EJGO European Journal of Gynaecological Oncology

# Rare case of concurrent severe chylous ascites after radical surgery for cervical cancer

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**Summary**

*Background:* Cervical cancer case supervened with chylous ascites after extensive hysterectomy is rarely reported, and is very difficult to deal with. *Case:* A 40-year-old female patient complained of a small amount of vaginal bleeding after intercourse over the past seven years, and then was diagnosed as cervical squamous cell carcinoma IIa, with moderate anemia and leucopenia. The patient underwent radiotherapy and was given leucogen and iron dextran to elevate blood leukocyte at the same time. Considering blood routine examination was normal, the patient underwent extensive hysterectomy, bilateral adenectomy, and pelvic lymphadenectomy. By day 30 postoperatively, chyluria test showed positive which indicated chylous ascites in the patient. Since then, the patient successively had hypoproteinemia, electrolyte imbalance, high fever, fungal infection, etc. Very fortunately, the patient made a remarkable recovery from the serious condition after a series of flexible anti-infection and effective supportive treatments. *Conclusion:* Chylous ascites leads to the loss of lipid, plasma protein, fat-soluble vitamins, and subsequently malnutrition. Firstly, the primary disease should be dealt with through chemotherapy or radiotherapy for malignant tumors. Anti-infective therapy can prevent intra-abdominal infections and the occurrence of bacteremia. Considering postoperative treatments last longer in this case, the authors changed antibiotics several times to avoid drug resistance. However, the patient unfortunately had complication of fungal septicemia due to the serious condition, which should to be avoided next time. In addition, the balance of water, electrolyte, and acid-base is particularly important in the overall treatment.

*Key words:* Gynecological oncology; Chylous ascites; Cervical cancer; Peritoneal drainage.

## Introduction

Chylous ascites are a clinical symptom that is rare and difficult to deal with, and mainly caused by surgery, trauma, inflammation, cirrhosis, tuberculosis, lymphatic malformations, lymphatic cancer, and other causes of reflux disorder or lymphatic rupture [1]. Tulunay *et al.* reported chylous ascites with an incidence of 2% after staging surgery for gynecological malignancies [2]. Chylous ascites are not a common complication after radical resection of cervical cancer, because there are only a few reports of such cases. The present cervical cancer case the authors report supervened with chylous ascites after extensive hysterectomy, bilateral adenectomy, and pelvic lymphadenectomy. They observed the evolution and early prognosis of lesions.

## Case Report

A 40-year-old female patient complained of a small amount of vaginal bleeding after intercourse over the past seven years. The patient visited the present hospital due to large amounts of vaginal bleeding after intercourse on July 29th, 2012, and underwent cervical biopsy pathology in the out-patient department, which reported: moderately differentiated squamous cell carcinoma in cervical tissue. She was admitted to the present hospital on August 13th, 2012. The patient had no history of tuberculosis, hepatitis, diabetes, and hypertension. Gynecological examination: a small amount of vaginal blood, cervical hypertrophy, moderate erosion, cauliflower-like tissues about four cm in diameter with contact bleeding on lateral lip. Auxiliary examination: urine occult blood (++++) and there were no obvious abnormalities in routine stool test, liver and kidney function, blood coagulation function, tumor markers, and chest radiograph. Abdominal B-ultrasound showed: gallbladder polyps. Breast scan: bilateral breast hyperplasia. ECG: sinus rhythm and ST-T changes. Infectious immune parameters: negative. Blood routine examination: WBC $3.10\times10^9$/L, N 49.00%, RBC $3.15\times10^{12}$/L, Hb 74 g/L; this patient was diagnosed as follows: cervical squamous cell carcinoma II a, moderate anemia, leucopenia. During August 14th to 25th, 2012, the patient underwent radiotherapy using 192Ir with the radiation dose: 20GY for four times, and was given leucogen and iron dextran to elevate blood leukocyte at the same time. Reviewed the hemogram after radiotherapy: WBC $3.50\times10^9$/L, N 62.20%, RBC $3.43\times10^{12}$/L, Hb 82 g/L. On September 11th, 2012 the patient underwent extensive hysterectomy, bilateral adenectomy, and pelvic lymphadenectomy. The authors found pelvic lymph nodes and abdominal paraaortic lymph nodes intumescent during operations, and placed a drainage tube in abdominal cavity, gave ceftizoxime, and ornidazole to prevent infection after operations. By day 6 postoperatively, peritoneal drainage fluid turned from light yellow to milky white, and gradually increased to 1,300 ml, a maximum capacity of 3,450 ml, followed by hypoproteinemia and electrolyte imbalance. Immediately, the patient underwent adequate abdominal drainage, given transfusion of fresh plasma, and albumin to cor-

