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ORIGINAL RESEARCH

Evaluation of Children Presenting with Recurrent Abdominal Pain in Pediatrics OPD in a tertiary care hospital

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Abstract:

Background: Recurrent abdominal pain (RAP) is a common problem in pediatric patients. It is one of the commonest causes for OPD visits in pediatrics patients. It is defined as "at least three episodes of abdominal pain, severe enough to affect children activities over a period longer than three months". We evaluated the common causes of RAP in children visiting our OPD in this study.

Materials and methods- We conducted this study in the Department of pediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, over a period of 6 months from April 2023 to September 2023. All children between 2- 12 years of age presenting with pain abdomen in pediatric OPD were included in the study. Children having age < 2years, history of surgery or trauma and cases with acute gastroenteritis were excluded. Proper history was taken from each case followed by clinical examination and relevant investigations were done to find the cause of RAP.

Results – A total of 102 patients with RAP were included in the study. They were divided in two groups- 2 years to 6 years age group and 6-12 years age group. There were 62.74% males and 37.26% females. Organic RAP (ORAP) was seen in 68.6% patients while non organic RAP (NORAP) was seen in 31.4% cases. The most common cause of ORAP was Giardiasis (accounting for 20 %) followed by constipation and gall bladder stone. The most common predisposing factor for NORAP was school phobia.

Conclusion – As most cases of RAP are due to organic causes, proper evaluation with appropriate investigation is necessary for proper management of these cases. Those with NORAP may require psychiatric evaluation and behavioral therapy.

Keywords- Recurrent abdominal pain, Pediatrics, Organic, Non-organic

Introduction

Pain abdomen is a common complaint in the children visiting pediatric OPD. It is one of the commonest cause for school absenteeism. Pain abdomen is sometimes difficult to recognize in children especially in very young children and those with some form of developmental delay. It may even be over-diagnosed in these groups of children as it may be parent's interpretation

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of child's irritability. Pain abdomen may present as acute abdomen or may be chronic in nature. Acute pain abdomen may be disabling to the child and may require admission in hospital for work-up and management. Chronic pain abdomen may disturb the child routine activity and is one of the common cause of frequent hospital visit. Cause of pain abdomen in childhood may be benign such as functional abdominal pain or may be due to serious cause such as acute appendicitis. Cause of pain abdomen may be extra intestinal such as acute pancreatitis or even due to some extra abdominal cause such as lobar pneumonia. Some chronic forms of pain abdomen in children are very difficult to treat and cause anxiety in children and family members. Chronic abdominal pain refers to the pain that is either episodic or continuous and lasts for a period of at least 2 months [1]. In many cases a definite cause of chronic pain abdomen cannot be found. J Apley, a British pediatrician, studied abdominal pain among children extensively and observed that approximately 10% of school aged children get recurrent episodes of abdominal pain. He named this symptom complex as recurrent abdominal pain (RAP) syndrome and defined it as "at least three episodes of abdominal pain, severe enough to affect their activities over a period longer than three months"[2]. Term chronic pain abdomen is sometimes used in place of RAP[3]. We evaluated the common causes of RAP in children visiting our OPD in this study.

Objectives- We conducted this study to know the common causes and their prevalence in pediatric patients presenting with recurrent abdominal pain who visit OPD of our hospital.

Materials and methods- We conducted this study in the Department of pediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda which is a tertiary care centre in Bihar. This study was conducted over a period of 6 months from April 2023 to September 2023.

Inclusion criteria- all children between 2- 12 years of age presenting with pain abdomen in pediatric OPD.

Exclusion criteria- (1). Age < 2years, (2). History of surgery, (3). History of trauma (4). Acute gastroenteritis were also excluded.

We took careful history of every patient with special emphasis on growth and development, bowel habits and emotional components like stressful life events, school phobia, sibling rivalry, *etc*. followed by clinical examination including anthropometry and relevant investigations. Important investigations were complete blood count, liver function tests, kidney function tests, X- ray Abdomen, ultrasound abdomen, routine examination of urine and stool examination for ova, cysts and occult blood. Serum amylase and lipase were done if pancreatitis was suspected. Mantoux test and ESR were done for abdominal tuberculosis. Some children required CT scan of abdomen, endoscopy and colonoscopy and barium meal studies for diagnosis.

Results – A total of 102 patients were included in our study. Patients were divided in 2-6 years age group and >6-12 year age group for data analysis. Overall males were more commonly affected than females in our study with 64 males and 38 females. Maximum number of patients were seen in the 6 to 12 years age group (table 1).

Table 1: Age and sex distribution of patients with RAP

Age group	Male	Female	Total
Toddlers and pre school children (2year- 6 years)	24 (23.53%)	16 (15.69%)	40 (39.21%)

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School age children (>6years -12 years)	40 (39.21%)	22 (21.57%)	62 (60.78%)
Total	64 (62.74%)	38 (37.26%)	102

Causes of pain abdomen – every patient was evaluated clinically and appropriate tests were done as mentioned above to find out the cause of RAP in that case. An organic cause of the RAP was found in 70 patients (ie 68.6% cases). Those cases of RAP where an organic cause is found are collectively called organic RAP (ORAP) whereas those cases where we cannot find an organic cause of RAP is called non-organic RAP (NORAP). The most common cause of ORAP (Organic RAP) in our study was Giardiasis accounting for 20% of cases followed by constipation and gall stone. The organic causes of the RAP are listed in the table 2.

