





Case of the Month

Case of the Month from University of Melbourne, Australia: refractory chyle leak after retroperitoneal lymph node dissection with updated algorithm

David C. Homewood^{1,2,3} , Jonathan S. O'Brien^{1,2}, Todd Manning^{1,4} , Brian Kelly² , Philip Chan², Ben Thomas¹ and Nathan Lawrentschuk^{1,2,5} 

¹Department of Surgery, Royal Melbourne Hospital, University of Melbourne, ²Division of Cancer Surgery, Peter MacCallum Cancer Centre, ³Department of Urology, Western Health, Melbourne, ⁴Department of Surgery, Bendigo Hospital, Bendigo, and ⁵EJ Whitten Prostate Cancer Research Centre at Epworth Healthcare, Melbourne, Vic., Australia

Introduction

Retroperitoneal lymph node dissection (RPLND) is an important part of multimodal therapy for node-positive germ cell malignancy [1–4]. However, due to wide heterogeneity in patient status, disease biology and tumour locations, RPLND can be challenging and risky [1]. One such risk is iatrogenic chylous ascites (CA; 8% of cases) [1]. CA is defined as accumulation of chyle, a lipid-rich lymph fluid in the peritoneal cavity [5]. Morbidity from intra-abdominal chyle extravasation includes delayed wound healing, malnutrition, electrolyte disturbances, and immunosuppression [2,6]. This morbidity impairs postoperative recovery, delays adjuvant oncological therapy, and detrimentally affects quality of life [2,4]. Limited reliable data exist to describe the management of this complex condition [1]. We outline a difficult case and then review the literature for treatment strategies and propose a contemporary management algorithm for refractory post-RPLND CA.

Case Report

Background

A 32-year-old male presented with a testicular mass. Left orchidectomy revealed a mixed germ cell tumour comprising embryonal carcinoma, seminoma, and yolk sac tumour (pT2). Four cycles of bleomycin, etoposide and platinum (BEP) chemotherapy were administered. Subsequent CT showed residual retroperitoneal lymphadenopathy (2.5 cm).

Clinical Course

Salvage robotic RPLND was performed and the patient was discharged well on postoperative day 1. Subsequent pathology revealed 10 out of 16 lymph nodes were positive, with the largest viable deposit measuring 19 mm. Lymphovascular invasion was present, but extranodal extension was absent.

The postoperative period initially progressed without complications. However, the patient presented again to the

emergency department 5 days postoperatively with abdominal pain and ascites. He was admitted for paracentesis (10 L), which led to a diagnosis of chyle leak (Fig. 1). This was complicated and likely compounded by adjuvant paclitaxel, ifosfamide and cisplatin (TIP) chemotherapy [5]. Despite protocol-guided dietary adjustments and a short-chain fatty acid regimen (outlined by a dietician, with structured <20 g fat per day monitored by diet-tracking mobile application), and somatostatin analogue octreotide (200 mcg, s.c., three times daily), limited improvement was observed in managing the chyle leak [7]. Symptomatic re-accumulation required a total of eight ultrasonography-guided paracentesis procedures at approximately weekly intervals. Once the volume drained with these frequent procedures had plateaued for 6 weeks (~10 L), it was deemed to be refractory CA.

Intervention and Further Management

At this stage, a lymphoscintigram was conducted, demonstrating chyle leak from the left para-aortic region at L1/L2, and from a right groin lymph node (Fig. 2). After further multidisciplinary discussions, glue embolization was

Fig. 1 Ascitic tap on view in ultrasonography of the left iliac fossa during paracentesis.



Fig. 2 Lymphangiogram with successful retrograde thoracic duct lymphangiogram and identification of the leak at L1-2. Defect was embolized with glue.



performed. Initial embolization via inguinal nodal injection was unsuccessful, however, a subsequent retrograde thoracic duct lymphangiogram proved successful. A tap drain was placed after enabling discharge with functioning drain (Fig. 3).

Resolution of Chyle Leak and Clinical Outcome

Three months post-lymphangiogram and embolization, the abdominal drain was removed due to pain and reduced output (<50 mL per day for 2 consecutive days), with full diet tolerance. Subsequently, the patient's CA has resolved.

Discussion

Prompt identification and treatment of CA is essential for optimal surgical outcomes. Refractory CA (defined as 4 weeks of plateaued progress on current level of management) is

Fig. 3 Insertion of abdominal drain.



