive years of life, arousing poignant sympathy.

In our study of 50 patients, majority of the patients had Wilms' tumour.

This is in accordance with the incidences reported in data collected by Surveillance Epidemiology and End Result Programme of National Cancer Institute between 1973 and 1999 and by International Classification of Childhood Cancer group for 0–19 years old.<sup>93</sup> But we have only studied patients in the age group of 0 to 12 years.

Patients with Wilms' tumour presented in early age, whereas NHL and HCC were found to occur in children above 4 years of age. Sharif et al.<sup>94</sup> reported the mean age of Wilms' tumour as 3 years. In another study, median age of Wilms' tumour is reported to be around 2.5 years.<sup>95</sup> Another study reflects the mean age to be 3.5 years for Wilms' tumour.<sup>97</sup>

Neuroblastoma also had its peak incidence in the age group of 2–6 years. NHL had its maximal incidence in the age group of 4–6 years.

Majority of the patients in our study presented with abdominal lump. Wilms' tumour has been reported to present as asymptomatic abdominal lump.

Abdominal swelling was present in all of patients with neuroblastoma accompanied with abdominal pain, vomiting, fever, pallor, failure to gain weight, easy fatigability, loss of appetite, breathlessness, bladder and bowel dysfunction and diarrhoea. Neuroblastoma has been reported to appear typically as abdominal lump in young children.

Intestinal obstruction was the presenting feature in 62.5 % of cases of abdominal NHL, accompanied with symptoms such as abdominal pain, fever, generalise weakness, vomiting, anorexia and loss of weight. Two children with diagnosis of HCC presented with vague upper abdominal pain, abdominal swelling with intermittent fever and anorexia lethargy and jaundice.

## CONCLUSION

The neonate, infant, or child with an abdominal lump needs rapid clinical evaluation. Age, history, and physical examination provide initial guideposts to diagnosis. Imaging studies, particularly sonography, may provide a specific diagnosis. If the initial evaluation indicates possible malignancy, more complex testing of blood, bone marrow, serum chemistries, and urine may be required. CT scanning may be also useful in identifying the type and extent of abdominal lumps in children. Outcome varies widely depending on the malignant or benign nature of the existing lump but is generally more favorable in neonates.

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