Table-2: Organic causes of RAP

Causes	2year- 6 years	>6years -12 years	Total (Percentage of ORAP)
Giardiasis	5	9	14 (20%)
Constipation	5	8	13 (18.57%)
Gall stone	4	8	12 (17.14%)
Worm infestation	6	2	8 (11.43%)
Urinary tract infection	3	4	7 (10%)
Abdominal tuberculosis	4	3	7 (10%)
Renal calculi	3	2	5 (7.14%)
Gastritis	0	3	3 (4.29%)
Chronic pancreatitis	0	1	1 (1.43%)
Total	30	40	70

We could not get any organic cause of recurrent pain abdomen in 32 children (i.e. 31.4%) and the cause for these patients were labeled as non-organic RAP (NORAP). NORAP was more common in 6-12 years age group than 2-6 years age group. Their incidence is given below in table 3.

Table 3 - incidence of Organic RAP (ORAP) vs Non-organic RAP (NORAP)

Type of RAP	Number of patients in 2 years- 6 years age group (percentage out of 40 cases)	Number of patients in >6 years-12 years age group (percentage out of 62 cases)	Total (percentage out of 102 cases)
Organic RAP (ORAP)	30 (75%)	40 (64.5%)	70 (68.6%)

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Non-organic RAP (NORAP)	10 (25%)	22 (35.5%)	32 (31.4%)
Total	40	62	102

NORAP was associated with some form of stressor in 20 children. Some children had more than one stressor. We could not find any stressor in 12 patients. Significant factors associated with NORAP in our study are given in table 4.

Table 4 – Factors associated with non-organic recurrent abdominal pain (NORAP)

Predisposing Factors (Multiple factors may be present in a single patient)	Number of Patients (total patients- 32)	percentage
School phobia	9	28.13%
Conflicts in family	5	15.63%
Sibling rivalry	5	15.63%
Sickness in other siblings	4	12.5%
Recent change in residence	2	6.25%

Many children with recurrent abdominal pain (RAP) presented with other different complains or symptoms in addition to pain abdomen such as nausea, vomiting, abdominal fullness, irregular bowel habits, burning micturition, weight loss, perianal itching etc. Nausea was the commonest associated complain in both ORAP and NORAP patients. Other presenting complains are shown in table 5.

Table 5: Presenting complains in addition to recurrent abdominal pain

Symptoms	Organic RAP	Non- organic RAP	Total
Nausea	18	7	25
Vomiting	5	1	6
Abdominal fullness	9	2	11
Irregular bowel movements/ constipation	9	0	9
Burning micturition	9	0	9
Perianal itching	8	1	9
Weight loss	4	0	4

Discussion

RAP is a relatively common problem in children. Apley and Naish suggested that organic pathology cannot be identified in 90% of children suffering from this problem(2). However new diagnostic methods have broadened the investigation of these children and many studies are reporting incidence of ORAP more than NORAP[4]. Similarly, in our study Organic RAP were common than NORAP.

Giardiasis was the commonest cause of RAP in our study across all the age groups. Buch et al (4) had also found Giardiasis as the commonest cause of RAP in their study, but it was more common in younger age group children. Presence of Giardiasis in older age group in our study

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may indicate overall poor hygiene maintenance as most of patients in our study were from lower socio-economical group.

Constipation was the second commonest cause of RAP in our study, but it was the presenting complain in only 9 children. On further clinical examination and X-ray and ultrasound abdomen, constipation was the cause of recurrent abdominal pain (RAP) in 13 patients. Eidlitz-Markus T et al [5] had observed occult constipation as the commonest cause of RAP in their study accounting for 42.6% (29 cases out of 68 patients).

Worm infestation was seen in 11.43% cases in our study. Most common worms were Ascariasis and pin worm. Saraswat S et al [6] observed worm infestation in 13.3 percent of patients in their study. Other important common causes of RAP in our study were gall bladder stone, urinary tract infection and abdominal tuberculosis. Different studies have also found these etiologies in their studies. [3,4,5,6]

Non-organic RAP (NORAP) was seen in 31.4% of patients in our study. It was more common in older age group patients. We found psychosocial stressors in 20 patients with NORAP. School phobia was the commonest predisposing factor of NORAP in our study which was seen in 28.13% cases with NORAP. Other factors were problem in family, sibling rivalry, sickness in sibling and recent change in place of residence. In addition other studies have noted increased frequency of eneuresis, anxiety disorders, anorexia and sleep disorders [4].

Conclusion

Our study showed that in most cases of RAP in pediatric patients organic causes can be found with the help of appropriate modern tests. Thus successful treatment of RAP is possible in these patients with ORAP. Treatment is difficult for patients with NORAP. Psychiatric evaluation and behavioral therapy holds role in their management and needs to be studied further. More studies are needed to emphasize the inclusion of psychiatric evaluation and behavioral therapy in every case of RAP for a timely and appropriate management.

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