

CASE REPORT

Postoperative Lymphorrhagia- a Possible Complication Following Cephalic Duodenopancreatectomy

Adrian Tudor^{1,2}, Marian Botoncea^{1*}, Cedric Kwizera¹, Bianca Cornelia Tudor^{3,4}, Cosmin Nicolescu^{1,2}, Călin Molnar^{1,5}

1. First Surgical Department, Emergency Clinical County Hospital of Târgu Mures, Mures, Romania

2. Anatomy and Embryology Department, University of Medicine, Pharmacy, Sciences and Technology of Targu Mures, Romania

3. Lab Medicine, Clinical County Hospital of Târgu Mureș, Romania

4. Microbiology, virology and parasitology Department, University of Medicine, Pharmacy, Sciences and Techology of Târgu Mureș, Romania

5. Surgery I Department, University of Medicine, Pharmacy, Sciences and Technology of Târgu Mures, Romania

Surgery associated with lymphadenectomy may sometimes result in a lymphorrhagia, which usually resolves spontaneously within a few days, sometimes becoming a refractory complication to the treatment. In the case of large flows, particular attention should be paid to hydro-electrolytic and protein losses. We present the case of a patient with persistent lymphorrhagia after a cephalic duodenopancreatectomy for a pancreatic head tumor. From the 5th postoperative day, the patient had a milky-like secretion on the subhepatic drainage tube. The discharge rate was variable, between 500 and 1500 ml per day, requiring parenteral administration of amino acids, plasma and electrolyte solutions. The postoperative progression was slowly favorable, with the patient discharge on the 25th day following surgery. There are several treatment options for a lymphorrhagia following an extended lymphadenectomy, from intensive parenteral therapy to peritoneal-venous shunt or ligation of the lymphatic vessel responsible for the production of lymphorrhagia. In this case the conservative treatment had a favorable result.

Keywords: lymphorrhagia, cephalic duodenopancreatectomy, rare complication

Received 14 February 2019 / Accepted 11 June 2019

Introduction

Lymphorrhagia was defined as lymphatic extravasation, in the peritoneal cavity, of a milky-like liquid, rich in triglycerides (1). Postoperative lymphorrhagia has been reported following abdominal surgery accompanied by extensive lymphadenectomy, for example after duodenopancreatectomy (2). Lymphatic extravasation is the result of lymphatic vessels damage, especially in the case of lymphadenectomy in the hepatoduodenal ligament (3). An increased risk of lymphorrhagia, compared to other abdominal surgeries, was found after lymphadenectomy associated with cephalic duodenopancreatectomy (4). In most cases, postoperative lymphorrhagy are spontaneously reversible within a few days. In the case of persistent lymphorrhage, various treatment modalities have been described, from conservative methods to surgical interventions. In this case report we present the case of a patient with cephalic duodenopancreatectomy, followed by a persistent lymphorrhagia, successfully treated by conservative methods.

Case presentation

A 65-year-old male patient was hospitalized in our clinic with the diagnosis of mechanical jaundice with total bilirubin of 8.71 mg / dl and direct bilirubin of 5.69 mg / dl, the transaminases having elevated values - ALT 144 U / L, AST 76 U / L. Abdominal ultrasound revealed liver steatosis, 93/54 millimeter gall bladder, and some endoluminal mil-

limetric stones. Computed tomography showed a leaky gall bladder with sludge with a moderate dilatation of the intrahepatic bile ducts and the common bile duct was dilated to 18 millimeters, without mentioning the cause of the dilatation. After a proper preoperative preparation, surgical intervention was performed, revealing, intraoperatively, a pancreatic head tumor of about four centimeters, imprecisely defined, of tough consistency. Cephalic duodenopancreatectomy was performed with end-to-side pancreatico-gastric anastomosis in a telescoping fashion and double-purse string, end-to-side hepatico-jejunal anastomosis and end-to-side gastro-jejunal anastomosis, subhepatic drainage. The histopathological examination revealed a moderately differentiated ductal adenocarcinoma which goes beyond the pancreatic capsule, invading the muscular layer of the duodenum without lymph nodes metastasis. The postoperative intestinal transit resumed on the 4th day and the oral nutrition of the patient began. From the 5th day postoperatively, a milky-like secretion appeared on the subhepatic drainage tube, pleading for a lymphorrhagia. The level of amylase in the drained fluid was metered, the level being 18 U / L, thus excluding the suspicion of a fistula in the pancreatic anastomosis. Drainage flow was between 500-1500 milliliters per day. The protein level in the drained liquid was 3.2 g / dl. Parenteral loss compensation, human albumin administration, amino acids, electrolytes have been established. From the 10th day after the onset of lymphorrhagia, the subhepatic drainage tube was intermittently blunted, the patient not presenting any abdominal symptoms. The drainage flow was progressively reduced, so the drainage tube was

* Correspondence to: Marian Botoncea
E-mail: botonceam@gmail.com

suppressed on the 22nd postoperative day. The patient did not show abdominal symptoms, the ultrasound control not highlighting intraperitoneal fluid collections.

