

CASE REPORT

Iatrogenic inguinal chyle fistula: a rare case report

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Abstract

Chyle fistula may be common in the neck and thorax region but it is a rare entity in the inguinal region. The rarity of the incidence of chyle fistula and the tremendous response to conservative management are the important aspects to be remembered. We hereby report a case of iatrogenic inguinal chyle fistula complicating a femoral vein cannulation.

Keywords: lymphatic, fistula, chyle, iatrogenic, femoral, venous cannulation.

Introduction

Chyle fistula is a rare and has serious surgical complications. It usually occurs following neck surgery, in about 1–2.5 % of radical neck dissection [1]. It may also complicate thoracic and abdominal surgery. Chyle fistula rarely occurs in the inguinal region. It may also occur following non-surgical procedures like venopuncture. Once, there is leakage of chyle, it may cause of the disturbance of the metabolites and the electrolytes in the body. The present report is a rare case of an iatrogenic inguinal chyle fistula as a complication of a femoral vein cannulation.

Patient, Methods and Results

A 23-year-old woman presented with dyspnea and multiple cervical lymphadenopathy. She was diagnosed to have Hodgkin's lymphoma as evident from cervical lymph node biopsy and was scheduled to start chemotherapy. Meanwhile, she developed an acute airway obstruction secondary to tracheal compression, which led to a cardio-respiratory arrest. She was intubated and put on mechanical ventilation with inotropic support. She was subsequently managed in an intensive care unit (ICU). After a few attempts, a central venous line was inserted via the right femoral vein. One week after its insertion, pus-like discharge was observed from the site of the femoral line (Figure 1).

Initially, it was diagnosed as infected venopuncture site and was treated with antibiotics. However, the amount of the discharge increased day by day, hence an ultrasound was requested. The ultrasound showed no subcutaneous collection. The fluid was observed to be clear milky-yellow in appearance, ranging from 300–700 mL per day collected in a stoma bag (Figure 2).

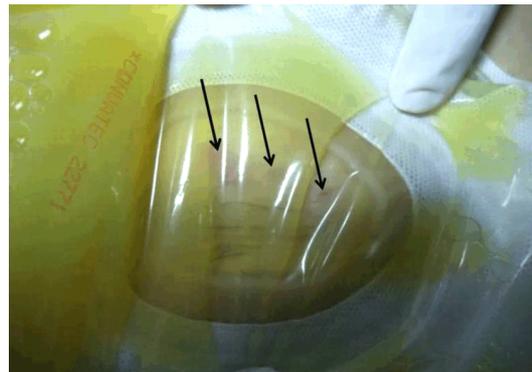


Figure 1 – Multiple puncture sites (marked with arrows) seen with evidence of chyle leak over the right inguinal region.



Figure 2 – Patient with right inguinal chyle fistula collected in a stoma bag.

The culture of the fluid was negative, and its biochemical analysis was consistent with chyle. The albumin was 29 g/L with hemoglobin of 10 g/L. She was on high protein enteral feeding and her nutritional

status improved. A diagnosis of inguinal chyle fistula was made, most probably due to injury to the lymphatic vessel during the repeated attempts of venous cannulation.

The chyle fistula was then managed conservatively with application of a pressure dressing. Following 48 hours of application of the pressure dressing, the fistula sealed spontaneously with no evidence of further leak. Currently, she was undergoing chemotherapy in the hematology unit for her lymphoma.

Discussion

Lymphatic injury results in chylous leak and it is a potential complication that may arise due to trauma or surgery in the neck, chest, or abdomen region. In the thorax, the variable position of the thoracic duct with regard to its anatomical location and its fragile composition makes it prone to injury during any operation [2]. It is clinically detected in the wound drainage as milky fluid [3]. Of this, 75% of cases occur on the left side of the neck [4]. It may also occur following dissection of the common femoral artery in the scrape triangle because of operative transaction of overlying lymphatics [5].

