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Chronic pain abdomen in children: A prospective clinical study

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Abstract

Introduction: Chronic pain abdomen in children is a common problem. Most of them believe chronic pain abdomen in functional and they could not find any metabolic, anatomic, infectious, inflammatory, or neoplastic disorders in huge majority of children. Chronic constipation is the cause of pain abdomen proposed by few.

Aims and Objectives: The present study is about chronic constipation is the most cause of chronic pain abdomen and is confirmed by the relief of chronic constipation and chronic pain abdomen in children after left lateral internal anal sphincterotomy.

Material and Methods: The present study was a prospective study of the patients who underwent left lateral internal anal sphincterotomy during 2 years study period. Patients who met the inclusion criteria are included in the study.

Results: In study of 23 children with CAP 56.5% are males and the remaining 43.5% are females. CAP is less than 1 year in 47.8% of these children and 87% children have CAP since 5 years. In our study of 23 children with CAP 18 children had fissure in ano, among them 44.44% are males and 55.55% are females. In our study of 23 children 12 children having abdominal tenderness among them 58.33% are males and 41.66% are females.

Conclusion: The study concludes that the most common cause of chronic pain abdomen in children is constipation secondary to painful anal problems and left lateral anal sphincterotomy is an effective procedure in relieving chronic pain abdomen in children by relieving constipation with low recurrence rates of pain abdomen.

Keywords: Chronic pain abdomen, children, left lateral internal anal sphincterotomy

Introduction

The Chronic abdominal pain in childhood is very common problem & remains one of ambiguity and concern for most medical professionals. CAP defined as abdominal pain of more than two weeks duration which can be persistent or recurrent [1]. Children with chronic abdominal pain (CAP) pose unique challenges in their Management. Recurrent abdominal pain is defined as pain occurring atleast three times over a period of 3 months with attacks severe enough to affect daily activities [2]. Although it is very common, the treating doctor usually attributes the cause to functional disorder rather than organic disease. The etio-pathology of CAP is still an unsettled area. Many experts believe that in most of the children, CAP is functional and they couldn't find anatomic, metabolic, infectious, inflammatory, or neo-plastic disorder in huge majority of these children. Recurrent abdominal pain as pain appearing atleast once a month in three consecutive months and the pain has an impact on the child's daily activities or wellbeing [3].

Functional abdominal pain is defined as abdominal pain without demonstrable evidence of pathological condition, such as an anatomic, metabolic, infectious, inflammatory, or neoplastic disorder [4]. FAP is characterized by episodic or continuous pain arising at least once per week for atleast 2 months [5]. CAP occurs in 9-15 % in all children and adolescents [7].

Chronic constipation as a cause of CAP in children has been proposed by few Author's, they have also reported relief of CAP in these patients after achieving daily colonic evacuation by High fiber diet and laxatives.

The present study is about chronic constipation as etiological factor in CAP in children. That, the constipation is an etiological factor, is confirmed, by relief of chronic constipation in these children after Left lateral internal anal sphincterotomy.

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Materials and Methods

The prospective study was carried out in the Department of General Surgery, Mamata General Hospital, khammam, Telangana from August 2021 to August 2023 with a total of 23 patients admitted to surgical ward. Study was approved by institutional ethics committee and written informed consent was obtained from all patients participating in the study.

Study population: patients came with complaint of chronic pain abdomen during the study period and subjected for abdominal examination, ano-rectal examination, investigations and who were positive included in the study.

Inclusion Criteria

- Children from 0-20 years
- Both males and females
- No organic cause of pain abdomen
- Pain abdomen for more than or equal to 6 weeks duration

Exclusion criteria

- 1) Children >20 years.
- 2) Known organic cause of pain abdomen.
- 3) Single episode of pain abdomen lasting less than 6 weeks.

Method of collection of data

We took detail history of chronic pain abdomen, the duration of symptoms, history of constipation and anal problems, examined the abdomen and anorectum (DRE). As many authors say extensive investigations are not useful in the management of children with chronic pain abdomen in our study we have advised essential laboratory investigations like hemoglobin, x ray erect abdomen, and USG abdomen and specific investigations where necessary. Later, on all these children LLIAS was performed and the course of CAP after the surgery is followed up.

Statistical Analysis: Data were collated and entered into specific software SPSS. A p-value of less than 0.05 was considered statistically significant.

