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Case Report

Postoperative Lymphocele in Ovarian Cancer: Radiologic Features and Diagnostic Challenges

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Received: July 22, 2025; **Published:** July 31, 2025

Abstract

Lymphocele, a collection of lymphatic fluid within a non-epithelialized cavity, is a rare surgical complication, most commonly associated with pelvic lymphadenectomy. It may also occur after other procedures involving lymphatic injury. We report a case of a left subphrenic lymphocele following surgery for ovarian cancer identified via CT scan and confirmed by ultrasound. This case highlights its clinical and radiological features.

Keywords: *Lymphocele; Primary Ovarian Cancer; Lymphadenectomy*

Introduction

lymphocele is a cystic mass that can develop in the retroperitoneal space as a result of lymphatic fluid accumulation, most often following systematic pelvic and/or para-aortic lymphadenectomy. Although such lesions may arise in any region where lymphatic vessels have been disrupted-whether by surgical intervention or trauma-they are most commonly identified in the retroperitoneum [1].

Retroperitoneal lymphoceles typically appear between 1 and 17 months after the initial surgical procedure and are often asymptomatic, with many cases resolving spontaneously over time [2]. While many lymphoceles remain benign, some can lead to significant morbidity, and in rare instances, may even be life-threatening.

We recently encountered a case of retroperitoneal lymphocele in a patient diagnosed with primary ovarian cancer. In this article, we present the characteristic radiological findings of a rare left subphrenic lymphocele that developed following surgery for ovarian cancer.

Case Report

A 69-year-old woman, underwent comprehensive staging surgery for suspected primary ovarian cancer, including complete pelvic and para-aortic lymphadenectomy. Histopathological analysis confirmed papillary serous ovarian carcinoma. At diagnosis, her CA-125 level exceeded 550 U/mL. Postoperatively and during the course of chemotherapy, the patient reported the development of a large abdominal mass extending along the left umbilical region. The patient did not report any discomfort or sensation of heaviness.

Pelvic ultrasound revealed a cystic lesion on the left side, characterized by fine internal echoes and thin septations, with no detectable vascular flow on color doppler imaging. These sonographic features were consistent with the diagnosis of a lymphocele (Figure 1).

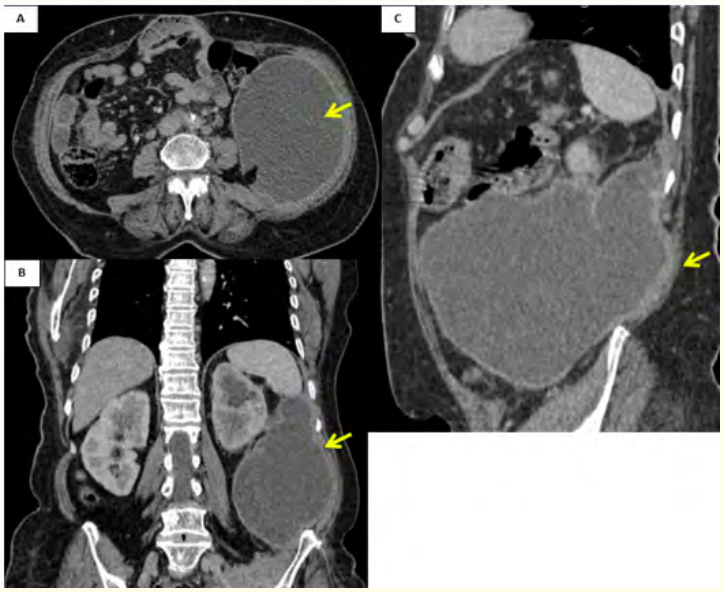

Figure 1: *Axial (A), coronal (B), and sagittal (C) contrast-enhanced CT images reveal a well-circumscribed hypodense mass with a thin, non-enhancing wall located in the left subphrenic region (yellow arrow), causing mass effect on the left kidney.*

To further characterize the lesion, an abdominal CT scan with contrast was performed (Figure 2), revealing a well-defined, 17 cm diameter, low-density fluid collection (12 HU) in the left abdominal region.

