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Original Research Article

Study profile of recurrent pain abdomen in children examined by ultrasonography

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ABSTRACT

Background: Abdominal pain is a frequent condition in children, pain localization in younger children is poor, and in a suffering child, physical examination is often limited, thus, sonographic evaluation of the abdomen is frequently performed in children to investigate the reason for the pain and to exclude other acute abdominal surgical conditions. With the routine use of high-frequency transducers, detection of enlarged abdominal lymph nodes (EALNs) is very common.
Methods: After approval from ethical committee 50 patients within age range from 1 to 16 years attending paediatric department at BLDE Shri BM Patil medical college hospital Bijapur, Karnataka, India from January 2014 to December 2014 presenting with abdominal pain of various etiological causes subjected to ultrasonographic examination were included in this study.
Results: Maximum numbers (46%) of patients are from 5-8 years age group, more number of boys (54%) is affected as compared with the girls. Maximum (62%) patients had total of 1-5 episodes and next infrequency are patients of multiple episodes, 30 % of patients had school loss due to pain abdomen. Right lower quadrant of the abdomen was most commonly affected (30%) followed by left lower (24%) and para-aortic (16%).
Conclusions: We can conclude that -EALNs are frequently seen children with pain abdomen 5- 8 yrs with girls more commonly affected than boys. Most paeirnts presented with 1-5 episodes, 30 % of patients had school loss due to pain abdomen. Right lower quadrant of the abdomen was most commonly affected (30%) followed by left lower (24%) and para-aortic (16%).

Keywords: Abdominal pain, Enlarged abdominal lymphnodes, School loss, Ultrasonography

INTRODUCTION

Abdominal pain is a frequent condition in children. Pain localization in younger children is poor, and in a suffering child, physical examination is often limited. Thus, sonographic evaluation of the abdomen is frequently performed in children to investigate the reason for the pain and to exclude other acute abdominal surgical conditions.[1] The main clinical concerns are acute appendicitis, intussusception, and torsion of the ovary. With the routine use of high-frequency transducers, detection of enlarged abdominal lymph nodes (EALNs) is very common. When enlarged nodes are found with no other abnormality detected, the term "mesenteric lymphadenitis" is often used to describe an inflammatory process of abdominal lymph nodes. However, there is some disagreement in the medical literature about the importance of finding EALNs and use of the term "mesenteric adenitis." In the pediatric literature, the term is reserved for specific inflammation of the mesenteric lymph nodes, caused by Yersinia, Staphylococcus, Salmonella, different types of mycobacteria, and viruses.[2-4] In the radiologic literature, the term is mainly applied simply to describe lymph nodes greater than 5

mm in diameter.[5-7] This prospective study was performed to evaluate the importance of detection of EALNs in children with abdominal pain.

METHODS

After approval from ethical committee 50 patients within age range from 1 to 16 years attending paediatric department at BLDE Shri BM Patil medical college hospital Bijapur, Karnataka, India from January 2014 to December 2014 presenting with abdominal pain of various etiological causes subjected to ultrasonographic examination were included in this study. Patient's demographic profile, clinical features and ultrasonography of abdomen were evaluated. Final diagnosis was established and patients were followed in OPD. All lymph nodes were valuated and measured in transverse and anterio-posterior dimensions. Lymph nodes of size, situation etc. were documented. Other relevant findings such as free fluid and positive probe tenderness were also recorded.

RESULTS

Table 1: Age distribution.

Age group	Number	Percentage
1-4	11	22
5-8	23	46
9-12	10	20
13-16	6	12
Total	50	100

From the above Table it can be seen that maximum number (46%) of patients are from 5-8 years age group and incidence decrease as the age advance and only 12% are affected after the age of 13 years.

Table 2: Gender distribution.

Gender	Number	Percentage
Boys	27	54.0
Girls	23	46.0
Total	50	100.0

More number of boys (54%) is affected as compared with the girls (Table 2).

Table 3: Distribution of subjects according to number of episodes.

Episodes	Number	Percentage
1-5	31	62.0
6-10	7	14.0
11-15	2	4.0
Multiple	10	20.0
Total	50	100.0

From the Table 3, it can be perceived that- maximum (62%) patients had total of 1-5 episodes and next infrequency are patients of multiple episodes.

Table 4: Distribution of subjects according to duration of episodes.

Duration of episodes (minutes)	Number	Percentage
1-10	14	28.0
11-20	11	22.0
21-30	12	24.0
>30	13	26.0
Total	50	100.0

Patients had symptoms lasting from 1-10 minutes to more than 30 minutes (Table 4).

Table 5: Distribution of subjects according to school loss.

School loss	Number	Percentage
No	35	70.0
Yes	15	30.0
Total	50	100.0

30 % of patients had school loss due to pain abdomen (Table 5).

Table 6: Distribution according to quadrant involved.

Quadrant	Number	Percentage
Left-Lower	12	24.0
Right-Lower	15	30.0
Para-aortic	8	16.0

Right lower quadrant of the abdomen was most commonly affected (30%) followed by left lower (24%) and para-aortic (16%).

DISCUSSION

In 1921 Mesenteric adenitis was first reported by Brennemann, also known as Brennemann syndrome. The disease is primarily associated with acute appendicitis, intussusception and lymphoma. In the first decade of life mesenteric adenitis is more common than appendicitis in view of proliferative response of bodily lymphoid tissue. After first decade the condition is relatively uncommon and rarely seen in second decade. In children, simple or nonspecific mesenteric adenitis often viral in origin is the most frequently encountered entity responsible for a large percentage of the cases of 'medical bellyache' seen in routine practice.[8]

It's observed that same etiological agent which causes swelling of the lymphoid tissue of Peyers patches can act as etiological factor for mesenteric adenitis induced intussusception in children. Mesenteric nodes can be

enlarged because of adenoviral infections, crohns disease, appendicitis, gastroenteritis; yersinia infections, AIDS, or it can be due to incidental finding in asymptomatic children.[1] Clinically the various clinical features suggestive of nonspecific mesenteric adenitis are clean tongue, deep tenderness in right iliac fossa radiating towards the umbilicus, the absence of rigidity and palpable glands.[9]

In our study peak incidence in patients was seen between 5 years to 8 years (46%), and thereafter there was a decrease in incidence. This finding is similar to study by Roshani chanchlani.[10]

In present study male children were more affected than female; this is in agreement with findings of Roshani et al.[10,11]

Regarding size, number and location of enlarged mesenteric nodes, present study findings correlate with findings of Aired I et al.[11,12] Regarding duration of episodes and frequency of episodes there is no published literature available for comparison but from present study, it was concluded from findings that- most patients had symptoms lasting from 1-10 minutes, 30 % of patients suffered school loss due to pain abdomen.

CONCLUSION

This study was performed to evaluate the importance of detection of EALNs in children with abdominal pain using USG. We can conclude that -EALNs are frequently seen children with pain abdomen 5-8 years with girls more commonly affected than boys. Most patients presented with 1-5 episodes, 30 % of patients had school loss due to pain abdomen. Right lower quadrant of the abdomen was most commonly affected (30%) followed by left lower (24%) and para-aortic (16%).

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