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Case report
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Bilateral hydronephrosis subsequent to a giant lymphocele after robotic radical prostatectomy

Robotik radikal prostatektomi sonrası dev lenfosele bağlı gelişen bilateral hidronefroz

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Abstract

Lymphocele, one the most common complications after pelvic lymph node dissection, is usually observed between postoperative 2nd-12th months as a subclinical complication. We aimed to present a bilateral hydronephrosis case resulting from a giant lymphocele which developed during the early postoperative period after robot assisted radical prostatectomy (RARP) and pelvic lymph node dissection. Cystography was performed on the 7th postoperative day following RARP and extended lymph node dissection. Due to the left sided deviation of the bladder in cystographic images, non-contrast computed tomography (CT) was obtained, which revealed bilateral hydronephrosis and a giant lymphocele in the right pelvic region. The clinical status improved dramatically after percutaneous catheter drainage of the lymphocele. To the best of our knowledge, this is the first bilateral hydronephrosis case in the literature, which developed due to a giant lymphocele that occurred during the early postoperative period after transperitoneal surgery and had an asymptomatic clinical course despite increased creatinine levels. The findings improved dramatically by percutaneous catheter drainage.

Keywords: Hydronephrosis, Lymphocele, Prostate carcinoma, Robotic surgery

Öz

Lenfosel, pelvik lenf nodu diseksiyonu sonrası meydana gelen en sık komplikasyondur ve genellikle postoperatif 2.-12. aylarda görülmekle birlikte subklinik seyreder. Biz bu olgu sunumunda, robot yardımlı radikal prostatektomi (RYRP) ve genişletilmiş pelvik lenf nodu diseksiyonu sonrası oluşan dev lenfosele bağlı olarak gelişen bilateral hidronefroz vakasını sunmayı amaçladık. Robotik radikal prostatektomi ve genişletilmiş pelvik lenf nodu diseksiyonu sonrası postoperatif 7. günde çekilen sistografide mesanenin sol tarafa deviye izlenmesi nedeniyle kontrastsız bilgisayarlı tomografi (BT) çekildi. BT'de sağ pelvik bölgede bilateral hidronefroz ve dev lenfosel izlendi. Lenfoselin perkütan kateter drenajı sonrasında hastanın klinik durumu dramatik şekilde düzeldi. Bu olgu, dev lenfosele bağlı olarak ortaya çıkan bilateral hidronefrozun görülmesi, artmış kreatinin seviyesine rağmen asemptomatik seyretmesi ve transperitoneal cerrahi sonrası erken dönemde gelişmesi açısından literatürdeki ilk vaka olması nedeniyle önem taşımaktadır. Bununla birlikte, lenfoselin perkütan kateter drenajıyla bulgular dramatik bir şekilde düzelebilmektedir.

Anahtar kelimeler: Hidronefroz, Lenfosel, Prostat kanseri, Robotik cerrahi

Introduction

Prostate cancer is the 2nd most common cause of cancer-related deaths in the world, after lung cancer. Robotic prostatectomy is a minimally invasive surgery method in the treatment of prostate cancer (PCa) with its increasing popularity worldwide. As a part of the surgical practice, the most effective procedure for accurate staging of PCa and removal of the tumoral foci is pelvic lymph node dissection (PLND) [1].

Lymphocele is the most common complication of lymphadenectomy which develops due to lymphatic fluid leakage from transected afferent lymphatic channels during lymph node dissection. The clinical course of a lymphocele is mostly asymptomatic. The most common symptoms are feeling of a pelvic pressure, increased urinary frequency, deep vein thrombosis, ileus, infection, and edema. It usually occurs between the 2nd and 12th postoperative months [2,3].

In this report, we aimed to present a bilateral hydronephrosis case which developed due to an early-detected giant lymphocele following robot-assisted laparoscopic radical prostatectomy (RARP) and extended pelvic lymph node dissection (ePLND).

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Case presentation

A 69-year-old male patient presented with an increased serum PSA level of 9 ng/ml. In a 12-quadrant prostate biopsy which was performed via transrectal ultrasonography (USG), Gleason 3+3 prostatic adenocarcinoma was detected in 5 foci. Preoperative multiparametric prostate magnetic resonance imaging (MRI) revealed a 6-mm lymphadenopathy in the right obturator region. The patient underwent RARP and ePLND. The first postoperative flatus was passed on the 1st day, and the abdominal drain was removed on the 3rd postoperative day. The patient was discharged on the postoperative 3rd day with recommendations. Cystography was planned on the 7th postoperative day, which revealed that the bladder was deviated to the left despite no obvious complaints (Figure 1).

Physical examination revealed mild tenderness in the right lower quadrant during deep palpation. A non-contrast abdominal computed tomography (CT) showed bilateral grade II renal pelvicaliectasis and a 14x13x12 cm-sized giant lymphocele in right pelvic region (Figure 2). In the serum biochemistry, creatinine level was 1.5 mg/dL. Hemoglobin level and WBC count were 13 g/dL and 11.400 K/uL, respectively. Percutaneous drainage catheter was placed under USG guidance by interventional radiologists. Drainage fluid biochemistry of lymphocele was compatible with blood serum biochemistry values. The patient was started on abundant protein-containing diet. In the 7th day of the drainage, the lymphocele and pelvicaliectasis could not be visualized by ultrasonography, and drainage catheter and transurethral drain were removed (Figure 3). Serum PSA, creatinine and WBC values had regressed to 0,029 ng/ml, 0.9 mg/dl, and 6.310 K/uL, respectively, at the end of the 1st postoperative month. The final pathology result was reported as Gleason score 3+4, with intact surgical margins, and 10 and 8 metastasis-free lymph nodes right and left, respectively. Written informed consent was obtained from the patient for this case report.

