

Mesenteric Lymphadenitis in Children: Single Centre Study in a Rural Hospital

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Abstract:

Background: Mesenteric lymphadenitis is a well recognised entity that is often misdiagnosed as acute appendicitis in children. It presents with right lower quadrant pain and fever. Ultrasonography is the main modality used to diagnose this condition apart from a strong clinical suspicion.

Aim: The aim was to study the clinical profile. evaluate the etiology and management outcomes of mesenteric lymphadenitis in children.

Material and methods: This is a prospective study done on hundred children who attended the paediatric medical and paediatric surgical OPD's of MMIMSR (Maharishi Markandeshwar University of Medical Sciences And Research), Mullana, Ambala over a period of 24 months from August 2014 to August 2016. Enlarged lymph nodes more than 10mm, their size and location were recorded. Only 60 children who fulfilled the inclusion criteria of having mesenteric lymphadenitis of short axis diameter more than 10mm were studied and their clinical profiles and management outcomes were evaluated.

Results:All patients were between 1 and 15 years of age (Average age was 8 years). A total of 60 patients were included in the study. 75% of the patients (n=45) were males and 25% (n=15) were females. Pain with tenderness in right iliac fossa was the most common

presenting feature in all patients accounting for 100% (n=60) cases followed by cold and cough in 33.3% (n=20) cases, diarrhoea in 16.6% (n=10) cases, vomiting and fever in 8.3% (n=5) cases. The commonest cause of mesenteric lymphadenitis was found to be idiopathic in 41.7%, upper respiratory tract infection in 25%, diarrhoea in 16.7%, urinary tract infection in 8.3%, worm infestation in 5% and enteric fever in 3.3% patients. Most of the patients (63.3%) improved spontaneously without using antibiotics.

Conclusion: Enlarged mesenteric lymph nodes cause abdominal pain in children. This entity has to be kept in mind as a differential diagnosis in any child who presents with pain abdomen. It is a self limiting disease and ultrasound is the diagnostic tool. A correct diagnosis can avoid unnecessary surgical intervention and majority of cases resolve with conservative treatment

Keywords: Mesenteric; lymph nodes; pain abdomen, ultrasonography

Introduction: Mesenteric lymphadenitis usually presents with fever and right iliac fossa pain ^[1]. It is commonly misdiagnosed as acute appendicitis due to right iliac fossa ^[2]. Up to 20% of patients undergoing appendicectomy have been found to have non specific mesenteric lymphadenitis ^[3]. Majority of times, the etiology remains unknown. It has been found to be associated with Yersinia infection in western countries. Brennenman pointed out the association of

abdominal pain with upper respiratory tract infection in children^[4]. It is a self limiting inflammatory process frequently caused by viral pathogens mainly Adeno virus, Epstein Barr virus and Parvo virus B19 ^[5, 6]. This disease is never fatal but may be recurrent.

Sonography is widely used in paediatric patients to identify the cause of abdominal pain. It is fast, non invasive, economic and an effective method to exclude most cases of abdominal pain

that require immediate intervention. The diagnosis of lymph node abnormality relies on size criteria [7]. The distribution of mesenteric lymphadenitis may indicate the exact nature of underlying disease process [8]. Mesenteric lymph nodes were considered enlarged when their short axis diameter was $> 9\text{mm}$. [9]. In children with acute abdominal pain due to appendicitis not confirmed by ultrasound, the presence of enlarged mesenteric lymphadenitis would be the probable diagnosis [10].

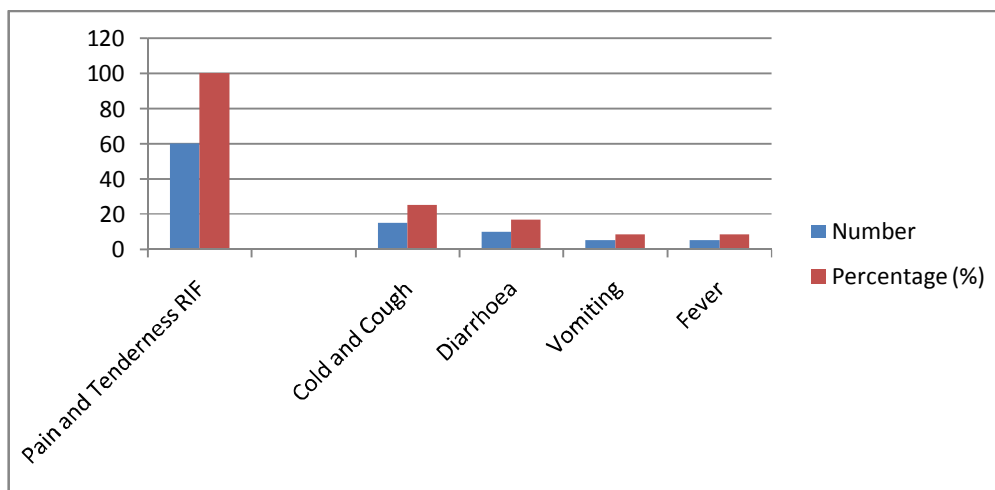
Methodology: A total of 100 patients within the age range of 1 to 15 years attending the paediatric medical and surgical OPD's from August 2014 to August 2016 with abdominal pain due to various causes were assessed and were subjected to ultrasound examination. 60 children were included in our study. The inclusion criterion was mesenteric lymph node enlargement more than 10mm in short axis diameter. Other relevant

features like free fluid and positive probe tenderness were also evaluated.

All patients were assessed by history, clinical examination followed by routine blood and stool tests. Chest X-ray and urine culture and sensitivity were done on case basis. All children were managed conservatively and patients were followed on OPD basis.

