

A rare case of post traumatic chylous ascitis – managed conservatively

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Abstract

Context: Chylous ascites refers to the accumulation of lipid-rich lymph in the peritoneal cavity due to disruption of the lymphatic system secondary to traumatic injury or obstruction. **Report:** 54 years male came with h/o blunt trauma abdomen 2 days back due to fall from a two wheel. USG suggested haemoperitonium (200-300 cc). X-ray chest was normal. After 4 day of trauma one fine morning he suddenly developed breathlessness/fever/tachycaedia. USG suggested haemoperitonium (600 cc) and x-ray chest- B/L pleural effusion. C.T. (abdomen + pelvis) - haemoperitonium. no obvious organ injury. Possibility of mesenteric vessel injury. He underwent an emergency diagnostic laparoscopy. B/L ICD were inserted which drained 750ml fluid on each side. and about 1-1.5 litre free fluid in peritoneal cavity which was drained out and B/L drains were kept. On pod 7 there was milky white fluid in both abdominal drains which was appx 500ml/day. Test of the fluid showed TG-207 serum lipase-1047.he was put on TPN and kept NBM for almost 20 days. On post op day 32 the drain were dry. He was discharged home on pod 35 comfortably. **Conclusion:** Post traumatic chylous ascitis should always be managed conservatively by total bowel rest and TPN, surgery should be considered only if conservative management fails

Keywords: Chylous Ascitis.

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INTRODUCTION

Chylous ascites (ca) 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. it develops when there is disruption of the lymphatic system due to traumatic injury or obstruction (from benign or malignant causes). Asellius, in 1622, first described the lymphatic system in a dog after observing vessels in the mesentery containing a white milky fluid¹and, in 1694; morton reported the first case of ca in a 2-year-old boy who died with tuberculosis¹. It is a very rare finding and found in 1 in 187000.recently the frequency has increased

to 1 in 11584. In western countries abdominal malignancy and cirrhosis account for over two thirds of all cases. In contrast, infectious etiologies such as tuberculosis are responsible for the majority of cases in developing countries. Other causes of chylous ascites include congenital, inflammatory, postoperative, traumatic, and miscellaneous disorders. It can occur in post traumatic cases and often it is seen that it is difficult to make early diagnosis and the patient may land up in serious complications. Clinical treatment based on a high-protein low-fat diet, parenteral nutrition, and somatostatin or octreotide administration has been the initial treatment of choice. it is always advised that chylous ascitis should be managed conservatively and if conservative management fails, surgical management may be considered. Patient was a 17 years male who faced chylous ascitis following an rta with blunt trauma abdomen. He was managed conservatively by bowel rest and tpn. Today Patient is living happily with his family without any complications.

ANATOMY OF THE LYMPHATIC SYSTEM

The lymphatic system includes lymph, lymphatic vessels, lymphatic tissues, and red bone marrow (figure 1)². It is a

one-way drainage system which allows the return of excess interstitial fluids and proteins to the vascular system¹. Lymph passes from lymphatic capillaries into lymphatic vessels and then through lymph nodes into lymph trunks (figure 1). The thoracic duct, the main duct for the return of lymph to blood, is about 38–45cm long and begins as dilation called the cisterna chyli anterior to the second lumbar vertebra. The cisterna chyli receives lymph from the right and left lumbar trunks and from the intestinal trunk. Chylous effusions develop when these are injured or obstructed³.

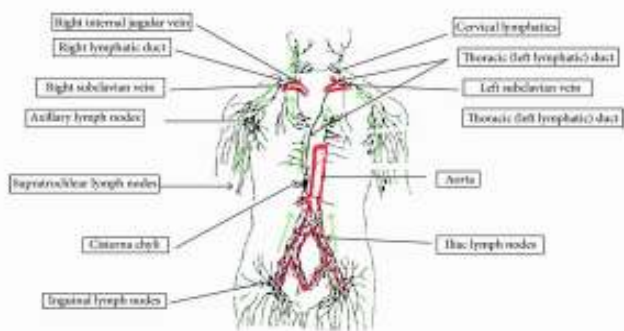


Figure 1: Routes for drainage of lymph from lymph trunks into the thoracic and right lymphatic ducts. The green arrows indicate the direction of lymph flow