Discussion

Postoperative lymphorrhagia is a rare complication in abdominal surgery. The occurrence of this complication may prolong the duration of hospitalization, due to metabolic disorders, protein losses, and sometimes septic complications (5). Among the risk factors for the occurrence of postoperative lymphorrhagia were dissections in the para-aortic area and early enteral feeding (6). Some studies have suggested the diagnostic criteria for postoperative lymphorrhagia: lack of hemorrhage of the drained fluid, absence of increased levels of amylase and bilirubin, presence of increased levels of triglycerides, and mild or creamy appearance of the fluid (7). Talluri describes abdominal distension as the most common symptom, and the triglyceride level in ascitic fluid over 110 mg / dl as a diagnostic element (8). A review from the literature published by Lv et al showed that the lymphatic leakage is due to the damage of the lymphatic channels during the lymph node dissection (9). In the case presented in this paper, no surgical intervention was needed, the parenteral loss compensation therapy, intermittent obliteration, and then removal of the drainage tube had a favorable result. Although the mechanism of lymphorrhagia has not been clearly described, favorable results have been reported in the treatment of postoperative lymphorrhagia following the use of somatostatin and octreotide (10,11). In a study which included patients with D2 lymphadenectomy for gastric cancer, the treatment of the chylous ascites included interruption of oral nutrition, total parenteral nutrition, administration of somatostatin analogues and diuretics, medium chain triglycerides and clamping or removal of the drainage tube (12). In case of persistent lymphorrhagia after total pancreatectomy, Bartoli describes as effective therapy the intermittent obliteration of abdominal drainage (3). Inoue reports the performance of a peritoneal-venous shunt in a refractory lymphorrhagia after a liver resection (13), while other authors have recourse to ligation of the lymphatic fistula, using a dye to highlight it (14). Lv et al has made reference to Shao's study that suggests that the lymphatic leakage is a self-limiting complication which can heal within 2 to 3 weeks without other intervention (15). There are studies suggesting that the surgical approach with the direct ligation of the lymphatic fistula should be a first treatment option for postoperative lymphorrhagia, while others plead for an initially conservative approach, as has been shown in the case presented in this paper and to undergo surgical treatment in the refractory cases.

Conclusion

In the case presented in this paper, intensive parenteral loss compensation treatment, concomitant with intermittent

obliteration and then removal of peritoneal drainage, had favorable results.

Authors' contribution

Adrian Tudor (Methodology; Project administration; Writing – original draft)

Marian Botoncea (Conceptualization; Investigation)

Cedric Kwizera (Investigation; Writing – original draft)

Bianca Cornelia Tudor (Formal analysis; Investigation)

Cosmin Nicolescu (Investigation; Methodology)

Călin Molnar (Conceptualization; Supervision; Writing – review & editing)

Conflicts of interest

None to declare.

Informed consent

Our patient provided his written consent to participate in the study. This study was approved by the Ethics Committee.

References

1. Yamada T, Jin Y, Hasuo K, et al. Chylorrhea following laparoscopy assisted distal gastrectomy with D1+ dissection for early gastric cancer: A case report. *Int J Surg Case Rep* 2013; 4:1173-5
2. Kollmar O, Schilling MK, Buchler MW. Treatment of chyloperitoneum after extended lymphatic dissection during duodenopancreatectomy (review). *Int J Pancreatol* 2000; 27:83-7
3. Bartoli M, Baiocchi GL, Portolani N, Giulini SM. Refractory hepatic lymphorrhea after total pancreatectomy. Case report and literature review of this uncommon complication. *International Journal of Surgery Case Reports*. 2015; 16:134-136
4. Strobel O, Hinz U, Gluth A et al. Pancreatic adenocarcinoma: number of positive nodes allows to distinguish several N categories. *Ann Surg* 2015; 261: 961-969
5. Yol S, Bostanci EB, Ozogul Y, et al. A rare complication of D3 dissection for gastric carcinoma: chyloperitoneum. *Gastric Cancer* 2005; 8:35-8
6. Kuboki S, Shimizu H, Yoshidome HH et al. Chylous ascites after hepatopancreatobiliary surgery, *Br J Surg* 2013;100:522-7. 10.1002/bjs.9013
7. Griniatsos J, Dimitriou N, Kyriaki D, et al. Chylorrhea complicating D2+a gastrectomy: review of the literature and clarification of terminology apropos one case. *Chin Med J (Engl)* 2010; 123:2279-83
8. Talluri SK, Nuthakki H, Tadakamalla A, Talluri J, Besur S, Chylous Ascites. *N Am J Med Sci*. 2011 Sep; 3(9): 438-440
9. Lv S, Wang Q, Zhao W, et al. A review of the postoperative lymphatic leakage. *Oncotarget*. 2017;8(40):69062-69075
10. Huang Q, Jiang ZW, Jiang J, et al. Chylous ascites: treated with total parenteral nutrition and somatostatin. *World J Gastroenterol* 2004; 10:2588-91
11. Bhatia C, Pratap U, Slavik Z. Octreotide therapy: a new horizon in treatment of iatrogenic chyloperitoneum. *Archives of Disease in Childhood*. 2001;85(3):234-235
12. Ilhan E, Demir U, Alemdar A, Ureyen O, Eryavuz Y, Mihmanli M, Management of high - output chylous ascites after D 2 - lymphadenectomy in patients with gastric cancer: a multi-center study. *Journal of Gastrointestinal Oncology*. 2016;7(3):420-425.
13. Inoue Y, Hayashi M, Hirokawa F, Takeshita A, Tanigawa N, Peritoneovenous shunt for intractable ascites due to hepatic lymphorrhea after hepatectomy, *World J. Gastrointest. Surg*. 2011;3(1): 16-20
14. Tanaka K, Ohmori Y, Mohri Y et al. Successful treatment of refractory hepatic lymphorrhea after gastrectomy for early gastric cancer, using surgical ligation and subsequent OK-432 (Picibanil) sclerotherapy. *Gastric Cancer*. 2004; 7(2):117-21.
15. Shao P, Meng X, Li J, Lv Q, Zhang W, Xu Z et al. Laparoscopic extended pelvic lymph node dissection during radical cystectomy : technique and clinical outcomes . *BJU International* 2011 ;108: 124- 128.