Chylous ascites in cirrhosis-A case report

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ABSTRACT

Chylous ascites is a rare presentation in cirrhotic liver disease but its incidence has increased because of aggressive cardiothoracic/abdominal surgeries and increasing survival of patients with chronic liver disease and cancer. We report here a case presenting with spontaneous chylous ascites in cirrhosis of liver. It has been associated with poor prognosis.

Keywords: chylous ascites, cirrhosis, poor prognosis.

Introduction

Chylous ascites is the accumulation of a milk-like peritoneal fluid rich in triglycerides due to the presence of thoracic or intestinal lymph in the abdominal cavity.[1] It is an uncommon finding with reported incidence of only one in 20,000 admissions at a large university-based hospital over a 20-years period.[2] In western countries, abdominal malignancy and cirrhosis account for over two third of all cases of chylous ascites. In contrast, infectious etiologies eg.tuberculosis are responsible for majority of cases in developing countries. Other causes of chylous ascites include congenital, inflammatory, postoperative and traumatic. Diagnosis is readily made by the presence of milky and creamy ascitic fluid with a triglyceride content above 200mg/dl.[1,3] Spontaneous development of chylous ascites in patients with cirrhosis has a documented incidence of only 0.5%.[4] Unnecessary, expensive and invasive diagnostic modalities should be avoided in cirrhotic patients unless there is strong suspicion of malignancy.

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Case report

32 years male from Hetauda, Makwanpur, Nepal (IP No:4336) was admitted at CMS-Teaching Hospital, Bharatpur for evaluation, diagnosis and management of progressive abdominal swelling for 6 months. His primary complaints also included anorexia and weight loss. Bowel and bladder functions were normal. There was no history of fever, altered sensorium, melena or hematemesis. He was a diagnosed case of Type 1 Diabetes Mellitus on regular insulin therapy for the past few months. He was an ex-smoker with index of 150 and regular alcoholic with consumption of locally made alcohol ~4units/day for 18years which he left about 6 months back.Clinical examination revealed lean and thin male with BMI of 17.5kg/m^2.Vitals at the time of presentation were: BPof 100/60mmHg,Pulse=88/

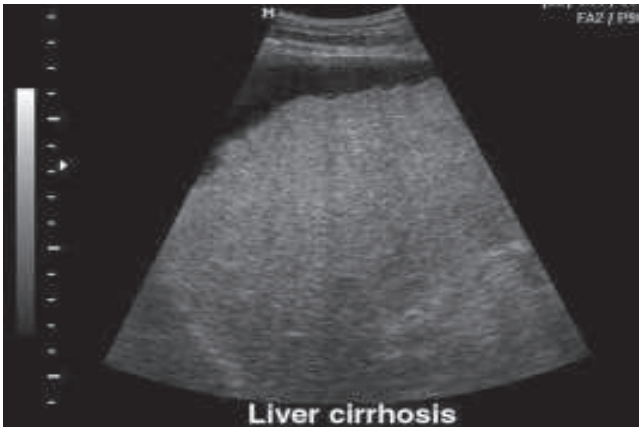
min,regular,good volume, temperature= normal, respiration rate=20/min,regular. Jugular venous pressure was normal. Icterus was absent.Other positive clinical findings were mild pedal edema, ascites, prominent superficial abdominal veins(direction of blood flow-away from umbilicus), mild hepatomegaly with irregular border and splenomegaly.Cardiovascular system, central nervous system and chest examination were normal.Patient had stigmata of chronic liver disease with loss of secondary sexual characteristics.Routine and diagnostic tests were as shown in Table 1.

Surprisingly, peritoneal fluid tapping revealed gross milky fluid (Fig.1)which was further investigated for triglyceride >200mg/dl(430.8mg/dl) and no evidence of infection or trauma thus confirming chylous ascites in a patient with chronic liver disease with cirrhosis of liver with portal hypertension who is also known diabetic for few months. The patient was managed with therapeutic paracentesis, diuretics, propranolol (a beta blocker), antibiotics, insulin therapy and dietary control. He was discharged after he improved with the therapeutic measures.