Results: The patients were categorized into three age groups. Maximum incidence was found in the age group of 6-10 years which accounted for 60% (n=36) cases. Our study showed that 75% patients were males (n=45) and 25% patients (n=15) were females. In our study it was found that pain abdomen with right iliac fossa tenderness was present in 100% (n=60) patients. It was present alone or in association with other symptoms like cold and cough (25%), diarrhoea (16.6%), vomiting and fever (8.3%) each.

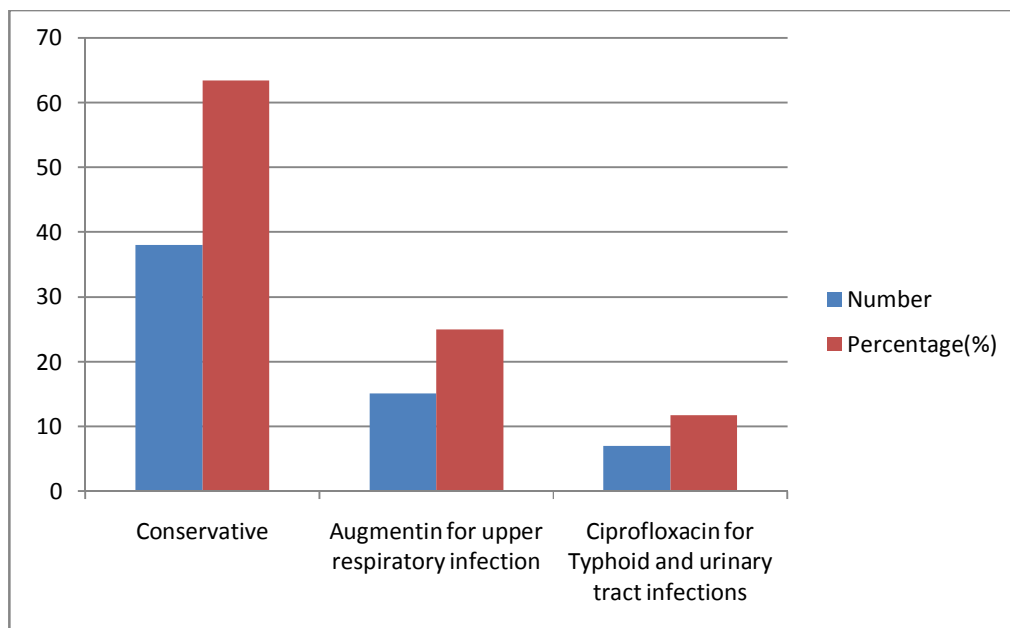
Figure-1



In our study it has been found that among the various causes of mesenteric lymphadenitis, Idiopathic cause had the highest incidence of 41.7% (n=25) followed by upper respiratory tract infection in 25%, (n=15) diarrhoea in 16.7% (n=10), urinary tract infection in 8.3% (n=5), worm infestation in 5% (n=3) and enteric fever in 3.3% (n=2) patients. On ultrasonography, maximum number of lymph nodes were seen in right iliac fossa accounting for 70% (n=42) followed by left iliac fossa. The short axis diameter of lymph nodes were not more than 10mm. Probe tenderness was seen in 5% of patients and minimal interloop fluid in 4% of patients.63.3%

(n=38) patients recovered on conservative symptomatic treatment and did not require any antibiotics. Antibiotics were given for children with severe upper respiratory infection, enteric fever and culture positive urinary tract infections.

Figure-2



Discussion: Mesenteric lymphadenitis is the most common condition that affects children and mimics acute appendicitis [2]. It was first reported by Brenneman in 1921 and is also called as Brenneman syndrome. It is commonly associated with various pathological conditions like acute appendicitis, intussusception and lymphoma [11]. In 1926, Wilensky and Hahn classified mesenteric lymphadenitis into three types namely simple, suppurative and tuberculosis [13]. Patients of mesenteric lymphadenitis have

symptoms clinically indistinguishable from acute appendicitis [14]. The clinical findings more suggestive of non specific mesenteric lymphadenitis are a clear tongue, absence of rigidity in right iliac fossa and palpable glands on deep palpation. Pain shifting to left side when patient turns to left and vomitings also point to a diagnosis of mesenteric lymphadenitis. Sikorsha et al have found the common causes of non specific mesenteric lymphadenitis to be acute diarrhoea in 15.7% and upper respiratory

tract infections in 14.5%^[15]. In our study, the commonest cause was idiopathic.

Ultrasound evaluation using graded compression has been reported as a diagnostic tool for enlarged mesenteric lymph nodes^[16]. A negative ultrasound does not rule out this diagnosis. A study done by Sivit CJ et al showed that mesenteric lymphnodes were detected in 14% of symptomatic children, but enlarged nodes in children with acute pain represents a non specific finding.^[17] Mesenteric lymphadenitis is a self limiting disease and antibiotics are not needed unless patients are severely ill and show signs of septicaemia. In our study also 63.3% of patients resolved on conservative treatment. Antibiotics were only given for severe upper respiratory tract infection, enteric fever and culture positive urinary tract infection patients.

Conclusion: Mesenteric lymphadenitis is a common self limiting inflammatory process frequently caused by viral

pathogens. This entity has never been proved to be a cause of mortality. It improves spontaneously unless specific anti microbial agents are indicated by microbiological tests such as typhoid, tuberculosis etc. It can simulate acute appendicitis. Ultrasound is a diagnostic tool and unwanted surgical intervention in children can be avoided.

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