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An unusual localization of seven months delayed pelvic lymphocele following radical retropubic prostatectomy: Case report and literature review

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ABSTRACT

INTRODUCTION: A pelvic lymphocele is a collection of lymphatic fluid that develops after extensive lymphadenectomies in surgeries such as urological malignancies or renal transplantation. Pelvic lymphoceles may cause complications such as fever, abdominal pain, leg swelling, genital swelling and flank pain. This report summarizes the management of a pelvic lymphocele after open radical retropubic prostatectomy with bilateral lymphadenectomy.

PRESENTATION OF CASE: Herein, we present a case in which a pelvic lymphocele developed seven months post-radical open retropubic prostatectomy and through this patient we discussed the lymphocele following radical prostatectomy. The pelvic lymphocele occurred along the sciatic nerve from the sciatica foramen to the intergluteal muscles. The patient was treated with three drainage catheters. This localization is an atypical and unusual for lymphocele after radical retropubic prostatectomy.

DISCUSSION: Lymphocele formation that leads to major complications after radical prostatectomy is rare. Lymphocele formation is most commonly seen in the early postoperative period, but it should be considered in patients with fever, abdominal pain or leg swelling during the late postoperative period. Lymphocele formation was the most common cause of hospital readmission after radical prostatectomy.

CONCLUSION: Lymphocele formation can be seen in atypical regions and can lead to unexpected complications after radical prostatectomy. Therefore, it should be brought to mind when complaints such as fever and lower extremity swelling occurred in patients underwent extensive lymph node dissection. Surgical treatment options are available, but percutaneous interventions can also be used.

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1. Introduction

A pelvic lymphocele is a collection of lymphatic fluid that develops mainly after urological or gynecologic malignancy surgeries or renal transplantation. It usually occurs after extensive lymphadenectomies [1]. Pelvic lymph node dissection is the most efficient and dependable method for the detection of pelvic lymph node metastasis in prostate cancer. Increasing the extent of the lymph node dissection leads to more accurate staging of the cancer. Additionally, lymphadenectomy may be an effective treatment for especially limited lymph node metastatic disease. One of the

strongest predictors for cancer-specific survival in prostate cancer is lymph node metastasis status [2]. Lymphocele formation increases the risk of fever and thromboembolic events in patients after radical prostatectomy [3,4]. Herein, we present a case in which pelvic lymphocele developed at an unusual localization seven months post-radical retropubic prostatectomy. Percutaneous drainage catheters were used for treatment. This work has been reported in line with the SCARE criteria [5].

2. Case presentation

Initially, a 71-year-old male patient was admitted to the hospital for an elevated prostate specific antigen (PSA) of 47 ng/ml. His past medical history was significant for diabetes, hypertension and coronary artery disease. His body mass index was 26.1. The patient was evaluated with transrectal ultrasonography and a prostate biopsy. He was diagnosed with a Gleason score of 7 (4 + 3) adenocarcinoma of the prostate. Bone scintigraphy and thoracoabdominal computed tomography (CT) were negative. The patient underwent open non-nerve-sparing retropubic radical prostatectomy with bilateral

Abbreviations: PSA, prostate specific antigen; CT, computed tomography; IV, intravenous; MRI, magnetic resonance imaging.

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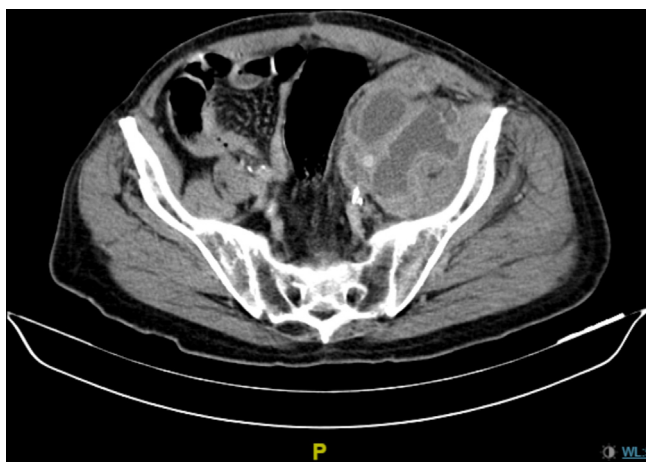


