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Research Article

Clinical profile and causes of mesenteric lymphadenitis in children

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ABSTRACT

Background: The aim was to study the clinical profile and causes of mesenteric lymphadenitis in children. The cases were selected from out patients and in patients admitted in various units of pediatric ward in velammal medical college hospital, Madurai over a period of 20 months from Nov 2013-June 2015.
Methods: This is a prospective observational study. A total 129 children who were clinically suspected to have mesenteric lymphadenitis during the study period under went abdominal ultrasonography. Out of which only 57 patients who fulfilled the inclusion criteria were studied. The clinical profile and causes of these cases were correlated and evaluated.
Results: It was found that 10.5% of cases presented as acute abdomen. Pain abdomen was the common complaint in 59.6% of cases, cough /cold in 36.8%, loose stools in 28%, while in the rest of the cases fever , nausea, vomiting were seen. The commonest cause of mesenteric lymphadenitis was found to be respiratory tract infection in 36.8% of patients followed by diarrhea 28%, urinary tract infection 12.2%, worm infestations 10.5%, enteric fever 7%, gastritis 5.2%.
Conclusions: The importance of mesenteric lymphadenitis lies in its differential diagnosis in cases of acute abdomen. Since correct diagnosis can avoid unnecessary surgical intervention.

Keywords: Mesenteric lymphadenitis, Clinical profile, Causes, Ultrasonography

INTRODUCTION

Acute mesenteric lymphadenitis is a well - defined entity about which, much has been written in the medical literature. Its exact etiology and pathogenesis, remains obscure. Wilensry and Hahn described the mesenteric lymphatic system and stated that the mesenteric lymph nodes had the same functional relationship to payer's patches of the ileum, as the cervical lymph nodes have to the tonsil and adenoidal tissue of the nose and throat.[1] The lymphadenopathy was commonly thought to be caused by the tubercle bacillus, although many cases revealed only moderate enlargement of the lymph nodes with no matting, caseation, suppuration or calcification. With development of mantoux test and improvement in culture methods, there accumulated cases with negative tuberculin reactions, having pyogenic organisms in enlarged nodes.[2] Brenneman pointed out the association of abdominal pain with upper respiratory tract infections in children.[3] Goldberg and Nathanson presented an excellent study of this condition. 19 cases tabulated and 16 were operated. They directed attention to the high incidence of sore throat in these patients. In case of doubt, exploratory laparotomy was urged as the rational treatment.[4]

Until recently, the diagnosis was most frequently made when laparoscopy was performed to assess presumed appendicitis. Presently imaging is routinely applied in the examination of children to make a possible diagnosis. The normal mesenteric lymph nodes vary in size, but in general, the short-axis diameter is 4mm or shorter.[5] Mesenteric lymphadenitis often is associated with adenoviral infection.[6] Sonography is widely used in paediatric patients to identify the cause of abdominal pain. It is fast, non-invasive and effective method to exclude most causes of abdominal pain that require immediate intervention. The diagnosis of lymph node

abnormality usually relies on size criteria.[7] The distribution of the mesenteric lymphadenopathy may indicate the exact nature of underlying disease process.[8] Mesenteric lymph nodes were considered to be enlarged, when their short-axis was 8mm or more.[9]

In most cases of mesenteric lymph adenitis reported in Europe and Australia since 1954, enlarged lymph nodes were present in the ileocaecal region.[10] In children with acute abdominal pain due to causes such as appendicitis, which cannot be confirmed by ultrasound, findings consisting of only enlarged mesenteric lymph nodes, the probable diagnosis would be mesenteric adenitis.[11]

METHODS

Cases were taken from both outpatients and inpatients in the Department of paediatrics, Velammal medical college hospital, Madurai. It was a prospective observational study conducted over a period of 20 months from November 2013 to June 2015. An informed consent was taken from all the patients included in this study. A total of 129 patients who were clinically suspected to have mesenteric lymphadenitis, during the study period underwent abdominal ultrasonography. Out of the total 129 cases only 57 cases who met the inclusion criteria and were selected and evaluated. The remaining 72 cases did not fulfill the inclusion criteria, and were excluded.

Inclusion criteria

1. Patients both male and female above 1 year and below the age of 15.
2. Patients clinically suspected to have mesenteric lymphadenitis, confirmed by ultrasonography. The short axis diameter of the mesenteric lymph node being 10mm or more.

Exclusion criteria

1. Patients below the age of l yr and above 15 yrs.
2. Clinically suspected cases of mesenteric lymphadenitis and ultrasound findings of mesenteric lymph node with short axis diameter of less than 10mm.

All the patients included in this study were assessed by history and clinical examination, followed by routine stool, urine and blood investigations. Urine culture and sensitivity, chest radiographs were done according to case merit. Treatment and observations were done and follow up visits arranged on response basis.

