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(CASE REPORT)

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Exudative enteropathy in neonates: A case report

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Abstract

The term exudative gastroenteropathy is used to describe an entity characterized by excessive loss of plasma proteins in the gastrointestinal tract. This digestive exudation can be caused either by an obstacle to intestinal lymphatic drainage or by an alteration of the epithelial barrier. The clinical picture is often associated with chronic diarrhea and an edematous syndrome. Lymphedema, infectious complications secondary to lymphopenia or hypogammaglobulinemia, and thromboembolic complications may also be observed. Diagnosis is based on the measurement of fecal alpha-1 antitrypsin clearance. Sometimes primary in the context of Waldmann disease (primary intestinal lymphangiectasis) but more often secondary. It requires an endoscopic and morphological workup to confirm the origin of the protein leak, to evaluate its extent and cause. In addition to etiological treatment, management is based on a hyperprotein and hypolipid diet with medium-chain triglyceride supplementation. We report the case of an exudative enteropathy in a newborn.

Keywords: Exudative; Edema; Lymphatic leakage; Hypoprotidemia

1. Introduction

Exudative gastroenteropathy is a pathological entity characterized by an excessive loss of plasma proteins in the gastrointestinal tract. This digestive exudation can be caused either by an obstacle to intestinal lymphatic drainage or by an alteration of the epithelial barrier [1].

We present an observation of an exudative enteropathy in a newborn.

2. Case report

It was a newborn male at full term with birth weight equal to 4000g, his mother had a 26 years old, primiparous with notion of first-degree consanguinity. Child was hospitalized at 7 days of age for edematous syndrome (edemas of both lower limbs, white, soft, taking the cup). Biologically, the total protein level was low with hypo albuminemia, renal function and 24-hour proteinuria were normal, no hydroelectrolytic disorders or hepatic cytolysis, the alpha 1 antitrypsin clearance was 43 ml, confirming the diagnosis of exudative enteropathy in this patient. The etiological work-up was completed by a digestive endoscopy with staged biopsies, which was inconclusive. Our patient was put on a high-protein diet with albumin infusion. The evolution was marked by clinical improvement but with frequent episodes of edematous syndrome and repeated infections. In our case, the diagnosis of primary lymphangiectasia remains the most probable in the absence of identification of a secondary cause.

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3. Discussion

Exudative enteropathy in neonates is defined as excessive plasma protein loss in the gastrointestinal tract. When these protein losses exceed the body's synthesis capacity, there is a reduction in serum levels of circulating proteins and specific clinical consequences [1,2].

Protein exudation can be caused by two distinct mechanisms: the first one is an increase in the permeability of the intestinal barrier, either by loss of mucosal substance with macroscopic ulcerations, resulting in leakage into the lumen of a predominantly inflammatory protein exudate, or by mucosal lesions without macroscopic ulcerations leading to a leakage of plasma proteins, while the second mechanism is increasing hydrostatic pressure in the interstitium leading to a leakage of lymph. Therefore, the greater the exudation, the greater the plasma loss [3,4].

There are mainly two types of circumstances that lead to suspect the diagnosis of exudative enteropathy: the exploration of hypoalbuminemia and the assessment of a known predisposing condition. Exudative enteropathy can also be found in the context of chronic diarrhea (in this case, it is often associated with malabsorption) and, more rarely, in the context of recurrent infections. In our patient, exudative enteropathy was evoked by an edematous syndrome with hypo albuminemia. The diagnosis of exudative enteropathy is therefore made by measuring the fecal clearance of alpha 1 antitrypsin (1-AT) that can be calculated from a plasma and fecal assay (usually performed over 3 consecutive days) is physiologically less than 24 mL per day; a1-AT clearance = (24-hour stool volume x fecal a1-AT) / serum a1-AT. Therefore, a higher clearance rate is indicative of exudative enteropathy [5,6].

In our observation the clearance of alpha 1 antitrypsin was 43 ml per day, which allowed us to retain the diagnosis of exudative enteropathy in this newborn.

Exudative enteropathy can be primary in the context of Waldmann disease (primary intestinal lymphangiectasias), but more often secondary; the etiological diagnosis requires an endoscopic and morphological work-up to confirm the origin of the protein leak, to evaluate its extent and cause. [7,8,9] In our case, the diagnosis of primary lymphangiectasis remains the most likely in the absence of identification of a secondary cause.

Treatment of exudative enteropathy is based on a low-fat, high-protein diet with medium-chain triglyceride enrichment. Supplementation with fat-soluble vitamins (vitamins A, D, E and K) and essential fatty acids is essential and should be monitored regularly. [10] In addition, albumin infusion can be proposed in case of hydrops or symptomatic localized serous effusion or in case of profound albumin hypo. Our patient was put on a hyperprotein diet with albumin infusions. The evolution was marked by a clinical improvement, but with frequent episodes of oedematous syndrome and recurrent infections.

4. Conclusion

Neonate exudative enteropathy is a rare disease due to increased hydrostatic pressure in the interstitium or abnormal permeability of the intestinal wall with or without ulceration. The etiological investigation should include careful exploration of the gastrointestinal tract and the lymphatic drainage system.

Compliance with ethical standards

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Disclosure of conflict of interest

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Statement of informed consent

Informed consent was obtained.

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