Fig. 1. Initial cystic mass with septation in the left iliac fossa on abdominal CT.

pelvic lymphadenectomy. All lymph nodes in the obturator area and around the internal and external iliac arteries were excised to the common iliac artery. Metallic clips and monopolar cautery was used for sealing the lymphatic vessels. A final pathology report for a radical prostatectomy specimen revealed a Gleason of score 9 (4+5) adenocarcinoma, and 19 lymph nodes were negative. The postoperative 1st day sump drain was removed, and the patient was discharged without issue the following day. The patient was not prescribed low-molecular-weight heparin in the postoperative period.

Seven months later, the patient was admitted to the emergency department with fever and left side abdominal pain. The thoracoabdominal CT revealed an 11 × 7 cm infected cystic mass with septations (Fig. 1). This cystic mass was compatible with a lymphocele. The patient was hospitalized and underwent drainage catheter placement under USG control. He received 2 × 500 mg intravenous (IV) Metronidazole for 5 days and 2 × 1000 mg IV Ceftriaxone for 6 days. After that, the drainage catheter was removed, and the patient continued to receive IV Ceftriaxone for 5 more days.

The patient's fever did not improve, and his left hip and leg began to swell. A thoracoabdominal CT was performed again due to the swelling. The new CT revealed that the initial cystic mass had disappeared, but there was a new cystic collection beginning from the sciatica foramen extending into the intergluteal muscles; which was not present in the first CT. Due to the CT findings, the patient underwent magnetic resonance imaging (MRI) of the left hip. MRI revealed cystic collection along the sciatic nerve from the hip to the thigh (Fig. 2). Three drainage catheters were placed under



Fig. 3. Three drainage catheters were placed into the left calf and intergluteal muscle.

USG control, two into the left calf and the other into the intergluteal muscle and 2 × 500 mg IV Tigecycline was started (Fig. 3). *Streptococcus agalactiae* was isolated from the cultures of the fluid collected through the drainage catheters. Eleven days later, the two catheters were removed, and seven days after this, the other catheter was removed and Tigecycline was stopped. The patient was discharged without any complaints. The patient is now under follow-up without any trouble.

3. Discussion

Lymphocele formation after radical retropubic prostatectomy is seen in up to 61% of patients underwent open radical retropubic prostatectomy [6], but the rate of symptomatic lymphocele is, depending on the series 4–5% [3,7]. The first diagnostic method is ultrasonography. Anechoic cystic structures seen near the major vessels should bring lymphocele to mind. On CT, hypodense lesions can be seen near the surgical clips [1].

The main complaints of patients are fever, abdominal pain and lower extremity pain [3]. Our patient was admitted to the emergency department with fever and abdominal pain, but lower extremity pain also developed during hospitalization. The localization of lymphocele developed in our patient was not frequent.

It has been shown that almost all of the early postoperative complications in patients undergoing radical prostatectomy and pelvic lymphadenectomy are associated with significant lymphocele formation and lymphocele sequelae. More than half of these patients

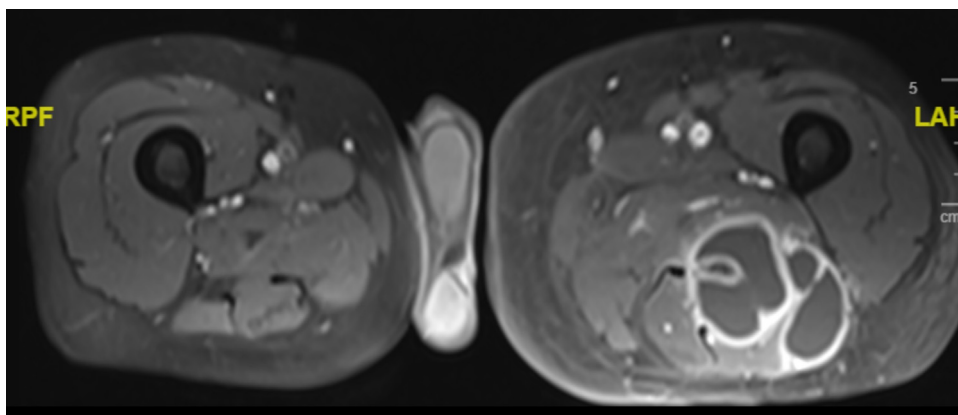


Fig. 2. Cystic mass in the left thigh on MRI of the left hip.