CONSTITUENTS OF CHYLE

One of the major functions of the gut lymphatics is the maintenance of the interstitial fluid volume and composition and the transport of lipids. Lymph is composed of protein, lymphocytes, immunoglobulins, and products of digestion including lipids in the form of chylomicrons⁴. More than 50% of the total body lymph originates in the gut and liver⁵. In the gut, long-chain triglycerides (LCT) are converted into monoglycerides and free fatty acids (FFA) and absorbed as chylomicrons. This explains the high content of triglycerides and the milky and cloudy appearance of lymph⁶. Short-and-medium chain triglycerides (MCT), which make up approximately one-third of dietary fat, are absorbed directly by the portal venous system. This particular fact forms the basis for the use of MCT as an oral diet in the conservative management of ca. Based on animal experiments, Blalock *et al.* concluded that obstruction of the thoracic duct alone is not sufficient to cause ca⁷. Patients with a limited reserve of anastomotic channels are at greater risk of developing persistent ascites when obstruction or injury of the lymphatic channels occurs.

CASE REPORT

Patient came to us with h/o blunt trauma abdomen 2 days back due to fall from a two wheeler. He was admitted for

few hours at a local hospital and was then discharged home without any discomfort. He came to us with c/o pain in upper abdomen (dull aching radiating to back no relieving factor). His USG suggested haemoperitonium (200-300 cc). X-ray chest was normal. Decision was taken to treat patient conservatively on soft diet in surgical ward. After 4 day of trauma one fine morning Patient suddenly developed breathlessness/fever/tachycaedia. He was shifted to ICU. Portable USG suggested haemoperitonium (600 cc) and x-ray chest suggested b/l pleural effusion. C.T. (abdomen + pelvis) was done which said haemoperitonium. no obvious organ injury. possibility of mesenteric vessel injury. decision was taken to do emergency diagnostic laparoscopy. B/l ICD were inserted which drained 750ml fluid on each side. On introduction of laparoscopic camera there was about 1-1.5 litre free fluid in peritoneal cavity which was drained out. There was adherent omentum with pus like flakes at anterior wall of stomach and posteromedial surface of left lobe of liver. There were pus flakes at splenic flexure of colon with contusion at splenic flexure. there was no e/o any solid/hollow viscus/vascular injury. Drains were kept in pelvic and right subhepatic space. Procedure was uneventful and patient was shifted to ICU. Patient was shifted to soft diet on pod 5. On pod 7 there was milky white fluid in both abdominal drains which was appx 500ml/day. Biochemical test of the fluid showed tg-207 lipase-395. Serum lipase-1047. Decision was taken to treat Patient conservatively. Patient was put on total parenteral nutrition and kept nbm for almost 20 days. The drains started reducing from pod 12. on post op day 32 the drain were dry. Patient was started on diet and the drains were still dry for the next 2 days. Both the drains were removed. Patient was discharged home on pod 35 comfortably with a smile on his face.

DISCUSSION

Chylous ascitis is the extravasation of milky chyle into the peritoneal cavity. true chylous ascitis is when the ascitic fluid fat (triglyceride) content is higher than 110mg/dl. chylous ascitis can also be caused due to abdominal surgery, malignant neoplasms, spontaneous bacterial peritonitis, cirrhosis pelvicirradiation, peritoneal dialysis, abdominal tuberculosis, carcinoid syndrome, congenital defects of lacteal formation. it can be classified as true chylous ascitis, chyliform ascitis, and pseudo-chylous ascitis. In adults chylous ascitis occurs frequently with malignant condition and in children it occurs frequently due to congenital abnormalities. Chylous ascitis causes abdominal distention, abdominal pain, anorexia, weight loss, edema, weakness, nausea, dyspnea, weight gain lymphadenopathy, early satiety,

fever, night sweats. Chylous ascitis can complicate as sepsis, sudden death. Laboratory investigations in chylous ascitis shows hypoalbuminemia, lymphocytopenia, anemia, hyperuricemia, elevated alp and liver enzymes and hyponatremia. The diagnosis of chylous ascitis is made by peritoneocentesis and analysis of the ascitic fluid which shows

