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Celiac Disease as Chylous Ascites in a Child

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Abstract 10 year old with no significant history either in the past or family presented with tense ascites, hypochromic microcytic anemia, thrombocytosis and milky fluid with TAG level of 350 mg/dl with a SAAG of >1.1. LFT, chest xray and ascitic fluid ADA were normal. USG abdomen showed fine echoes from peritoneal cavity and normal liver and portal /hepatic veins. endoscopy was done to look for lymphangiectasia but gross morphology of duodenum was suggestive of celiac disease. Normal IgA, high anti TTG, biopsy marsh IIIB and clinical response to gluten free diet confirmed the diagnosis of celiac disease.

Keywords: *chylous ascites, celiac disease, GFD*

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1. Introduction

Chylous ascites is accumulation of chylous fluid in peritoneal cavity. The fluid is milky in color and has TAG content>200mg/ dl. In adults' malignancy, cirrhosis and tuberculosis are most common causes while in children abnormalities of lymphatic development and trauma are commonest causes [1,2]. Celiac disease as a cause of chylous ascites has never been reported in children.

2. Case

10 year old male patient with no significant past history comes to pediatric department with gradually increasing abdominal distention from last 2 weeks associated with generalized abdominal discomfort and breathlessness from last 3 days. There were no constitutional symptoms or history of trauma or Koch's disease in the family. On examination the patient had tachypnea, was pale and had tense ascites. The anthropometry was within the normal limitis (after ascites was gone). Complete hemogram showed microcytic hypochromic anemia with hemoglobin 8 gm%, total/differential white cell counts were normal. Platelet count was 5 lac per cubic mm. LFT was normal. Ultrasounography (USG) abdomen with Doppler showed ascites, normal portal vein and liver echo texture. Large volume paracentesis was done under cover of albumin. Fluid was sent to analysis which was milky in appearance and showed TAG level of 350 mg /dl, SAAG was above 1.1, ADA for tuberculosis was negative. Patient was put on fat free MCT powder and fruit based diet. Chest xray and echo was normal. Endoscopy was done to look for lymphangiectasia but there was mosaic mucosa, scalloping, fissuring and and reduced density of duodenal fold. Biopsy was taken and celiac serology was sent. Celiac serology was positive (IgA normal and anti-TTG 110) and duodenal biopsy showed features characteristic of celiac disease, marsh IIIb (Figure 1). Patient was put on GFD and oral iron. The distention resolved within 2 weeks from paracentesis and after 8 days of GFD. The MCT based was stopped once biopsy and serology for celiac disease came positive. Patient is on follow up from last 5 months and abdominal distention never recurred and clinically there is no pallor. Repeat ultrasound abdomen did not show any ascites.

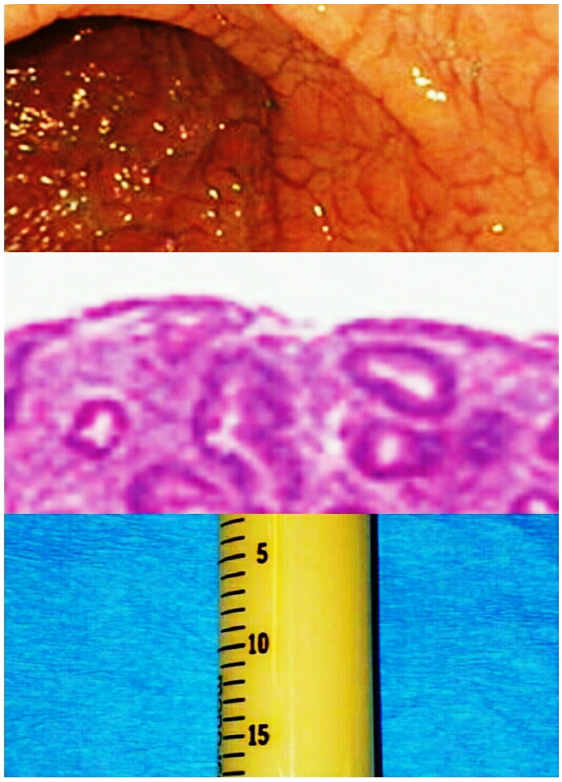

Figure 1. Gross endoscopy, histology of duodenum in chylous ascites

3. Discussion

Chylous ascites is characterized by accumulation of chyle in peritoneal cavity. Progressive and painless abdominal distention (81%) and abdominal pain (14%) are the most common presenting symptoms occurring over a course of weeks to months depending on the underlying cause [1]. Patients may also present weight gain and dyspnea resulting from increased abdominal girth. Analysis shows Tag level >2oomg/dl, lymphocytes >500 per cubic millimeter [2]. The main causes in adults are malignancy, cirrhosis tuberculosis or trauma. In children abnormalities of lymphatic development including lymphangiectasia, post surgical or direct trauma and tuberculosis are most common causes [3]. Celiac disease has been described as a cause of chylous ascites in an adult possibly due to lymphatic hyperplasia [4]. Blood counts in celiac disease show throbocytosis due to hyposplenism [5]. USG abdomen shows fine echoes from peritoneal cavity. Other techniques like CT scan, lymphangioscintigraph, laproscopy and laprotomy may aid in diagnosis and treatment depending upon the etiology. Treatment of underlying cause is mainstay of therapy. Idiopathic and non responsive cases fat (LCT) free and MCT based protein rich diet may be followed by bowel rest by TPN with or without octreotide [6,7,8,9]. Large volume paracentesis is indicated for symptomatic tense chylous ascites [1]. Medical management may take up to 6 months to respond in such cases. Goal of nutrition therapy is to decrease production of chyle, replace fluid and electrolytes,and maintain or improve nutrition status [10]. No response to medical management may need TIPS for cirrhosis, peritoneovenous shunting in poor candidates for surgery and surgical management for tumors. Lymphangiography with embolization for post operative cases of chylous leak may be used [11,12,13].

In conclusion celiac disease is a cause of chylous ascites in children and should be looked for an etiological work up. Response to GFD is rapid and mainstay of therapy.

Abbreviations

TAG –Triglycerides
LFT- liver function tests
SAAG- serum ascites albumin gradient
ADA-adenosine deaminase
MCT- medium chain triglycerides
LCT-long chain triglycerides
TPN-total parentral nutrition
GFD-gluten free diet

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