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ORIGINAL ARTICLE

Cow's milk allergy: color Doppler ultrasound findings in infants with hematochezia☆

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KEYWORDS
Cow's milk allergy;
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Abstract
Objective: ultrasound (US) has been an important diagnostic tool to identify several causes of gastrointestinal bleeding. Infants with cow's milk allergy (CMA) may present hematochezia and the confirmation of the diagnosis can be difficult. The aim of this study is to describe grayscale and color Doppler ultrasound findings in patients with CMA.
Methods: we retrospectively studied 13 infants with CMA. All infants presented severe hematochezia and abdominal pain. All underwent an US study with the diagnosis of allergic colitis. This diagnosis was based on clinical findings, recovery after infant or mother exclusion diets in the case of exclusive breastfeeding and positive oral challenge test.
Results: the mean age ranged from 1 to 6 months (mean = 3.53). Seven out of 13 infants (53.8%) had grayscale and color Doppler sonographic repeated after exclusion diet. Twelve out of 13 (92,3%) showed abnormalities at US and CDUS at beginning. The positive findings suggesting colitis were thickened bowel walls and increased vascularity, especially in the descending and sigmoid colon. Colonoscopy and histopathological findings were compatible with allergic colitis. After a diet change the 13 infants recovered and their oral challenge tests were positive.

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Conclusion: Doppler US may be very useful in diagnosing secondary colitis, such as CMA, and to exclude several other abdominal diseases that can emulate this disease.

PALAVRAS-CHAVE
Alergia ao leite de vaca;
Colite;
Ultrassom

Alergia ao leite de vaca: achados do ultrassom com Doppler colorido em neonatos com hematoquezia

Resumo

Objetivo: O ultrassom (US) tem sido uma importante ferramenta de diagnóstico para identificar várias causas de hemorragia gastrointestinal. Neonatos com alergia ao leite de vaca (ALV) podem apresentar hematoquezia, e a confirmação do diagnóstico pode ser difícil. O objetivo deste estudo é descrever achados com ultrassom em escala de cinza e com Doppler colorido em pacientes com ALV.

Métodos: Estudamos, retrospectivamente, 13 neonatos com ALV. Todos eles apresentaram hematoquezia severa e dor abdominal e foram submetidos a um estudo com US, com o diagnóstico de colite alérgica. O diagnóstico teve como base os achados clínicos, a recuperação após a dieta de exclusão do neonato ou da mãe, no caso de amamentação exclusiva, e o teste de provocação oral positivo.

Resultados: A idade média variou de um a seis meses (média = 3,53). Sete dos 13 neonatos (53,8%) passaram novamente por ultrassonografia em escala de cinza e com Doppler colorido após a dieta de exclusão. Dentre eles, 12 dos 13 (92,3%) mostraram anormalidades no US e no ultrassom com Doppler colorido (USDC) no início. Os achados positivos que sugeriram colite foram paredes intestinais espessas e aumento na vascularização, principalmente no cólon descendente e sigmoide. Os resultados da colonoscopia e histopatológicos foram compatíveis com colite alérgica. Após uma mudança na dieta, os 13 neonatos se recuperaram e seus testes de provocação oral foram positivos.

Conclusão: O US com Doppler pode ser muito útil para diagnosticar a colite secundária, como a ALV, e para excluir várias outras doenças abdominais que podem imitar essa doença.

Introduction

Allergic proctocolitis is the main cause of rectal bleeding in infants during the first six months of life. Generally it occurs due to early exposure to heterologous proteins, especially from cow's milk intake or cow's milk proteins derived from maternal breastfeeding. This allergy is usually cell mediated and is due to an immunological immaturity of the infant gut. Generally, allergic proctocolitis is a transient process, which ceases during the first year of life in more than half of cases.[1,2]

The clinical presentation of allergic proctocolitis is variable but often includes hematochezia (bright red blood in the stool), diarrhea, vomiting, irritability, cramps, abdominal distention, and growth impairment.[3,4] Regardless of the clinical presentation, the cow's milk allergy (CMA) diagnosis is made through response to exclusion diet and subsequent oral challenge.[5–7]

Food allergy colitis is frequently overlooked due to the wide range of symptoms and its insidious nature, which makes it difficult to establish a definitive diagnosis.[6] Grayscale ultrasound (US) and color Doppler ultrasound (CDUS) have been important diagnostic tools to identify different causes of gastrointestinal bleeding, such as complications caused by Meckel's diverticulum, midgut volvulus, infectious colitis, intussusception, vascular malformations, and inflammation.[8,9] US and CDUS have also been employed to detect inflammatory bowel disease in children.[10–12] and less frequently in allergic colitis.[13]

Recently, using CDUS, we assessed the mesenteric circulation of infants below the age of 6 months with suspected CMA.[12] The group of children involved in this study were heterogeneous, including infants with different clinical manifestations besides allergic proctocolitis, as colic, vomiting. Controls were asymptomatic infants <6 months.[12] When comparing both groups there was a significant increase of the mesenteric vessel density in infants with confirmed CMA diagnoses (by the exclusion diet for four weeks and challenge test) when compared to controls and patients with non-confirmed CMA. Those results suggest that CDUS could be used as a screening tool to diagnose CMA.

The aim of this study is to describe grayscale and color Doppler ultrasound findings in infants with hematochezia due to allergic proctocolitis.

Methods

US and CDUS were ordered to evaluate the cause of hematochezia in 13 infants of less than 6 months old. All infants presented with blood stools and the suspicion of allergic colitis. The diagnostic standard used was the response to exclusion diet, confirmed by challenge test after four weeks of clinical improvement. These patients were from the pediatric gastroenterology clinic of our institution and examination before starting the elimination diet. All were evaluated and investigated by pediatric gastroenterologists, who requested US and CDUS scans and follow-up