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Case Report

CASE REPORT

Massive hematemesis and melena stool: A case report of unusual manifestation of Cow's milk protein intolerance

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Abstract

Cow's milk protein intolerance (CMPI) is a common condition that causes gastrointestinal bleeding in the first year of life. It is the most common cause of chronic blood loss and anemia; however, severe massive hematemesis is an uncommon condition. Herein, we present a case of severe massive hematemesis with melena stool in a six-month-old boy with cow's milk protein intolerance. In this case, we described management used in poor developing countries.

INTRODUCTION

Cow's milk protein intolerance (CMPI) is the most common food allergy in young children affecting approximately (1.9–4.9)% of children under four years of age with a peak in the first year [1]. It is associated with several distinct entities such as IgE-mediated CMPI, food protein-induced enterocolitis syndrome (FPIES), food protein-induced proctitis/proctocolitis, food protein-induced enteropathy (FPE), Heiner syndrome, and even may be related to infantile colic, GERD disease, and constipation [2]. CMPI may present as vomiting, chronic diarrhea sometimes containing blood and mucus, hematemesis, urticaria, colicky abdominal pain. Severe massive gastrointestinal hemorrhage due to CMPI may be considered a rare symptom among infants [1].

CASE REPORT

A six-month-old boy with no significant medical and family history presented to our emergency department (ED) with hematemesis and passage of melena stool. The emesis was bright red; five times in the preceding 24 hours; with passed dark melena stool four times. The stool was soft without mucus, abdominal discomfort or pain. He was on formula since the age of 5 months. He was not taking any medications. His blood pressure was 90/53 mmHg, with a heart rate of 130/min and a respiratory rate of 25 breaths/min. He had normal growth (weight 6.1 kg, length 68 cm) with a normal physical examination except pallor. Laboratory findings revealed hypochromic microcytic anemia [Hb 6.5 g/dl, MCV 71 fl] with normal prothrombin time (PT) and partial thromboplastin time (PTT).

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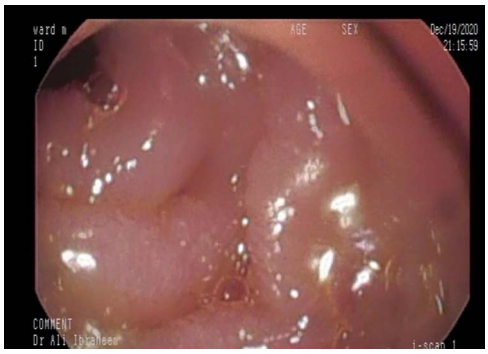

Figure 1: An esophagogastroduodenoscopy revealed severe gastric mucosa edema with fragility and bleeding tendency.

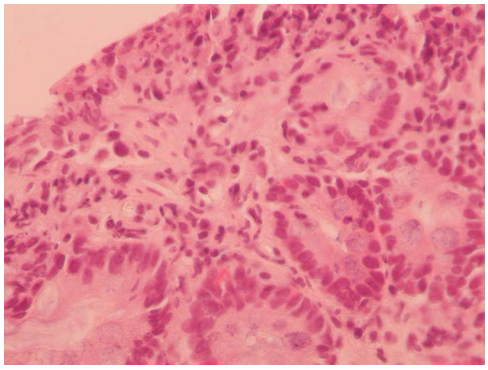

Figure 2: The histological biopsies from the duodenum showed advanced villous atrophy associated with marked lymph-plasmacytic infiltration and an increase of eosinophils more than 25/HPF.

Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), liver function tests, kidney function tests, electrolytes and immunoglobulin E (IgE) were normal. Peripheral blood smear showed erythrocytes of different sizes, shapes and lack of pigment with normal leukocytes, eosinophil and platelets. Stool microscopy revealed (20–30) white blood cells with (4–6) red blood cells. The abdominal ultrasound was normal. The child was placed on nothing by mouth (NPO) with a transfusion of 15 mL/kg of red blood. An esophagogastroduodenoscopy (EGD) revealed severe gastric mucosa edema with fragility and bleeding tendency. There was widespread edema in the duodenum and duodenum bulb (Fig. 1). The histological biopsies showed advanced villous atrophy associated with marked lymph-plasmacytic infiltration and an increase of eosinophils more than 25/HPF in the duodenum (Fig. 2). Gastric biopsy showed chronic gastritis with mild activity (Fig. 3). According to the clinical, laboratory and histological findings, CMPI was diagnosed. Due to the poor economic conditions of the family and the lack of amino acid, soy protein formulas in our country, the child was placed on goat milk (GM) (1/2 GM expanded with 1/2 water) plus multivitamins (especially folate, B12, B6, A, C and D) with restricted cow's products. After treatment, the child's general condition improved and vomiting stopped, and he was discharged after 3 days. During 4-month follow-up, the patient was asymptomatic with normal weight gain. He is well until now and still on restricted cow's products and GM without any complaint.

