



ABDOMINAL MASSES IN CHILDREN: AT A TERTIARY CARE HOSPITAL

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ABSTRACT

INTRODUCTION: Abdominal masses in children have more importance than adults as because it may cause severe problems with adjacent structures. The purpose of the study is to explore the sonological diagnosis of abdominal masses.

METHODS: It was a one year prospective study of 304 cases who have been attended with abdominal masses in the radiology department of tertiary care hospital in Dhaka. Provisional diagnosis was done by ultrasonogram which was later confirmed by clinically and histopathologically.

RESULTS: Out of 304, boys to girls ratio was 2.1 :1 with age range 1 day to 6 years. Major cases of abdominal masses were hydronephrosis 250(82.24%) and intussusception 25(8.22%) and hypertrophic pyloric stenosis 20(6.58%) were also predominants. Among them 8(2.63%) cases (nephroblastoma and neuroblastoma) were confirmed as malignant.

CONCLUSIONS: Early diagnosis of abdominal masses may enhance prompt management protocol.

KEYWORDS : Abdominal masses, children, ultrasonogram, Bangladesh

INTRODUCTION:

A mass within the abdominal cavity anterior to the paraspinal muscles is considered as abdominal mass.¹ From the literature review, information regarding the incidence of abdominal masses can not be explored and there is scarcity of information about the relative frequency with which specific diseases are correlate with abdominal masses. As abdominal mass can be for raised for various cause, it is very difficult to come to an specific diagnosis.²

In children it is very important to find out the abdominal mass, cause there is possibility of malignancy more among them.³ Even in benign conditions, it may cause severe problems with adjacent structures like blood vessels, nerves and loops of intestine and may develop critical condition. Many clinical assessments are involved for clinical diagnosis of abdominal masses. The diagnostic criteria depends on different variables like age, gender, geographical location of the patients, location of the mass and presence or absence of associated symptoms. Then the confirm diagnosis can be narrow down by determination of organ or tissue of origin.⁴ Abdominal masses represent a common mode of presentation both intra abdominal and extra abdominal disorders in children but the management could be delayed by diagnostic challenges caused by the incomprehensibility of aetiologies. Finding the appropriate cause may fasten the management protocol.

Therefore this study is aimed to find out the distribution of abdominal masses and to have ideas about the clinical conditions which are more associated with abdominal masses.

RESULTS:

It was a 1 year time period prospective observational study, from January 2016 to December 2016 of children who presented at radiology and ultra sonogram department with any kind of abdominal masses.

It was done at a specialized hospital by a single expert radiologist with Simens sonoline G-40 and Siemens Acuson NX 3 Elite machine.

All children aged 1 day to 17 years at the last birthday were included in the study who visited the department and had clinical, radiological or intra-operative evidences of intra abdominal masses were enrolled in this study.

The clinical diagnosis were confirmed through detailed analysis of the clinical history, clinical examinations, investigations which included both radiological and biochemical investigations and also histopathological study.

Other relevant information regarding clinical presentation and duration of symptoms, demographic data was taken. Data generated were analysed by SPSS 23.0 version and findings are presented in proportions, percentages and with relevant graphs.

RESULTS:

Table 1: Distribution of abdominal masses according to clinical diagnosis(n=304)

Clinical Diagnosis	number	percentage
1. Hydronephrosis	250	82.24
a. Hydronephrosis	50	16.45
b. PUJ	50	16.45
c. Post-urethral valve	150	49.34
2. Intussusception	25	8.22
3. Mesenteric cyst	1	0.33
4. Nephroblastoma	5	1.64
5. Neuroblastoma	3	0.99
6. Hypertrophic pyloric stenosis	20	6.58

A total 304 children with abdominal masses were visited during the time period with abdominal masses. Out of them 208(68.42%) were boy and 96(31.58%) were girl. The distribution of age was from 1 day to 6 years. Most of the PUJ patients were within 1 day to 1 year age range, hydronephrosis 1-5 years aged group and posterior urethral valve 3-4 years aged group.

Among all, most of the cases were hydronephrosis 250(82.24%) which included more posterior urethral valve obstruction 150(49.34%) children. Intussuception 25(8.22%) and hypertrophic pyloric stenosis 20(6.58%) were other two major causes of abdominal masses. The distribution of abdominal masses are described detailed in table.1.

Among the children 8(2.63%) cases were malignant cases which were confirmed by histopathological study later. Rest are non-malignant conditions.

The clinical features included abdominal distension, dribbling of urine, less urination, crying during micturition, stool with blood, and pain on pelvic region.