Colour-white or milky

Specific gravity is 1.010-1.054

Total fat content is 4-40 gm/l

Triglyceride level is elevated in all patients. more than 110mg/dl. levels as high as 8100mg/dl have been described. Glucose and amylase levels are normal. Cholesterol level is usually low. Leucocyte count is high from 232-2560cell/cu mm with a marked lymphocytic predominance. Total protein content with a mean of 3.7 gm/dl which reflects changes in serum proteins and dietary habits. Microbiologic cultures are usually negative. Other diagnostic tests are ct scan, lymph node biopsy, laparotomy, lymphangiography, barium studies of the gastrointestinal tract. Bone marrow examination. intravenous pyelography. Treatment of chylous ascitis includes treatment of primary disease, supportive measures like repeated peritoneocentesis, diuretic therapy, salt and water restriction, elevation of legs with use of supportive stockings and dietary measures. Treatment also includes a low fat diet with medium chain triglyceride supplementation which reduces the flow of chyle into the lymphatics. Use of medium chain triglyceride oil (orlistat) 15ml three times a day has shown some benefit in limited cases. Peritoneovenous shunting can also be tried successfully in some patient but shunt failure is a drawback which needs surgical revision of the shunt. Chylous ascitis can be treated laparoscopically using suture ligation and fibrin glue to control the leaks or the glue can be applied to absorbable mesh in patients with large areas of diffuse lymphatic leakage. Tips can be used in chylous ascitis due to cirrhosis of liver. Spontaneous healing has been recorded after lymphangiography. Octreotide a somatostatin analogue in a dose of 100mcg three times a day has also found to be useful as somatostatin receptors

are found in lymphatic vessels of the intestines which decrease lymph flow through these vessels. Malignant chylous ascitis requires therapy directed at the primary disease which include chemotherapy, radiotherapy and surgery. laparotomy and ligation of the leaking lymphatics, resection of the leaking small bowel segment and removal of the obstructing tumour all have been attempted with varying degrees of success. peritoneovenous shunts can also be useful. laparotomy should not be used in pediatric patients with chylous ascitis unless the condition is unresponsive to conservative therapy and a lesion that can be corrected by surgery is apparent.

CONCLUSION

Post traumatic chylous ascitis should always be managed conservatively by total bowel rest and total parenteral nutrition and surgery should be considered only if conservative management fails.

REFERENCES

1. O. O. Aalami, D. B. Allen, and C. H. Organ Jr., "Chylous ascites: a collective review," *Surgery*, vol. 128, no. 5, pp. 761-778, 2000.
2. G. J. Tortora and M. Nielsen, *Principles of Human Anatomy*, John Wiley and Sons, Hoboken, NJ, USA, 12th edition, 2012.
3. J. R. Malagelada, F. L. Iber, and W. G. Linscheer, "Origin of fat in chylous ascites of patients with liver cirrhosis," *Gastroenterology*, vol. 67, no. 5, pp. 878-886, 1974.
4. D. B. Zilversmit, "The composition and structure of lymph chylomicrons in dog, rat, and man," *The Journal of Clinical Investigation*, vol. 44, no. 10, pp. [1610-1622, 1965](#).
5. G. T. Lesser, M. S. Bruno, and K. Enselberg, "Chylous ascites. Newer insights and many remaining enigmas," *Archives of Internal Medicine*, vol. 125, no. 6, pp. [1073-1077, 1970](#).
6. M. L. Paes and H. Powell, "Chylothorax: an update," *British Journal of Hospital Medicine*, vol. 51, no. 9, pp. 482-490, 1994.
7. A. Blalock, C. S. Robinson, R. S. Cunningham, and M. E. Gray, "Experimental studies on lymphatic blockage," *Archives of Surgery*, vol. 34, pp. [1049-1071, 1937](#).

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