RESULTS

Our study showed that the patients were more often males 75.4%, than female 24.5% (Table 1).

Table 1: Gender of the patients affected in mesenteric lymphadenitis.

Sr. No.	Sex	Number	%
1.	Male	43	75.4%
2.	Female	14	24.5%

According to Table 1, it was found that the patients affected were more often males (75.4%) than females (24.5%).

It was seen that in our study that the peak incidence of mesenteric lymphadenitis being 5 to 10 yrs of age, followed by 10 to 15 yrs of age (Table 2).

Table 2: Age group of the patients.

Sr. No.	Age in years	Numbers	%
1.	1-5	9	15.7%
2.	5-10	37	64.9%
3.	10-15	11	19.2%

Table 2 shows that the most common age group affected is 5 to 10 years of age (64.9%), followed by 10 to 15 years (19.2%), and 1 to 5 years (15.7%).

Our study showed that 6 cases of mesenteric lymphadenitis presented as acute abdomen (Table 3).

Table 3: Mode of presentation.

Sr. No.	Presentation	Number	%
1.	Acute	6	10.5%
2.	Chronic	51	89.4%

In our study, it was found that pain abdomen was the most common complaint seen in 59.6% of children with mesenteric lymphadenitis, it was seen either as an isolated symptom (5 cases) or in combination with other symptoms (29 cases), followed by cough/cold 36.8%, loose stools in 28%, nausea, vomiting and fever (Table 4).

Table 4: clinical profile of cases of mesenteric lymphadenitis.

Sr. No	Symptoms	Number	%
1.	Pain abdomen (as isolated symptom & in combination with other symptoms)	34	59.6%
2.	Cough/cold	21	36.8%
3.	Loose stools	16	28..0%
4.	Vomiting	7	12.2%
5.	Nausea	5	8.7%
6.	Fever	4	7.0%

It is seen that the commonest cause of mesenteric lymphadenitis is respiratory tract infection seen in 36.8% of cases, followed by diarrhea in 28% of cases, urinary tract infections in 12.2%, worm infestations in 10.5%, followed by enteric fever and gastritis (Table 5).

Table 5: Causes of mesenteric lymphadenitis in children.

Sr. No.	Causes	Number	%
1.	Respiratory tract infection	21	36.8%
2.	Diarrhea	16	28.0%
3.	Urinary tract infection	7	12.2%
4.	Worm infestations	6	10.5%
5.	Enteric fever	4	7.0%
6.	Gastritis	3	5.2%

DISCUSSION

Our study has shown that affected patients were more often males 75.4% than females 24.5%. Aird I has also shown a similar results, with males being affected more often than females.[12] In a study conducted by Sikorska et al, it was seen that out of 127 children, 78 were males and 49 were females.[14] It was seen that the peak incidence of mesenteric lymphadenitis was 5 to 10 years of age, according to our study. Gorden et al has mentioned that acute mesenteric lymphadenitis occurs most commonly between 3 to 15 years of age.[13] Sikorsha et al has shown that the peak incidence of mesenteric lymphadenitis being 9 years of age.[14] It was found that in our study 6 cases presented as acute abdomen, resembling surgical condition. William, et al has reported 13 cases of mesenteric lymphadenitis presenting as acute abdomen out of which 8 cases were operated, in the remaining 5 cases, a presumptive diagnosis of mesenteric lymphadenitis was made in view of previous experience.[2]

It was analyzed that pain abdomen was the most common complaint in children 59.6% of cases with mesenteric lymphadenitis in our study, followed by cough/cold, loose stools, vomiting, nausea and fever. Sikorska et al has showed that pain abdomen was seen in 49.6% of cases, 6.3% presented as generalized lymphadenopathy, rest as vomiting and fever.[14] Shakya et al has found that mesenteric lymphadenitis was the cause of pain abdomen in 5.1% of children, presenting with abdominal pain.[15] McFadden has noted that nausea and vomiting was seen in 71% of cases.[16] It was seen that in our study the commonest cause of mesenteric lymphadenitis is respiratory tract infection in 36.8% of cases, diarrhea in 28% of cases, followed by urinary tract infection, worm infestations, gastritis and enteric fever. Sikorsha et al has found that the most common cause of mesenteric lymphadenitis was acute diarrhea in 15.7% of cases followed by respiratory tract infection in 14.9% of cases followed by gastritis, colitis.

CONCLUSION

Enlarged mesenteric lymph nodes are more common in males than females, with a peak incidence of 5 to 10 yrs. It commonly presents as pain abdomen of chronic duration. The most common cause being respiratory tract infection and diarrhea. It is important to recognize acute mesenteric lymphadenitis as a clinical entity in cases presenting as acute abdomen since it can simulate appendicitis, so that unwanted surgical intervention in children can be avoided.[16]

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