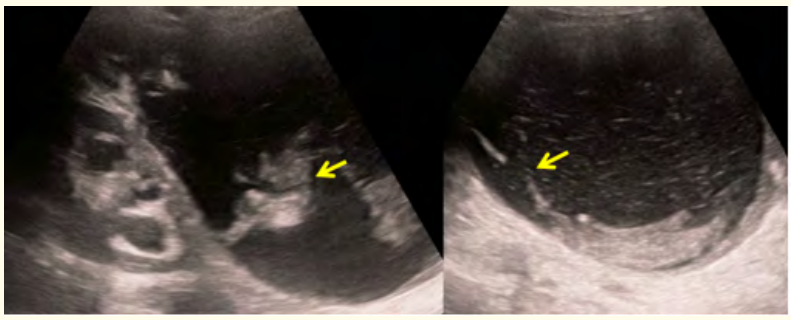

Figure 2: *Ultrasound images showing a cystic mass in the subphrenic region with echogenicity and internal septations (yellow arrow) adjacent to the left kidney.*

At the time, the CA125 tumor marker was within normal limits. Given the suspicion of a retroperitoneal lymphocele, ultrasound-guided catheterization was performed, allowing for drainage and evacuation of the cyst. The catheter was removed after one week, and the patient proceeded with the next chemotherapy cycle while receiving concurrent antibiotic therapy. Cytological analysis of the aspirated fluid revealed a marked lymphocytic predominance, with approximately 90% lymphocytes per microscopic field, suggestive of lymphocytosis.

Two weeks later, follow-up ultrasound detected a recurrent cystic lesion measuring 5 to 6 cm, which was again successfully drained via catheterization. At the end of the chemotherapy regimen, the patient remained asymptomatic, with normal tumor marker levels and unremarkable follow-up ultrasound at the 4-month evaluation.

At the most recent evaluation, the lymphocele had shown no significant change in size, and the patient remained asymptomatic throughout the follow-up period.

Discussion

A lymphocele often develops as a postoperative complication following pelvic lymphadenectomy, commonly performed during the staging of urologic or gynecologic cancers. It typically forms below the cisterna chyli and is most frequently observed within 3 weeks after surgery, with incidence rates reaching up to 15%. They may be entirely asymptomatic; probably a large number are subclinical and regress spontaneously. These collections consist of serous fluid and exhibit distinct imaging characteristics. On ultrasound, a lymphocele appears as an anechoic, cystic lesion situated near vascular structures in the parailiac area or close to surgical clips. It may also contain fine septations or internal debris [2].

On CT imaging, uncomplicated lymphoceles appear as hypodense, well-defined cystic lesions. In contrast, complicated or infected lymphoceles typically present with irregular, thickened walls that enhance after contrast administration. MRI reveals a lobulated cystic mass with high signal intensity on T2-weighted sequences, a barely visible wall, and minimal enhancement on post-contrast T1-weighted images. Additionally, renal scintigraphy using 99m Tc-mertiatide shows lymphoceles as photopenic areas, helping to distinguish them from urine leaks [3].

In our case, the CT scan demonstrated a hypodense cystic mass in the left abdominal region following a surgery for primary ovarian cancer including complete pelvic and para-aortic lymphadenectomy [6].

Given the postoperative context and imaging characteristics, the diagnosis of a lymphocele was favored.

Asymptomatic lymphoceles usually do not require any intervention and tend to resolve spontaneously over time. However, when lymphoceles become large, they can cause clinical symptoms. These may arise due to compression of adjacent anatomical structures such as the iliac vessels, ureters, bladder, pelvic nerves, or colon, potentially leading to leg edema, thromboembolic events, genital swelling, urinary dysfunction, hydronephrosis, pelvic discomfort, or constipation [4].

The choice of treatment is guided by the clinical context, particularly the presence of secondary infection, persistent or enlarging collections, or symptomatic cases.

These fluid accumulations are typically simple in nature, with contents-such as creatinine, urea, and electrolytes-closely resembling serum concentrations. They lack epithelial lining and are mostly enclosed by dense fibrous tissue.

Historically, lymphoceles were managed through open or laparoscopic surgical procedures. However, these surgical techniques come with inherent risks, and laparoscopic interventions may not be appropriate for every case. Consequently, percutaneous catheter drainage paired with sclerosing agents-such as ethanol, doxycycline, bleomycin, or povidone-iodine-has emerged as the preferred initial treatment. This approach is favored due to its safety profile and high success rate [7].

Conclusion

The identification of a new pelvic or abdominal mass in patients treated for ovarian cancer should not be immediately attributed to tumor recurrence. This case illustrates a postoperative left subphrenic lymphocele following cytoreductive surgery and lymphadenectomy,

where imaging was instrumental in reaching the correct diagnosis. Given that the development of lymphoceles is difficult to prevent, vigilant follow-up and appropriate patient counseling remain essential, especially in high-risk individuals. For symptomatic presentations, image-guided percutaneous drainage combined with sclerosing agents represents a safe and effective therapeutic option. This case reinforces the importance of considering benign postoperative entities such as lymphoceles in the differential diagnosis of cystic lesions, to avoid unnecessary interventions and optimize patient care.

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Volume 14 Issue 8 August 2025
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