Results

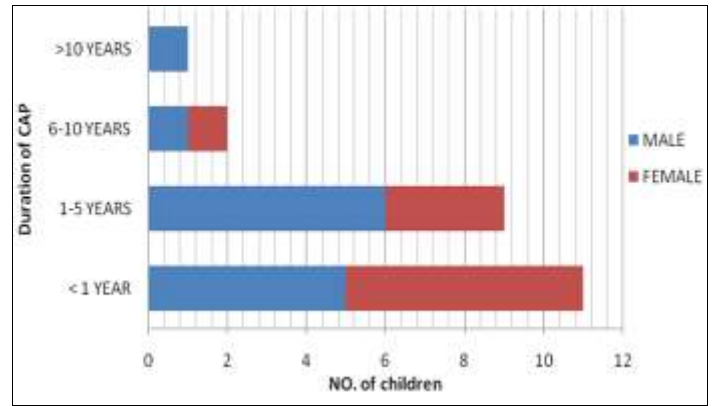
Table 1: Showing the duration of CAP in children in our study.

Duration	Male	Female	Total
< 1 Year	5	6	11
1-5 Years	6	3	9
6-10 Years	1	1	2
>10 Years	1	-	1
Total	13	10	23

Table no 1 shows that in our study, children’s complaining pain abdomen has different duration, from as short as less than 1 year to as long as greater than 10 years. The children with pain abdomen are more in less than 1 year duration group that is 11 out of 23 patients next being 9 out of 23 in 1-5 years duration Group.

Table 2: Showing the number of children and POD’s when CAP relieved completely.

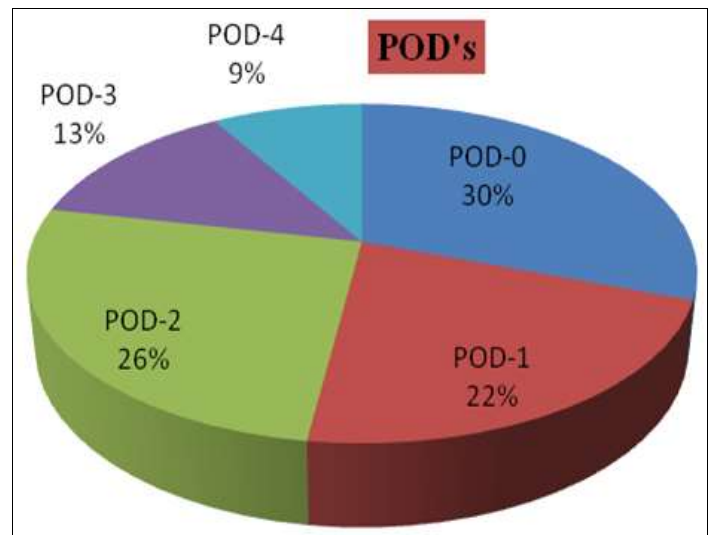
Pod	Children’s
0	7
1	5
2	6
3	3
4	2
Total	23



X-Axis-number of children, Y-Axis – Duration of CAP in children.

Graph 1: Showing the duration of CAP in children in our study.

Table 2 shows, all the 23 children in this study got complete relief of pain abdomen during Different POD’s after surgery. By 4th POD all the children are completely relieved of pain abdomen in the post-operative period.



Graph 2: Showing the proportions of POD’s when CAP relieved completely.

Table 3: Showing the number of children with CAP with constipation

Constipation	Males	Females	Total
Present	9	9	18
Absent	4	1	5
Total	13	10	23

Table-3: In our study out of 23 children had given history of constipation out of 18 males are 9 and females were 9.

Table 4: Showing the number of children having abdominal tenderness

Tenderness	Males	Females	Total
Present	7	5	12
Absent	6	5	11
Total	13	10	23

TABLE-4- shows that out of 23 children 12 children(7 males +5 females) had tenderness per abdomen on palpation. Tenderness can be generalized or localized and on palpation per abdomen was soft

Table 5: Showing various sites of abdominal tenderness

Site	Male	Female	Total
Rif	3	2	5
Epigastrium	1	0	1
Ruq	1	1	2
Umbilical	2	0	2
Generalized	0	2	2
Total	7	5	12

TABLE-5 shows that 12 out of 23 children having abdominal tenderness. Among 12 patients tenderness is more common in RIF 5 out of 12 patients Tenderness can be generalized to localized to RIF, Epigastrium, Umbilical etc., For 11 children (6 males + 5 females) on palpation per abdomen was SOF.