require intervention. Lymphocele formation has been shown to be significantly related to the number of lymph nodes removed [8]. In a prospective study, it was found that the threshold value for the occurrence of clinically significant lymphocele is 20 lymph nodes [9]. In another study, the effect of pelvic drain number on lymphocyte formation was investigated, and it was found that the pelvic drain number (one or two) did not affect lymphocele formation [3]. Obturator lymph node dissection is also important for lymphocele formation [9].

In our clinical practice, a single drain is used, and lymph nodes around the bilateral external and internal iliac vessels and in the obturator fossa are completely dissected. In our presented case, the lymph nodes in the bilateral obturator fossa were dissected, and a total of 19 lymph nodes were removed. Therefore, the lymph node dissection presented a high risk for lymphocele development.

A study evaluating the complications of radical prostatectomy revealed that lymphocele formation was the most common cause of hospital readmission [10]. Despite the fact that the majority of lymphocele formation after radical prostatectomy is symptomatic within the first month, the patients presented to the emergency department with pelvic pain and fever months after surgery should be considered in relation to the lymphocele formation [3,11,12].

The results of studies comparing laparoscopic radical prostatectomy with retropubic radical prostatectomy in terms of lymphocyte formation are controversial. In some studies, laparoscopy has been shown to reduce the formation of lymphoceles, but there are also studies showing the opposite [10,13].

The use of robotic surgery in radical prostatectomy is becoming increasingly widespread [14]. Similar to open radical prostatectomy, lymphocele formation is also seen after robotic radical prostatectomy. Yet, a small proportion of these patients become symptomatic [15,16]. In the treatment of lymphoceles after robotic radical prostatectomy, percutaneous drainage catheter application can be used; while robotic-assisted laparoscopic resection of lymphocele is another treatment option [17,18].

Due to advances in interventional radiology, percutaneous drainage catheter application with or without sclerotherapy can be used for lymphocele drainage [1]. On the other hand, surgical treatment options including laparoscopic or open marsupialization are also available [19]. Percutaneous drainage catheter application was curative for our patient.

Hamada et al. retrospectively analyzed 62 patients developed pelvic lymphocele after radical prostatectomy [20]. In their study, microbiological evaluation was performed to lymphocele fluid. They determined that 42% of lymphoceles were infected and 85% of these infected patients had monobacterial fluid culture results. Similarly, in our case monobacterial fluid culture positivity was occurred and antibiotic treatment was modified according to the antimicrobial sensitivity. These patients should receive empirical antibiotics due to the nearly 50% infection rate in lymphocele formation. The antibiotic regimen should be modified according to the antimicrobial culture results.

4. Conclusion

Lymphocele formation that leads to major complications after radical prostatectomy is rare. Lymphocele formation is most commonly seen in the early postoperative period, but it should be considered in patients with fever, abdominal pain or leg swelling during the late postoperative period. It can be seen in atypical regions and can lead to unexpected complications. Therefore, it should be brought to mind when complaints such as fever and lower extremity swelling occurred in patients underwent extensive lymph node dissection. Surgical treatment options are available, but percutaneous interventions can also be used.

Conflicts of interest

None.

Funding

None.

Ethical approval

Hacettepe University Ethical Committee ruled that approval was not required for this study.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Berk Hazır and Hakan Bahadır Haberal collected the patient details and wrote the paper. Devrim Akıncı and Bülent Akdoğan critically revised the article. Berk Hazır, Hakan Bahadır Haberal, Devrim Akıncı and Bülent Akdoğan made substantial contributions to patient management and writing the manuscript. All authors read and approved the final manuscripts.

Registration of research studies

Can not be applied.

Guarantor

Prof Dr Bülent Akdoğan.

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