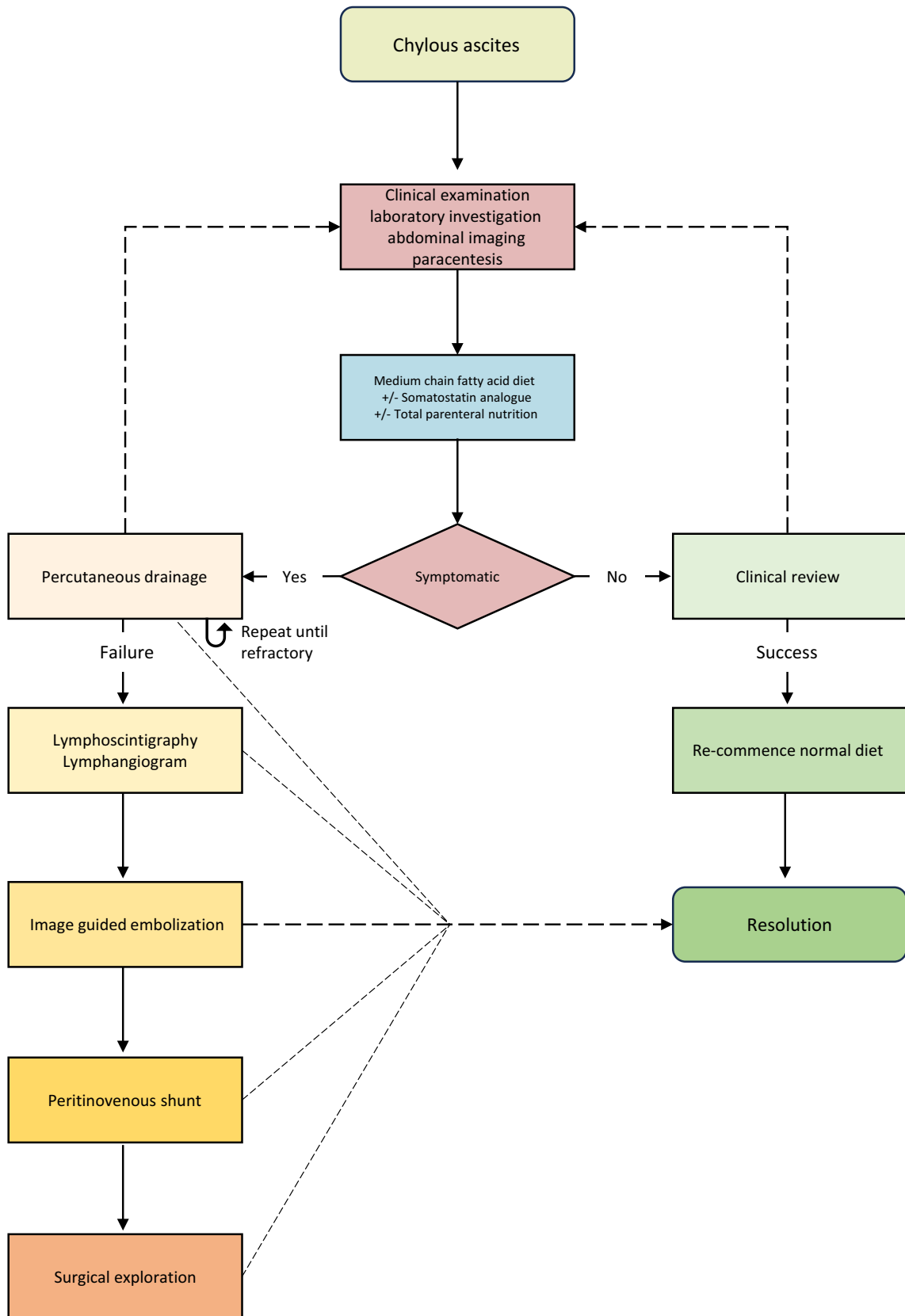
associated with high morbidity and requires multimodal management. High-volume RPLND centres should have a management protocol for this uncommon complication (Fig. 4).

Once diagnosed with CA, clinical assessment (examination and imaging) with elevated triglycerides in paracentesis fluid, we recommend commencement of a multimodal management plan with multidisciplinary involvement (senior dietician and provision of a patient information booklet on strict dietary guidelines about fat reduction). This includes a medium-chain fatty acid diet with a somatostatin analogue (e.g., octreotide, which decreases lymphatic flow) as well as consideration of total parenteral nutrition depending on the patient's nutritional state and suspected duration of fasting. If persistent, we would suggest percutaneous drainage for symptomatic relief. If refractory chyle leak is ongoing (>6 weeks) lymphoscintigraphy enables better visualization and characterization of the chyle leak, enabling informed decision making regarding the appropriateness of image-guided embolization. If image-guided embolization fails, peritoneovenous shunt or surgical exploration should be considered for definitive control of the chyle leak.

Our recommendations based on consensus for avoiding CA are:

1. Provision of a high-fat drink (e.g., milkshake) 6–8 h prior to surgery to help identify lymphatic channels intra-operatively;
2. Liberal use of clips for identified or suspected lymphatic vessels, where possible, over plain monopolar diathermy (which may not be sufficient for sealing lymphatic channels);

Fig. 4 Algorithm for managing chylous ascites after retroperitoneal lymph node dissection.



3. Whilst often used, there is currently insufficient evidence to recommend newer bi-polar vessel sealing technologies or haemostatic agents (fibrin sealants etc.) in preventing CA.

Acknowledgements

Open access publishing facilitated by The University of Melbourne, as part of the Wiley - The University of Melbourne agreement via the Council of Australian University Librarians.

Disclosure of Interests

None declared.

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Correspondence: David C. Homewood, Department of Surgery, Royal Melbourne Hospital, University of Melbourne, Royal Melbourne Hospital, 300 Grattan st, Melbourne 3000, Vic., Australia.

e-mail: davidhom13@gmail.com

Abbreviations: CA, chylous ascites; RPLND, retroperitoneal lymph node dissection.

Supporting Information

Additional Supporting Information may be found in the online version of this article:

Fig. S1. Dynamic insertion of pleurex drain.