Table 6: Showing number of children with CAP having fissure in ANO

Fissure	Males	Females	Total
Anterior (12 O)	3	2	5
Posterior (6 O)	5	5	10
Both	0	3	3
Total	8	10	18

TABLE-6- shows in our study 18 (8 males + 10 females) out of 23 had fissure on per rectal examination. 10 (5 males + 5 females) children have fissure in posterior midline and 5(3 males +2 females) children have fissure in anterior midline and remaining 3 females have fissures in both anterior and posterior midline. In our study all 10 females having fissures in ANO.



Fig 1: Showing the pearly white internal anal sphincter



Fig 2: Showing post LLIAS defect of internal sphincter



Fig 3, 4: Both figure 3 and figure 4 showing x-ray erect abdomen with loaded colon

Discussion

CAP in children is common problem in our country. In our study we have concentrated on thorough clinical examination of abdomen and ano-rectum. The results of the study also prove that most of the children with CAP have anal problems. Most of the studies show that females are more affected than males (3:1). But in our study males are more than females (13Vs10). Alan M. Lake study mention that CAP has two distinct age frequencies one from 5-7 years of age and other from 8-12 years (1). Similarly MY Berger *et al.* mention two peaks first from 4-6 years, second at 7-12 years [3]. CAP leads to school absenteeism, sleep disturbances and inactivity [8]. CAP accounts to more than 50% visit to pediatric specialty hospitals. In our study most of the children have CAP since 5 years. But history of constipation is difficult to elicit from parents due to fact that most of the people in our society doesn't know the normal bowel habits pattern. In our study we ask the patient about frequency, pain during defecation, duration of defecation and bleeding during defecation. 33% of children with constipation have pain abdomen. In our study 78.3% of children with CAP have constipation on clinical examination the presence of abdominal tenderness on palpation has been reported to be characteristic of children with CAP without evidence of any organic cause. IF tenderness is common in males and females. Other sites include epigastria, right upper quadrant, and umbilical and generalized abdomen. All these tenderness decrease completely after LLIAS and after passing large volume stools and flatus.

In our study is of opinion that presence of abdominal tenderness need not signify any intra-abdominal pathology always. Most of the studies mention that CAP in children is functional. 70% of CAP is due to functional cause and 30% has organic cause. It has neither concluded that children with functional CAP have normal bowel habits and normal DRE findings. 8 in 10 children have fissure in ANO, posterior midline fissure being more common. Loaded rectum is seen in 2/3rd children with CAP. All female children in the study have fissure in ANO. The diagnosis of constipation is based on DRE findings and x-ray erect abdomen findings. 2/3rd of children with CAP have loaded colon finding in x-ray erect abdomen which was disappeared after LLIAS in post-operative period.

CAP who has sonological abnormality is not fitting in to the radiological diagnosis in turn this fact is proven by relief of CAP in these children after lias, which will not disappear in the children who really have radiological abnormality. Our aim of relating CAP relief in children with LLIAS is based on the fact

that the common cause of CAP in children is constipation and constipation in children is relieved by relaxing internal anal sphincter by LLIAS in study is justified. All the children in our study have complete immediate relief of CAP by POD-4 by passing large volume of stools and flatus after LLIAS. These children are followed up for a period of 2 years and >2/3rd children got complete relief of CAP. This fact is again proved right by the fact that 13% of children in our study has undergone appendectomy for CAP outside, but still has no relief of symptoms then children got relief of CAP after LLIAS. Most of the children with CAP are misdiagnosed as acute appendicitis. Hence further studies must be carried out on CAP in children due to constipation secondary to anorectal causes and its relief after LLIAS. If these studies are carried out in future then most of the diagnosis of functional abdominal pain can be attributed to constipation secondary to ANO rectal pathology.

This study concludes that most common cause of Chronic Pain Abdomen in children is constipation secondary to painful anal problems and Left lateral internal anal sphincterotomy is an effective procedure in relieving Chronic Pain Abdomen in children by relieving constipation with low recurrence rates of pain abdomen.

Conflict of Interest

Not available

Financial Support

Not available

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