

Case Report

Allergic colitis in an infant with perinatal cytomegalovirus infection

M. Rogalidou,¹ E. Roma,² E. Kouroumalis,³ E. Michailidou,¹ A. Savvidou,¹ M. Kalmanti¹

SUMMARY

A two month old male presented with a history of bloody, mucous diarrhoea 6 days after the introduction of cow's milk formula. Cow's milk protein allergy was suspected and breast feeding with exclusion of all cow's milk products from his mother's diet was suggested. As a consequence the symptoms disappeared. One month later, when his mother tried to give him again cow's milk formula, diarrhoea with severe rectal bleeding reappeared. A limited colonoscopy was performed suggesting allergic colitis. Despite the exclusion of all cow's milk products from his mother's diet combined with the use of an aminoacid containing formula, diarrhoea and rectal bleeding were not improved. At that time a diagnosis of perinatal cytomegalovirus (CMV) infection was made, based on CMV detection in infant's blood and urine as well as in maternal milk. The symptoms were resolved one week after discontinuation of breast feeding. It is known that CMV can be transmitted from infected mothers to their infants through breastfeeding. However the effect of CMV infected milk in an already fragile mucosa because of the allergic colitis is not well established. Further attention should be given to elucidate a potential interaction between these two conditions.

Key words: colitis; cow's milk protein allergy; cytomegalovirus; infant; breastfeeding

INTRODUCTION

Rectal bleeding in combination or not with diarrhoea in infancy is an alarming symptom and requires investi-

¹Paediatrics Department, University Hospital of Heraklion, Crete,

²University of Athens, Department of Pediatric Gastroenterology,

³Department of Gastroenterology, University Hospital of Heraklion, Crete

E. Roma, 1st Dept. Paediatrics, Athens University, Aghia Sophia Children's Hospital, Athens 115 27, Greece, Tel: +30 210 7467892, Fax: +30 210 7759167, e-mail: roma2el@otenet.gr

gation. Rarely there is evidence of bleeding diathesis, or infectious colitis in this age group. Cow's milk allergy is the major cause of colitis in infancy.¹ Diagnosis of allergic colitis is based on exclusion of other causes of specific colitis, typical endoscopic and histological findings and a satisfactory response after elimination of cow's milk protein from the diet.

CASE REPORT

A two month old, full-term infant, the first child of healthy parents, born by caesarean section with a birth weight of 3420 gr, was admitted for investigation of bloody diarrhoea. He was well on exclusive breast-feeding, but he developed diarrhoeal stools with blood and mucus 6 days after introduction of supplementary cow's milk formula. Clinical examination was normal. Stool cultures were negative and blood tests were normal. Cow's milk allergy was suspected and breast feeding, as well as extensively hydrolysed formula -whenever needed-was suggested. Two days following the introduction of the new diet, the stools were normal without blood and mucus, and the infant was discharged in a very good general condition.

At the age of 3 months, his mother again tried to give him cow's milk formula. One week after the reintroduction of cow's milk formula he again developed rectal bleeding and diarrhoea. On admission he was afebrile, in good general condition and his clinical examination was normal. His weight was between the 75th and 90th centile. In spite of being breast-fed (with exclusion of all cow's milk and Soya products from his mother diet) and on an aminoacid based formula his rectal bleeding persisted, passing a considerable quantity of fresh blood in stools.

Abbreviations:

CMV cytomegalovirus

PCR polymerase chain reaction

IBD Inflammatory bowel disease

His blood count results at presentation were as follows: WBC 15300 K/ μ L (Neutr.18%, Lymph. 67% Eos 10% ~1500) Hgb 11g/dL, PLT 588000 K/ μ L, ESR 11mm/h, CRP (-) Biochemical parameters were normal. RAST test for cow's milk protein was negative. Immunoglobulins were normal and the IgE slightly elevated. Coagulation was normal. Microbiological and virological analysis of his stools was negative for enteropathogens *Campylobacter*, *Sihgella*, *E.Coli*, *Salmonella*, *Clostridium*, parasites and rotavirus antigen.

Meckel's scintigraphy with 99m Tc-pertechnetate was normal, while abdominal ultrasonography revealed thickening of the wall of descending colon. A limited colonoscopy was performed and macroscopically colitis was seen with oedema, focal erythematous mucosa and aphthous-like ulcerations in rectum, sigmoid, and descending colon. The differential diagnosis comprised allergic colitis, CMV colitis and autoimmune or IBD colitis. Biopsies showed moderate destruction of crypts with oedema and moderate inflammation in lamina propria consisting of plasma cells, histiocytes and eosinophils in clusters. In one sample a considerable number of eosinophils were observed in both mucosa and submucosa, suggestive of allergic colitis. Immunohistochemical staining for CMV was negative.

An elevated titer of IgM and low titer of IgG (92.3 AU/ml) against CMV in the infant's serum was noticed, while 2 months later IgM became negative and the IgG titer was increased (250 AU/ml). Additionally, PCR for CMV in blood was positive and urine culture also revealed CMV. Ocular inspection and cerebral ultrasound investigation were normal. Elevated IgG antibodies (> 250 AU/ml) against CMV, and negative IgM in mother's serum indicated a previous CMV infection. However, PCR in mother's milk was positive for CMV.

The breastfeeding was discontinued and the infant was exclusively fed with an aminoacid containing formula. One week later the rectal bleeding stopped and the infant was discharged in very good condition with normal stools.

DISCUSSION

Perinatal infection with CMV could be transmitted from genital secretions during the delivery, after blood products transfusion or through breast milk.² CMV shed into the breast milk is the main source of CMV infection during the first year of life.³ A higher rate of CMV transmission in preterm infants has been observed.⁴ The perinatal infection is usually asymptomatic^{3,5} especially in term infants. It can also be presented with pneumonitis, lymphadenopathy, hepatosplenomegaly,⁶ and CMV coli-

tis in immunocompromised as well as in immunocompetent children. Treatment for the perinatal infection with no systemic manifestations in immunocompetent children is usually not needed.⁷

A case of a 5 week old immunocompetent infant with cow's milk allergy and CMV colitis has been reported. In that case the infant had a good evolution of symptoms without special treatment for CMV colitis.⁸

In the present case we describe a 3 month old infant with diarrhoea and rectal bleeding. The diagnosis of allergic colitis due to cow's milk was made at the age of 2 months based on presentation of bloody diarrhoea after introduction of cow's milk and peripheral eosinophilia. The rapid improvement following introduction of hypoallergenic formula and exclusion from his mother's diet of the cow's milk products, as well as the re-appearance of symptoms after challenge with cow's milk formula combined with a typical biopsy were compatible with the diagnosis of allergic colitis.

Interestingly at the same time CMV infection was found in blood and urine, but CMV colitis was not proved immunohistochemically. Infection with CMV could be an explanation for the persistence of symptoms despite exclusion of cow's milk protein, while they disappeared immediately after breastfeeding was discontinued.

Probably both factors, CMV infection and cow's milk protein allergy could have contributed to the severe rectal bleeding. A disruption of the normal gastrointestinal mucosa barrier by the cow's milk allergy could be aggravated by a continuous attack from CMV via breast-milk. Another possibility is that the infected by CMV breast milk could cause the damage of mucosa and facilitate the allergic reaction to cow's milk protein.

More studies are needed to elucidate the association between these two conditions in infants with rectal bleeding and the possible effect, if there is any, of the CMV infected breast milk in immature gut mucosa during the first months of life.

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