Complete hemogram	Liver function tests	Radiological investigations	Peritoneal fluid tapping	Others
Hb-14.4, Hct-0.44, WBC-7.7 RBC-4.8, Platelet-22 5DLC: N-80, L-15, E-02, M-03 ESR- 10mm in 1st hr MCV-93.3 FLMCH- 29.9pg MCHC-32.0g/dl	Total bilirubin:1.5mg/dl Direct:0.6mg/dl Indirect:0.9mg/dl ALT:90IU/L AST:110IU/L Alkaline phosphatase:122IU/L Gamma-GT:200IU/L Protein:5.8mg/dl Albumin: 2.6g/dl PT:16seconds INR:1.4	USG abdomen:Liver enlarged in size measuring 144mm with irregular outline & coarse echotextureUrinary bladder(UB): Echogenic debri in UBGross free fluid is seen in abdomen and pelvisCXR(PA view): Rt. sided mild pleural effusion	**Colour:milky fluid** Albumin:0.4 gm/dl Protein: 1.1gm/dl SAAG:2.2(>1.1) Sugar: 330.4mg/dl **Triglyceride: 430.8mg/dl** Grams stain- no inflammatory cells, no organism seen. Z.N. stain- no AFB seen.	Upper gasterointestinal endoscopy: Grade I esophageal varicesFBS: 252mg/dl PPBS(2hrs):386mg/dl Urine R/E and microscopy:sugar(++) Urine for ketone bodies:-ve Blood urea: 47mg/dl Serum Cr:1.2mg/dl SerumNa:136meq/L Serum K:3.5meq/L Lipid profile: Total cholesterol:165mg/dl Triglyceride:88.4mg/dl HDL: 24mg/dl LDL: 123.4mg/dl VLDL:17.6mg/dl

Fig 1:Picture showing chylous fluid on paracentesis abdominis

Fig 2: USG showing liver cirrhosis



Discussion

The underlying pathophysiology of chylous ascites in cirrhosis of liver is due to rupture of serosal lymphatic channels which are dilated because of excessive lymph flow[1]. They present as progressive and painless abdominal distension which occurs over the course of weeks to months. Stigmata of chronic liver disease eg.jaundice, palmar erythema, spider angioma and encephalopathy may be present.

Abdominal paracentesis is the most important diagnostic tool in evaluating and managing patients with ascites. Typically, chyle has a cloudy and turbid appearance with triglyceride values above 200mg/dl[3] although some authors use a cutoff value of 110mg/dl[2].

CT abdomen is useful in identifying pathological intra-abdominal lymph nodes and masses. Lymphangiography and lymphoscintigraphy help in detecting abnormal retroperitoneal nodes, leakage from dilated lymphatics, fistulisation and patency of the thoracic duct.[5]

There are limited studies addressing the best treatment regimens. Most chylous effusions respond to an initial approach with high protein and low fat diet with medium chain triglycerides by reducing the production and flow of chyle.[6] Patients with cirrhotic chylous ascites should be managed with low sodium diet and diuretics such as spironolactone.[7] Patients who do not respond to the above measures should be fasted to reduce lymph flow and started on total parenteral nutrition(TPN).[1] Somatostatin and octreotide have been successfully used to treat chylous effusions due to lymphatic leakage. It has been speculated that somatostatin improves chylous ascites by inhibition of lymph fluid excretion through specific receptors found in the normal intestinal wall of lymphatic vessels.[8] Treatment of underlying cause is of pivotal significance. Repeated large volume paracentesis is a reasonable option for patients with end stage disease not amenable to medical or surgical treatment.

In patients who are poor surgical candidates and refractory to non-operative treatment, peritoneovenous shunting may be an option. High viscosity of the chyle results in shunt occlusion in the majority.[9] Other complications include sepsis, disseminated intravascular

coagulopathy, electrolyte imbalance, small bowel obstruction and increased risk for air embolism.

Conclusion

Chylous ascites is a relatively uncommon disorder. Diagnosis of chylous ascites can be readily made with simple tests. In patients with cirrhosis, unless there is strong suspicion of malignancy, unnecessary, expensive and invasive diagnostic modalities to rule out a malignant process should be avoided. Treating the underlying disorder is of paramount importance in the management.

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