Figure 1: Image of the deviated bladder on cystogram

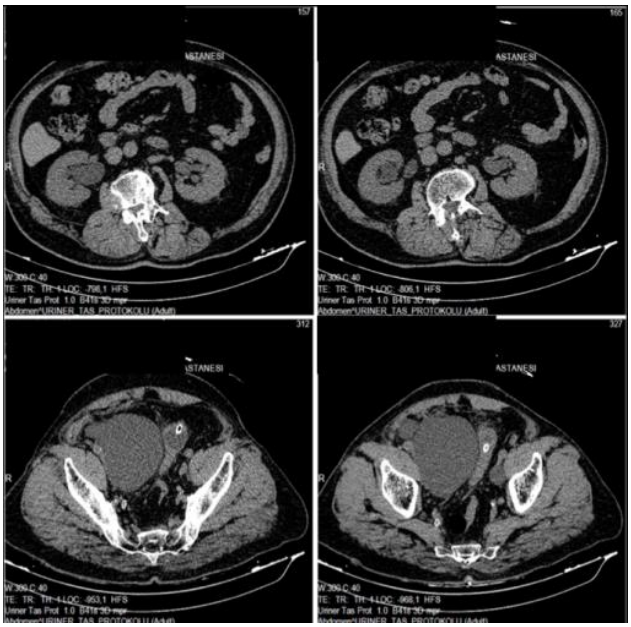

Figure 2: Bilateral grade II renal pelvicaliectasis and giant lymphocele in the non-contrast CT

Figure 3: Normal cystography findings at the 7th day of drainage

Discussion

Lymphocele is one of the most common complications following PLND, with a usually subclinical course. In a systematic review, lymphocele rate was reported as ranging from 0% to 8% [4]. Among all their patients who underwent CT imaging, Orvieto et al. [5] reported the incidence of asymptomatic and symptomatic lymphoceles as 51% and 7.8%, respectively.

Symptomatic lymphocele is frequently seen in between the 2nd and 12th postoperative months [4-6]. The giant lymphocele in our case was detected incidentally in the 1st postoperative week. However, findings obtained during the evaluation of the additional clinical and serum biochemistry parameters suggested that the clinically significant lymphocele may have developed during the early postoperative period. Although asymptomatic lymphoceles usually regress spontaneously, no study has been conducted on the correlation between the size of the lymphocele and its regression to this day.

Lymphocele is commonly seen after extraperitoneal RARP. Among symptomatic and asymptomatic patients who

underwent postoperative CT or MRI after extraperitoneal RARP, Lee et al. found that the incidence of lymphocele was 20.5% (41/200) [7]. Davis et al. [8] reported the symptomatic lymphocele rate as 19% after extraperitoneal RARP but observed no symptomatic lymphoceles after transperitoneal RARP. Keskin et al. [6] reported the lymphocele rate as 9% and the symptomatic lymphocele rate as 2.5% in a subgroup analysis of transperitoneal RARP series including 521 patients.

In general practice, surgeons believe that RARP may cause a lower incidence of lymphocele formation due to the peritoneum acting as a natural surface for lymphatic reabsorption. We performed transperitoneal ePLND in this case due to suspicious metastatic areas in multiparametric MRI, which may have contributed to the lymphocele formation. Briganti et al. [9] reported that the rate of lymphocele significantly increased (10.3%) after ePLND compared to limited PLND (4.6%). Naselli et al. [10] reported that the number of lymph nodes retrieved was an independent and statistically significant predictor of the symptomatic lymphocele development.

In this case, we emphasized that although bilateral pelvicaliectasis and related increase in creatinine level are presented as the result of compression to the surrounding organs, giant lymphoceles may be symptom-free in early periods of clinical course. However, cystography performed before the removal of the transurethral catheter invoked suspicion of a giant contralateral lymphocele.

Percutaneous drainage catheter application with or without sclerotherapy can be used in treatment of lymphocele drainage [11]. Surgical treatment options such as laparoscopy or open marsupialization may also be preferred [12]. In this case, percutaneous drainage catheter placement was curative for the giant lymphocele.

Previous studies showed that hydronephrosis may develop after lymphadenectomy, which was performed during open or laparoscopic approach in gynecologic oncology cases, and ureteral catheters were used in the treatment [13,14]. However, bilateral hydronephrosis due to lymphocele development after radical prostatectomy or radical cystectomy with ePLND has not been reported in the literature yet. To the best of our knowledge, our case is the first one in this respect. Without the need for ureteral catheters, lymphocele regressed and renal pelvicaliectasis dramatically improved after percutaneous catheter placement.

Conclusion

Lymphocele is one of the most common complications after PLND and its course is usually subclinical. In transperitoneal surgery, clinically significant asymptomatic lymphocele may rarely develop. Giant lymphoceles may cause bilateral hydronephrosis and increased levels of creatinine, and the findings can improve dramatically with percutaneous drainage.

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