Massive chylous ascites following an elective repair of an abdominal aortic aneurysm: A case report

Al-Khusheh M., Blach O., Button M.

ABSTRACT

Introduction: Symptomatic postoperative chyloperitoneum is a rarely reported complication of elective abdominal aortic aneurysm surgery (AAA). Treatment, conservative versus invasive, could be challenging.

Case Report: We present a case of severe chyloperitoneum following seemingly uncomplicated elective repair of an 8 cm infra-renal AAA, in a 69-year-old male. Patient presented with a progressively increasing abdominal distension and small amount of milky white discharge around the transverse incision wound three weeks postoperatively. We discuss the diagnostic process, different management strategies attempted and outcome in light of the existing literature and our own experience.

Conclusion: While an adequate trial of conservative measures should precede any surgical intervention, our case report shows that early consideration of peritoneovenous shunt insertion for refractory chyloperitoneum provides excellent and sustained results.
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Keywords: Aortic aneurysm, Chylous, Chyloperitoneum, Peritoneovenous shunt

INTRODUCTION

Chylous ascites is a rare complication of abdominal aortic aneurysm (AAA) surgery with a few cases reported in literature. Due to their anatomical relation with the abdominal aorta, cisterna chyli injury is more common following open AAA repairs when compared to other surgeries.

We present a case of severe chylous ascites following elective AAA repair in a 69-year-old male who gradually developed abdominal distension following discharge from hospital. A conservative approach was followed by a successful peritoneovenous shunt insertion. This less invasive treatment avoided the patient having relaparotomy and ligation of leaking lymphatic vessel.
abdominal distension and small amount of milky white discharge around the transverse incision wound. Computed tomography angiogram (CTA) showed minor fatty stranding around the aneurysm sac suspicious of graft infection, treated with a course of tazocin and teicoplanin, a superficial abdominal wall collection and extensive ascites (Figure 1). The collection was drained.

Blood tests were grossly normal, except for hypoalbuminemia. An ascitic tap showed fluid triglycerides level of 36.4 mmol/L (3224.1 mg/dL), confirming a diagnosis of chylous ascites. No dietary changes were recommended by the dietician and the patient was discharged with an outpatient follow-up.

The patient was then re-admitted a month later for USS guided drainage of the worsening abdominal chyle collection; 20.7 liters of chyle were drained in total and a drain was left in situ. He was put on a high protein/medium TAG diet and advised to reduce oral fat intake. The patient was then discharged home. However, here-presented within two weeks with dyspnea, decreased drain output, abdominal distension and CT scan showed re-accumulation of ascites (Figure 2). Further four liters of chyle were drained under USS guidance. In view of the chylous ascites refractory to conservative treatment, and to avoid major operation which has considerable risks to this patient with high body mass index (BMI) and several comorbidities, a peritoneovenous shunt was inserted, with no further complications or re-accumulation of ascites, and no need for lymphangiography or re-operation, result sustained 6 months later, where patient was asymptomatic at the follow-up clinic and ultrasound scan showed no reaccumulation of the ascites.

DISCUSSION

In the context of abdominal aortic surgery, injury to the lymphatic trunk with a subsequent lymphatic leak usually follows extensive retroperitoneal space dissection, such as during repair of ruptured or inflammatory aneurysms [1–3]. Although not an uncommon complication, it rarely leads to symptomatic chyloperitoneum or chylous ascites, with fewer than 50 cases reported in the last 50 years [4].

Presentation varies based on the severity of the chyle leak, from progressive abdominal distension, pressure-related dyspnea, to widespread edema and paralytic ileus [1, 4]. However, in the majority of cases, the diagnosis is not suspected until diagnostic paracentesis is performed [5], yielding milky-white peritoneal fluid rich in triglycerides (>200 mg/dL) [6].

There is no agreed protocol for the treatment of chylous ascites following AAA surgery. Conservative management, combining a low-fat diet, medium-chain triglycerides (MCTs) regime and parenteral nutrition (TPN), is frequently advocated following initial diagnosis [1, 3, 5, 7], and is believed to promote healing by minimizing the lymphatic flow from the leaking duct [8]. Up to 80% of chylous ascites, reportedly, dry out with such approach [1, 4], and some feel that surgical intervention is only warranted after 4–6 weeks of persistent ascites [1, 9].

Insertion of a peritoneovenous shunt and suture ligation of the fistulae are two available surgical options [10]. Both carry a significant complications rate, however peritoneovenous shunt insertion is the less invasive procedure and more appropriate in patients who are unfit to undergo re-laparotomy with ligation of the leaking lymphatic vessel [4].

Favorable outcome depends on timely diagnosis and identification of the underlying pathology. The treatment of chylous ascites should therefore be selective and
tailored to the severity of patient’s condition [11]. While an adequate trial of conservative measures should precede any surgical intervention, our case report shows that early consideration of peritoneovenous shunt insertion for refractory chyloperitoneum provides excellent and sustained results.

CONCLUSION

Chylous ascites is rare after aortic surgery and manifests itself about two weeks after operation, at times after discharge from hospital. It has an indolent course, but may resolve spontaneously up to two months after operation. Its course appears not to be foreshortened by diet, including omission of fat, but can be successfully treated surgically with a peritoneovenous shunt. If done early, a protracted hospital course may be avoided.

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Author Contributions

Moutaz Alkhusheh – Substantial contribution to conception and design, Revising the article critically for important intellectual content, Final approval to the version be published

Olga Blach – Substantial contribution to conception and design, Acquisition of data, Drafting the article, Final approval to the version be published

Matthew Button – Substantial contribution to conception and design, Revising the article critically for important intellectual content, Final approval to the version be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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