



Congenital Chylous Ascites Presenting with Bilateral Inguinal Hernia and Umbilical Hernia

Abdul Rehman Siddiqui¹ , Harish Chandra Tudu², Subrat Kumar Mohanty^{1*} , Amaresh Mishra¹, Sebaranjan Biswal³

¹ Department of Surgery, KIMS, Bhubaneswar, India

² Consultant Pediatric Surgeon, KIMS, Bhubaneswar, India

³ Department of Pediatrics, KIMS, Bhubaneswar, India

***Address for Corresponder:** Dr. Subrat Kumar Mohanty, Department of Surgery, KIMS, Bhubaneswar, India (email: subrat.mohanty@kims.ac.in)

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Abstract

Chylous ascites refers to the leakage of lipid rich milky fluid into the peritoneal cavity. This usually occurs following trauma or obstruction of the lymphatic system. Moreover, an existing clear ascitic fluid can turn chylous as a secondary event. Milky appearance on gross appearance along with high fat (triglyceride) content usually suggestive of the diagnosis. We are reporting a 3 months infant with chylous ascites diagnosed during bilateral inguinal herniotomy. The patient presented bilateral scrotal with umbilical swelling for last one month. Examination showed bilateral inguinal hernia, umbilical hernia with mild abdominal distension. Bilateral herniotomy and subsequent ultrasound guided paracentesis revealed milky peritoneal fluid. Biochemical analysis revealed plenty of lymphocytes, high triglyceride content with increased

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Keywords

- Chylous ascites
- Bilateral scrotal swelling
- Umbilical hernia

cellularity and no abnormal cells suggestive of chylous ascites. Lymphoscintigraphy revealed leak from retroperitoneal lymphatics. Child improved following dietary modification and octreotide therapy without any surgical intervention. The aim of this case report is to describe the unusual presentation, its clinical and biochemical factors and role of conservative treatment of a patient with congenital chylous ascites.

Introduction

Chylous ascites is the extravasations of lipid rich lymphatic fluid into the peritoneal cavity resulting from an anomaly, injury or obstruction of lymphatic system. It is a rare condition, still rarer in infants of 3 months age.¹ Diagnosis is a challenge and depends on the demonstration of milky ascitic fluid with high fluid triglyceride level. This case report highlights the pathophysiology, clinical presentation and treatment of chylous ascites.

Case Report

A 3-month-old male baby presented to the pediatric surgery unit of Surgery Department, Kalinga Institute of Medical Science, Bhubaneswar, India, as a case of bilateral inguinal hernia with umbilical hernia. After initial evaluation he was

scheduled for bilateral inguinal herniotomy on second day of admission. Intraoperatively, around 15 ml of milky fluid from right hernial sac, and around 10 ml from left sac was drained and sent for cytology and triglyceride level **Figure 1**. Peritoneal fluid triglyceride level was very high (85390 mg/dl) and cytology showing plenty of lymphocytes, few polymers, reactive mesothelial cells, and negative for malignant cells. Serum albumin was low and fluid culture was sterile, and was diagnosed as chylous ascites. The child was started on SIMYL medium chain triglyceride feed and octreotide infusion 1.5 mcg/kg/hr for 1 week, and later increased to 2 mcg/kg/hr and breast feeding stopped. Ultrasound revealed mild to moderate ascites after 1 week of surgery and paracentesis of 280 ml peritoneal fluid

was done. Further evaluation with lymphoscintigraphy revealed retroperitoneal lymphatics as the suspected site of leakage **Figure 2**. The child continued with conservative management with subcutaneous octreotide injection and medium chain triglyceride feed for 4 weeks in hospital, was improved and discharged **Figure 3**. On follow up at the end of 1st month, there was substantial decrease in

peritoneal fluid and octreotide was continued for another 4 weeks and then stopped with same dietary modification. At the end of the 3rd month, repeat ultrasound showed insignificant peritoneal collection and repeat lymphoscintigraphy showed minimal lymphatic leak as compared to previous scan. On last follow up at 8 months, the child was doing well without any abdominal distension.



