

The Clinical Presentation and Outcome of Infants with Nodular Lymphoid Hyperplasia: Experience with 34 Cases from Southern Iran

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Abstract

Background: Rectal bleeding is a relatively uncommon, but potentially important problem in early infancy. The common causes of fresh rectal bleeding in this age group are: bleeding diathesis (vit. K deficiency), infectious colitis, cow's milk protein allergy and anal fissure. Nodular lymphoid hyperplasia (NLH) is another cause of prolonged fresh rectal bleeding in early infancy. The aim of this prospective study was to evaluate the clinical presentation and outcome of infants with fresh rectal bleeding and final diagnosis of NLH.

Methods: During a period of 3 years, from Sept. 1999 to Sept. 2002, 34 consecutive infants with prolonged fresh rectal bleeding were diagnosed as NLH and followed in our center.

Results: There were 18 boys and 16 girls. The mean age of onset of rectal bleeding was 1.82 months and the mean age of diagnosis 4.25 months. None of the cases had any signs or symptoms of underlying systemic diseases. All cases showed resolution of bleeding and dramatic response to exclusion of cow's milk and its by-products from mothers' diet or replacement of babies' formula with hypoallergenic substitutes. By the age of one year all cases tolerated regular, unrestricted diets without recurrence of bleeding.

Conclusion: NLH is an important cause of prolonged fresh rectal bleeding in early infancy. The disease is limited to rectosigmoid area in otherwise healthy infants without underlying disease. Excluding cow's milk from mother's diet or changing of the infants' formula to hypoallergenic types is the best way of treatment. The long term prognosis of infants with NLH is excellent.

Iran J Med Sci 2003; 28(4):176-179.

Keywords • Fresh rectal bleeding • Infants • nodular lymphoid hyperplasia

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Introduction

Fresh Rectal bleeding is a relatively uncommon but potentially important problem in early infancy.¹ The common causes of fresh rectal bleeding in this age group are bleeding diathesis

Infants with nodular lymphoid hyperplasia

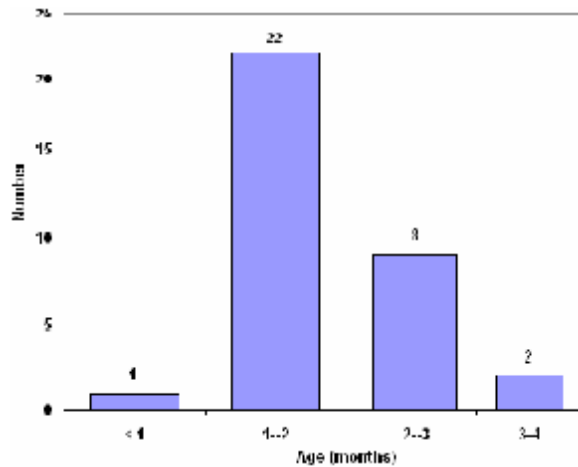


Fig 1: Age of onset of rectal bleeding in infants with NLH

secondary to the vit. K deficiency, infectious colitis, cow's milk protein allergy and anal fissure.¹⁻⁴ NLH can also lead to prolonged, intermittent fresh rectal bleeding from early infancy.⁵⁻⁸

The aim of this study was to evaluate the clinical presentations and outcome of infants with NLH and fresh rectal bleeding.

Patients and Methods

This prospective study was carried out during a period of 3 years, from Sept. 1999 to Sept. 2002 in 34 consecutive infants (18 boys, 16 girls) with prolonged fresh rectal bleeding and final diagnosis of NLH. All cases had prolonged, intermittent fresh blood in stools. They were otherwise healthy with normal growth and physical examinations. None had any evidence of bleeding diathesis, significant anemia, bacterial or parasitic infection, significant diarrhea or any other systemic diseases. Thirty cases (88%) were exclusively breast-fed (EBF). Most of the patients, with impression of bacterial colitis, were previously treated frequently with antibiotics without improvement. All patients underwent rectosigmoidoscopy by a pediatric gastroenterologist (author) and biopsy was obtained from all cases, which were examined by an experienced pathologist.