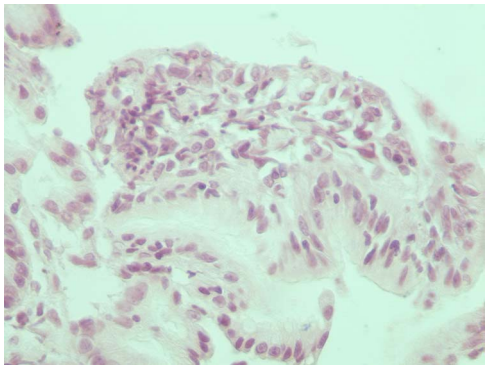

Figure 3: Gastric biopsy showed chronic gastritis with mild activity.

DISCUSSION

Acute massive bleeding in children is associated with many surgical conditions as midgut volvulus, intussusception or other surgical diseases. These causes are distinguished across laboratory tests and radiological examinations [3]. Laboratory investigations in CMPI infants are not diagnostic but can support a diagnosis. It may demonstrate microcytic anemia, eosinophilia, mildly elevated serum IgE, decreased albumin, increased platelets, ESR, CRP and fecal leukocytes that are all evidence of inflammation [4]. Our case presented severe massive hematemesis with melena stool that required laboratory and radiological examinations to exclude surgical diseases. Laboratory data showed normal leukocytes, eosinophil and IgE with hypochromic microcytic anemia and increased fecal leukocytes that suggested CMPI.

CMPI is difficult to diagnosis, the gold standard for diagnosis is the strict avoidance of cow's milk protein from the infant's and mother's diet [5]. EGD examination may appear multiple superficial erosions, ulcerations, lymphoid nodular hyperplasia or focal erythema. Histological findings include focal infiltrates of eosinophils of more than15–20 eosinophils/HPF in all mucosal layers, crypt atrophy or it may be normal [6]. In our case, EGD appeared severe gastric mucosa edema with widespread edema in the duodenum and duodenum bulb. The histological biopsies showed advanced villous atrophy associated with a marked increase of eosinophil more than 25/HPF in the duodenum. Elimination of cow's milk protein from the infant's resulted in a significant improvement in the symptoms observed (massive hematemesis and melena stool). Infants with CMPI should avoid all food containing cow's milk. Infants who are fed formula should be given an extensively hydrolyzed formula (EHFs), soy protein formula or amino acid -based formulas (AAFs) [7]. The European Society for Pediatrics Gastroenterology Hepatology and Nutrition (ESPGHAN) recommend that an AAFs may be considered as the first choice. Soy protein-based formula may be an option in infants older than 6 months. It has a significant risk of crossreactivity of ~ (30–50)% [1]. GM is not suitable for infants under 12 months of age. There is high cross-reactivity (~30%) between GM and cow's milk described in the literature that makes GM prohibited in CMPI. Little cases are known about tolerance to GM in patients with CMPI [8]. If it is necessary to use GM in newborns, we may avoid the main hazards by using the following guidelines. Firstly, raw GM should be boiled. Secondly, GM should be diluted in half to three-quarter strength because of its high solute content. Thirdly, the supplement folic acid and vitamins B12, A, C and D are needed [9]. Due to poor financial conditions and the lack of alternatives to cow's milk (soy milk,

EHFs, AAFs), GM was used as an experimental treatment with good patient tolerance.

AVAILABILITY OF DATA AND MATERIAL

All data generated or analyzed during this study are included in this published article.

AUTHORS' CONTRIBUTIONS

All authors have read and approved the manuscript.

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COMPETING INTERESTS

All of the authors declare that they have no competing interests.

FUNDING

No funding was obtained for this study.

DECLARATIONS

Ethics approval and consent to participate

This case report did not require review by the Ethics Committee Tishreen university hospital, Lattakia, Syria.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the patient's parents for publication of this Case report and any accompanying images. A copy of the written consent is available for review by the Editor.

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