Figure 1: Milky chylous fluid from hernia sac

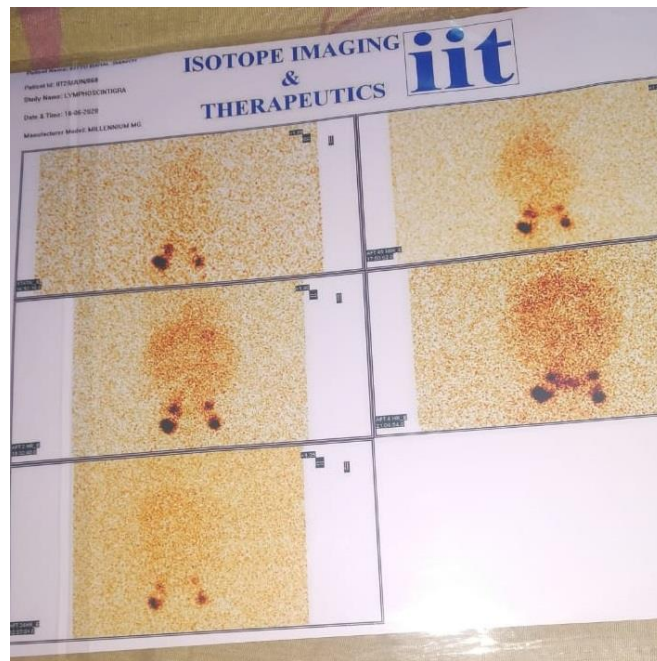


Figure 2: Lymphoscintigraphy



Figure 3: Ascites improved after treatment

Discussion

The various etiological factors of chylous ascites in children are due to some degrees of involvement and delay in maturation of lymphatic channels, such as malformations, atresias or stenoses, but surprisingly in half of the cases no definite cause is found.² In adults, infectious causes like tuberculosis is the major cause in developing countries, whereas malignancy and cirrhosis of liver are mostly associated in the developed countries.³⁻⁴ The current case presented at the age of 3 months with bilateral inguinal hernia and umbilical hernia as a consequence of free fluid and abdominal distension. The most common presentation of chylous ascites is abdominal distension.⁵ This is a usual association because fluid in the peritoneal cavity prevents closure of the inguinal canal and signifies congenital leakage of the lymphatic fluid from the lymphatic ducts. It may progress to dyspnea due to restriction of diaphragmatic movement. Signs of malnutrition also noticed due to malabsorption of nutrients.⁶ The diagnosis is established when milky appearance of ascitic fluid is corroborated with triglycerides level more than 200 mg/dl.⁷⁻⁸ Basic evaluation of ascitic fluid cytology and peritoneal biopsy is necessary to rule

out other important possibilities of chylous ascites like malignancy and tuberculosis. CT scan is useful in traumatic or postoperative cases, showing fat fluid level, which will also be demonstrated in ultrasound.⁹ Lymphangiography and lymphoscintigraphy identify the site of leakage and lymphatic obstruction. Lymphangiography is avoided in children due to both technical difficulty and side effects, but otherwise is the imaging study of choice.²⁻⁷ In the present case, lymphoscintigraphy was used to find retroperitoneal lymphatics as the site of leakage, which subsided after conservative treatment. Contrast agent lipiodol may induce an inflammatory or granulomatous reaction on extravasations and reduces leakage.¹⁰

Treatment options aim at providing both symptomatic relief of chylous ascites and also the dealing with the underlying cause. High protein with low-fat diet along with medium-chain triglyceride supplementation can reduce the production and flow of chyle into the lymphatics.⁷⁻⁸ Medical therapy includes orlistat, somatostatin, and its synthetic derivative octreotide, that lower fat absorption from intestine. Other modalities of treatment

include lymphangiography with embolization to seal the site of leakage. This case was treated conservatively with high caloric, low fat diet and administration of octreotide with regular follow ups and long term dietary modifications. Because chylous ascites is a manifestation rather than a disease by itself, the prognosis depends on the underlying disease. Prognosis is poor when it is associated with malignancy and severe liver disease; and good in post-surgical, posttraumatic conditions and also in pediatric patients. From the beginning, although this case appeared difficult to treat due to the leakage of chyle from retroperitoneal lymphatics, it responded well to conservative treatment without surgery.

Conclusion

Chylous ascites is a rare condition in infants and presentation of bilateral inguinal hernia with umbilical hernia is very unusual. Although there were so many treatment options, our case highlights the role of conservative treatment with octreotide in successful management of this condition.

Ethical Considerations

This study is approved in its presented form by the institutional ethics committee vide Ref.no: KIIT/KIMS/IEC/673/2021.

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Conflict of interests

There are no conflicts of interest.

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