Revised manuscript accepted for publication April 22, 2014

rect hypoalbuminemia, was given potassium chloride and sodium chloride to correct electrolyte balance, attached to an intravenous drip with fat emulsion, amino acids, and vitamins to support compound treatment, and given low-fat, high protein diet for adjuvant therapy. For the next eight days, the amount of chylous fluid drained was maintained between 700-1,500 ml per day. Intra-abdominal fluid examination showed higher protein content suggesting that was exudate. By day 27 after operations, implementation of intravenous infusion of plasma and albumin was continued to correct hypoalbuminemia, with total parenteral nutrition therapy, subcutaneous octreotide 0.1 mg, q.d. to reduce lymph production. Considering the intra-abdominal drainage lasted too long, the authors changed the antibiotics to prevent infection. By day 29 after operations, peritoneal drainage fluid amount increased to 4,000 ml, the chyle test showed negative and adipocyte was not found. The chyluria test showed positive next day. Pleural effusion was TG 10.54 mmol/L and the above treatment was continued. By day 31 after operations, the patient's temperature was 39.8 °C. Chyle test for review showed positive. Total parenteral nutrition was suspended. Imipenem-cilastatin one g, tid, combined with ornidazole was given to strengthen anti-inflammatory effect. Recombinant human granulocyte-stimulating factor was injected via subcutaneous to promote leukocyte generation, Albumin and human serum gamma globulin were infused to improve immunity. Testosterone propionate was used to promote the synthesis of protein and water-soluble and fat-soluble vitamins were added to support the treatment. The 29$^{th}$ day after operations, fungal septicemia occurred, temperature continued at 39.3°C. Left lower lung had slight rales and a small amount of pleural effusion were showed in Chest X-ray examination. Type-B ultrasonic showed: cholecystolithiasis, the spleen was slightly larger, with abdominal and pelvic effusion. Fungal infection was revealed in blood culture. Candida parapsilosis was found in urine culture. Reviewed hemogram: WBC $3.7\times10^9$/L, CRP 75 g/L, ESR 25 mm/L, TP , AL 19.9 g/L, $Na^+$ 128.6 mmol/L, $K^+$ 3.3 mmol/L. Ornidazole was stopped and intravenous catheter was replaced, then continued to perform the above treatments. Fluconazole 0.2 g, qd, was infused as an anti-fungal treatment. Fresh plasma was infused to correct hypoproteinemia. Sodium and potassium were supplied to maintain electrolyte balance. Thus the patient's condition gradually improved. By day 54 after operations the patient complained of abdominal distension. Shifting dullness was positive and intravenous fluids were stopped. Furosemide was given by intravenous injection for diuresis. The next day, the patient underwent radiation therapy five times with 5 GY, and discharged. The patient was re-hospitalized on November 22$^{th}$ 2012, and underwent abdominal paracentesis and drained milky white liquid about 1,000ml by day 4. Temperature gradually became normal after drainage. Abdominal distension gradually eased. Shifting dullness turned to be negative. By day 6 after drainage, the patient had no abdominalgia, no fever, no nausea and vomiting, no tenderness, and rebound tenderness. Reviewed hemogram: WBC $5.0\times10^9$/L, Hb 86 g /L. Considering the patient's condition was stable, peritoneal fluid significantly reduced, the patient was discharged and at six months follow-up, no obvious abnormalities were seen.

## Discussion

The majority of reports on chylous ascites as a postoperative complication involve patients who underwent abdominal aortic surgery, lymphadenectomy for testicular and renal cancers, or pelvic surgery for advanced gynecologic malignancies [3].

Any surgery involving the retroperitoneal area or mesenteric root, or the anatomical variation of cisterna chyli or lymphatic plexus may initiate chylous ascites that caused by the lesion of intestinal lymphatic vessels, lymphatic trunk or chylocyst [4]. The present authors analyzed the reason for concurrent severe chylous ascites after operations may be related to the following factors: four to six days after radical resection of cervical cancer, chylous ascites could be extracted from peritoneal drainage fluid; due to lymphatic vessels rupture caused by lesions during the operation which may locate in lymphatic trunks, chylocyst or the lymph capillaries with no ligation; postoperative blocking of chylocyst or thoracic duct leading to lymphatic circumfluence suffocation, result in expansion and rupture of retroperitoneal lymphatic vessels; inflammation could cause lymph nodes hyperemia and lymphatic vessel wall edema, which induce lymphatic vessel stenosis or blocking, chyle permeate into abdominal cavity; others reasons may be related to the hypoproteinemia or poor physique.

Chylous ascites lead to the loss of lipid, plasma protein, fat-soluble vitamins. and subsequently lead to malnutrition. Therefore, measures should be adopted as soon as possible to treat chylous ascites effectively: (I) the primary disease should be dealt with and perform chemotherapy or radiotherapy for malignant tumors. In this case, radiotherapy using 192Ir as the radiation source was performed in time when the patient could tolerate it; (II) change the dietary structure to high-calorie, high protein, low fat, low sodium type. The diet should contain only medium-chain triglycerides, which can be directly absorbed by the intestinal cells and pass through the portal vein in the form of free fatty acids and glycerol, reducing the amount of thoracic duct chylous fluid; (III) parenteral nutrition can improve the nutritional status so as to provide necessary basic conditions for tissue repair and wound healing. At the same time, total parenteral nutrition can inhibit the secretion of gastrointestinal fluid and reduce the formation of lymph to ensure gastrointestinal tract to get sufficient rest, and promote the healing [5]; (IV) it is reported that somatostatin can be applied when chylous ascites occur, which can significantly reduce the drain, reduce production of intestinal lymph to speed up healing. Somatostatin or its analog (octreotide) showed high effectiveness in patients with protracted symptom of chylous ascites [6-7]. In this case, chylous ascites was so serious that the authors used somatostatin and got obvious effect; (V) anti-infective therapy can prevent intra-abdominal infections and the occurrence of bacteremia. Considering postoperative treatments last longer in these cases, antibiotics should be changed several times to avoid drug resistance and to prevent fungal septicemia as in the present case; (VI) the balance of water, electrolyte. and acid-base is particularly important to the overall treatment. We should be familiar with the distribution of retroperitoneal lymph nodes and its drainage regularity, and pay attention to distinguish

lymphatic vessels, observe carefully whether there is milky white liquid flowing out, ligate the cutt off and isolated tissues one by one in operation. Only by dong so, will the occurrence of chylous ascites be avoid.

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