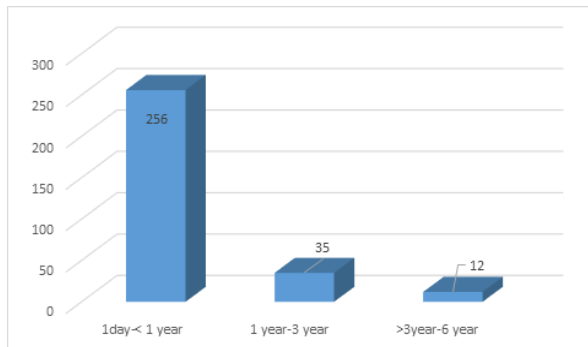


Figure 1: Age distribution of the respondents

DISCUSSION:

A variety of clinical diagnosis were found in abdominal cases but hydronephrosis is more common. In this study most of the cases are from neonates and infants cases, studies from other centres also found the same findings.⁵⁻⁷

The difference in age distribution may be explained by differences in their presentation. In the western world abdominal masses are diagnosed earlier than developing countries. In developing countries most of the cases with abdominal masses present in advanced stage when symptoms are significant.⁸ In the current study it was reported that male are more frequently affected than female. This findings are similar with many other researchers.^{4,9} However, Cano and Ruiz argued a female preponderance in their study.¹⁰

Some authors had reported malignant conditions accounting for about 40% of paediatric abdominal masses.³ whereas non-malignant lesions noted the majority (97.37%) in the present study. In another study, Nam and his team argued that majority of non-malignant conditions as the causes of abdominal masses.¹¹ Among the white people, neuroblastoma and nephroblastoma have been reported to be the most common malignant paediatric abdominal masses in most of the reports.^{3,9,10} In the current study majority of the cases found hydronephrosis and intussuception and hypertrophic pyloric stenosis.

Though some abdominal masses may be incidental findings in otherwise healthy children, many abdominal masses may be associated with symptoms such as vomiting, jaundice, pain, fever or those suggestive of bowel or genitourinary obstructions. The latter serve as important clinical pointers to possible clinical diagnosis. The clinical features associated with abdominal masses in the current study included abdominal distention, dribbling of urine, less frequency of urination and abdominal pain.

The patients were managed as indicated and the treatment offered included initial resuscitation, exploratory laparotomy and excisional or incisional biopsy as required, chemotherapy and radiotherapy when indicated.

CONCLUSIONS:

To know about the clinical presentation and aetiologies and the

mode of presentation of paediatric abdominal masses in our territory may enhance early diagnosis and prompt treatment.

REFERENCES:

1. Romano D, Laurence YC. Abdominal mass. In: American College of Surgeons. Surgery: Principles and Practices. 2nd edition. New York: WebMD Corporation; 2002: 241-250.
2. Punguyire D, Iserson KV. Case Report- Mesenteric dermoid cyst in a child. Pan African Medical Journal. 2011;10.
3. Golden CB, Feusner JH. Malignant abdominal masses in children: quick guide to evaluation and diagnosis. Pediatric Clinics of North America. 2002 Dec;49(6):1369-92.
4. Brodeur AE, Brodeur GM. Abdominal Masses in Children: Neuroblastoma, Wilms tumor, and Other. Pediatr Rev. 1991 Jan;12:196-206.
5. Cramer B, Pushpanathan C, Kennedy R. Nonrenal cystic masses in neonates and children. Canadian Association of Radiologists journal= Journal l'Association canadienne des radiologistes. 1993 Apr;44(2):93-8.
6. Schultz KA, Sencer SF, Messinger Y, Neglia JP, Steiner ME. Pediatric ovarian tumors: a review of 67 cases. Pediatric blood & cancer. 2005 Feb;44(2):167-73.
7. Horcher E, Helmer F. Benign and malignant intra-abdominal tumors in childhood. Wiener medizinische Wochenschrift (1946). 1986 May;136(10):253-7.
8. Osifo OD, Ebuomwan I, Efobi CA. Management of Childhood abdominal masses by Nigerian traditional doctors: A worrisome cause of delay in presentation. PAKISTAN JOURNAL OF MEDICAL SCIENCES. 2007 Oct 1;23(5):809.
9. Hanif G. Intra-abdominal tumors in children. J Coll Physicians Surg Pak 2004;14:478-480.
10. Muñoz IC, Pérez JA. Abdominal tumors in pediatric patients at Hospital San José, Tec de Monterrey: clinical and radiological correlations. In Anales de Radiología, México 2011 (Vol. 10, No. 4, pp. 274-295).
11. Nam SH, Kim DY, Kim SC, Kim IK. The surgical experience for retroperitoneal, mesenteric and omental cyst in children. Journal of the Korean Surgical Society. 2012 Aug 1;83(2):102-6.