In the present case, the patient had multiple enlarged cervical, supraclavicular and mediastinal lymphadenopathy causing upper airway obstruction. These enlarged nodes had most probably resulted in backflow of the lymphatics downwards to the pelvis causing engorgement of the inguinal lymphatic vessel, which lead to injury, easily. Initially, the leak was not obvious but as the milky-yellow discharge was getting more, it was misdiagnosed as an abscess. Despite the antibiotics and removal of the femoral line, the discharge remained. The biochemical analysis confirmed the diagnosis of an iatrogenic inguinal chyle fistula.

An untreated chyle leak may result in significant morbidity and mortality. It leads to hypovolemia, electrolyte imbalance, hypoproteinemia and lymphopenia [3, 4]. These leads to management and treatment challenges. It is universally agreed that the optimum management of a chylous fistula is prevention. When it happens, the main aim of treatment is to reduce the chyle flow and thus allow closure of the fistula and the same time maintains the patient's nutritional status. The key points are adequate drainage, pressure dressings, bed rest and nutritional modifications. Following chyle leak, there might be disturbance in the fluids and electrolytes in the body and researchers have even reported delayed wound healing because of such leak [2]. The total chyle flow per day is 2–4 liters [3, 4]. Therefore, we opine that in patients with chyle fistula volume-status and electrolyte, albumin and hemoglobin should be carefully monitored during course of treatment.

Pressure dressings are used with the main aim of

preventing the chyloma formation. However, it is often difficult to apply an effective pressure dressing especially in patients who had undergone neck dissections. Therefore, few centres recommend continuous suction dressing to prevent chyloma formation [4]. In our case, the chylous fistula was in the right inguinal region and pressure dressing was feasible and effective without any difficulties. It was an unremarkable outcome from the dressing as no more lymphatic discharge was noted following 48 hours of pressure dressing. The patient's good nutritional status played a significant role in the fast healing process of the fistula [6].

Compression dressing reduced the chyle flow and subsequently allowed time for healing of the injured lymphatic vessel to take place and lead to spontaneous closure of the fistula. If the conservative management fails, other options include percutaneous instillation of sclerosing agents such as tetracycline [7, 8] or even surgical ligation of the lymphatic vessel [4].

There are previous reports of chyle fistula following a venous cannulation [9]. The present case is another documented case of iatrogenic inguinal chyle fistula following a venous cannulation.

Conclusions

In the inguinal region, chyle fistula is extremely rare condition. The present case was a humble attempt to highlight the clinical features and the management of chyle fistula as a complication of a femoral vein cannulation.

References

- [1] de Gier HH, Balm AJ, Bruning PF, Gregor RT, Hilgers FJ, *Systematic approach to the treatment of chylous leakage after neck dissection*, Head Neck, 1996, 18(4):347–351.
- [2] Ilczyszyn A, Ridha H, Durrani AJ, *Management of chyle leak post neck dissection: a case report and literature review*, J Plast Reconstr Aesthet Surg, 2011, 64(9):e223–e230.
- [3] Rollon A, Salazar C, Mayorga F, Marin R, Infante P, *Severe cervical chyle fistula after radical neck dissection*, Int J Oral Maxillofac Surg, 1996, 25(5):363–365.
- [4] Hehar SS, Bradley PJ, *Management of chyle leaks*, Curr Opin Otolaryngol Head Neck Surg, 2001, 9(2):120–125.
- [5] Giovannacci L, Renggli JC, Eugster T, Stierli P, Hess P, Gürke L, *Reduction of groin lymphatic complications by application of fibrin glue: preliminary results of a randomized study*, Ann Vasc Surg, 2001, 15(2):182–185.
- [6] Smoke A, Delegge MH, *Chyle leaks: consensus on management?* Nutr Clin Pract, 2008, 23(5):529–532.
- [7] Metson R, Alessi D, Calcaterra TC, *Tetracycline sclerotherapy for chylous fistula following neck dissection*, Arch Otolaryngol Head Neck Surg, 1986, 112(6):651–653.
- [8] Kent RB 3rd, Pinson TW, *Thoracoscopic ligation of the thoracic duct*, Surg Endosc, 1993, 7(1):52–53.
- [9] Jadhav AP, Stahlheber C, Hofmann H, *Traumatic chyle leak: a rare complication of left internal jugular venous cannulation*, Am J Med Sci, 2011, 341(3):238–239.

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