All patients had CBC, PT, PTT and stool examination for blood, pus cells and parasite together with stool culture and serum immunoglobulin analysis. The mothers of breast-fed infants were advised to refrain from consumption of cow's milk and its products and formula-fed infants were placed on hypoallergenic types. Patients were followed in pediatric gastroenterology clinic at least up to the age of 18 months. In 18 cases follow-up rectosigmoidoscopy was performed between 16 and 20

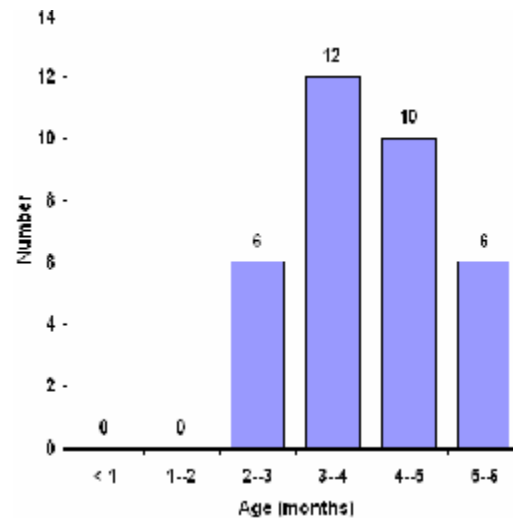


Fig2: Age of diagnosis of infants with NLH

months of age, while maintaining regular, unrestricted diets over the previous several months.

Results

The age of onset of rectal bleeding and final diagnosis of the patients are shown in Figs. 1 and 2. There were no significant sex differences in this series. All infants were healthy, without symptoms or signs of significant underlying systemic disease. Most of them (88%) were EBF. In all cases the laboratory work-up including CBC, PT, PTT, and serum immunoglobulin levels were within normal ranges and none had significant eosinophil in peripheral blood or mucosal biopsy.

Stool examinations frequently revealed pus cells and red blood cells, but all cultures were negative. All patients had typical nodular changes in rectosigmoid area on gross examination (Figs 3&4) which were confirmed by histologic evaluation.

Most cases had rapid resolution of frank rectal bleeding, usually within one week, after modification of their mother's dietary regimen or changing of infants' formula. At one year of age all infants tolerated an unrestricted diet without evidence of rectal bleeding. The follow-up rectosigmoid study in all 18 studied cases were completely normal at the ages of 16-20 months, prior to which they were on regular, unrestricted diets.

Discussion

In the majority of our patients rectal bleeding started before 2 months of age while final diagnosis was made after a few months (Figs 1 and 2). The



Fig 3: Endoscopic view of rectosigmoid area in a patient with NLH

majority of our patients had been treated repeatedly with antibiotics with the impression of bacterial colitis before referring to our center. The significant lag between the onset of rectal bleeding and final diagnosis in our cases indicate that frequently the possibility of NLH was not considered in the diagnosis of fresh rectal bleeding in this age group. The age of onset and clinical presentation of our cases were similar to the previously reported studies on NLH.⁵⁻⁸

The clinical presentation and endoscopic findings in the present series indicate the disease is localized only to rectosigmoid area, as reported previously.⁵⁻⁸ In older children and adolescents, NLH can involve any part of the GI tract (stomach, small bowel and colon) and is usually accompanied by an underlying problem such as *H. pylori* infection, giardiasis or immunodeficiency, which are usually asymptomatic.⁹⁻²² Cow's milk protein allergy is considered as a potential cause for NLH in early infancy. None of our cases had systemic signs or symptoms favoring protein allergy or significant number of eosinophils in peripheral blood and mucosal biopsies. Most of our cases (88%) were EBF.

Follow up rectosigmoidoscopy showed complete resolution of nodularity changes.

Considering the age of onset of rectal bleeding, the specific area of gastrointestinal involvement, clinical presentations, and the response to dietary manipulation, it is believed that NLH, at this age group, is a specific presentation of cow's milk allergy and is limited to rectosigmoid area only. It is concluded that:



Fig 4: Endoscopic view of rectosigmoid area in a patient with NLH

1. NLH is an important cause of prolonged fresh rectal bleeding in early infancy, irrespective of the type of infant's feeding.
2. The disease is limited to rectosigmoid area, in otherwise healthy infants without underlying systemic disease.
3. Exclusion of cow's milk from mother's diet or changing the infant's formula to hypoallergenic type is the best modality of treatment.
4. Long term prognosis of infants with NLH is excellent.

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Infants with nodular lymphoid hyperplasia

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