Symptomatic Lymphocele After Kidney Transplantation
A Single-Center Experience

Mohammad Ali Zargar-Shoshtari, Mohammadjavad Soleimani, Hormoz Salimi, Kaveh Mehravaran

Introduction: In a retrospective study, we evaluated the frequency, clinical presentation, and management of lymphocele in kidney transplant recipients operated on in a single center.

Materials and Methods: Between September 1984 and June 2005, we had 2147 kidney transplantations from living donors. During the follow-up period, ultrasonography was performed in symptomatic patients and those with elevated serum creatinine level postoperatively. Other radiological procedures were done in complicated cases. Patients with lymphocele were treated by percutaneous drainage with or without injection of sclerotizing agent (povidone iodine). If recurrence occurred, surgical intraperitoneal drainage was performed. In cases with multiloculated collection or inappropriate access for percutaneous drainage, the primary approach was surgical intraperitoneal drainage.

Results: Symptomatic lymphocele collection was seen in 17 kidney recipients of our series (0.8%; 95% confidence interval, 0.4% to 1.2%). It presented with elevation of serum creatinine concentrations (47.1%), pain and abdominopelvic swelling (29.4%), and lower extremity edema (23.5%). Percutaneous drainage was used for the treatment of lymphocele in 11 patients, but recurrence occurred in 7 (63.6%). These cases were treated with open surgical drainage. In 6 patients, the primary approach was surgical intraperitoneal drainage, because of multiloculated collection or inappropriate access for percutaneous drainage. All of the patients were treated successfully and no graft loss occurred during the follow-up period.

Conclusion: Symptomatic lymphocele is an uncommon complication after kidney transplantation. Surgical intraperitoneal drainage is the most effective approach for the management of symptomatic lymphocele.

Keywords: kidney transplantation, lymphocele, treatment, drainage

Urol J. 2008;5:34-6.
www.uj.unrc.ir

INTRODUCTION

One of the urological complications in kidney transplant recipients is lymphocele which is a fluid collection between the kidney allograft and the bladder. It is an uncommon complication (0.6% to 18%) caused primarily by extravasation of the lymph from the lymphatic vessels injured during preparation of the iliac vessels of the recipient and unligated lymphatic system from the renal hilum of the donor.[1,2] Other factors such as acute rejection, urinary obstruction, and graft decapsulation may contribute to the development of lymphocele.[3]

Patients are usually asymptomatic and spontaneous resolution occurs after a few months. However, large lymphoceles may manifest by edema in the inguinal regions, deterioration of kidney function, fever, lymphedema of the ipsilateral

Shaheed Hasheminejad Kidney Transplantation Center, Iran University of Medical Sciences, Tehran, Iran

Corresponding Author:
Mohammad Ali Zargar-Shoshtari, MD
Shaheed Hasheminejad Hospital, Vanak Sq, Tehran, Iran
Tel: +98 21 8852 6900
Fax: +98 21 8852 6901
E-mail: dr.zargarm@gmail.com

Received October 2007
Accepted December 2007

leg, and even compressive syndrome of the vena cava or the portal vein.[4] Therapy of large symptomatic lymphocele involves 2 basic methods of surgical approaches with internal drainage and marsupialization, and percutaneous puncture and drainage.[4,5] Some of the most common manifestations are bulging of the surgery site, kidney allograft dysfunction, and ipsilateral or bilateral edema of the lower extremities.[1-6] They have usually been treated successfully without graft loss.[6]

In this retrospective study, we evaluated the incidence, clinical presentation, and management of lymphocele in our large population of kidney allograft recipients in a single center.

MATERIALS AND METHODS

Between September 1984 and June 2005, we had 2147 kidney transplantations at Hasheminejad Kidney Transplantation Center in Tehran, Iran. Transplanted patients were 1185 men and 962 women with ages ranged from 4 to 59 years. The allograft source was a living donor in all of the patients. The procedure was a retransplantation in 186 patients (8.7%).

Surgical operations were done in accordance with the standard technique of kidney transplantation in which the allograft was placed in the iliac fossa (usually in the right side) and its vessels were anastomosed to the iliac vessels and the ureter was implanted into the bladder using extravesical technique. All lymphatic vessels encountered during dissection of the iliac vessels were ligated. Stenting of the implanted ureter was used in all of the cases.

During the follow-up period, ultrasonography was performed only in symptomatic patients and those with serum creatinine elevation postoperatively. Other radiological procedures such as the renal scintigraphy, computed tomography, intravenous urography, and magnetic resonance imaging were done if necessary. We managed symptomatic patients by percutaneous drainage with or without injection of sclerotizing agent (povidone iodine). If recurrence occurred, surgical intraperitoneal drainage was performed. In cases with multiloculated collection or inappropriate access for percutaneous drainage, the primary approach was surgical intraperitoneal drainage.

RESULTS

Symptomatic lymphocele collection was seen in 17 kidney recipients of our series (0.8%; 95% confidence interval, 0.4% to 1.2%). These episodes developed between 10 to 90 days after transplantation (median, 6 weeks). The patients were 8 men and 9 women aged 24 to 53 years old at the time of transplantation. One of the patients had received her second kidney allograft.

The clinical manifestations of posttransplant lymphocele were variable. It presented with elevated serum creatinine levels in 8 patients (47.1%), pain and abdominopelvic swelling in 5 (29.4%), and lower extremity edema in 4 (23.5%). Diagnosis of lymphocele was confirmed by ultrasonography and renal scintigraphy. Computed tomography was performed in 2 complicated cases.

Percutaneous drainage was used for the treatment of lymphocele in 11 patients, and for 6 of whom injection of povidone-iodine was carried out too. Re-accumulation of lymph occurred in 7 of 11 patients (63.6%) with percutaneous drainage. Three of these patients had povidone-iodine injection. These cases were treated successfully with open surgical procedure. In the remaining 6 patients, the primary approach was surgical intraperitoneal drainage, because of multiloculated collection or inappropriate access for percutaneous drainage. With a median follow-up of 14 months, there was no graft loss or any other complications in these patients.

DISCUSSION

The reported incidence of symptomatic lymphocele following kidney transplantation ranges from 0.6% to 18% in the literature.[1,2,6] However, there are some series with higher or lower frequencies of this complication; in a study on 138 case of transplantation, Atray and colleagues reported 36 patients with lymphocele (26%).[7] In another study by Gupta and associates on 680 patients with kidney transplantation, symptomatic lymphocele was found in 11 patients.[8] The frequency of symptomatic lymphocele formation in our study was 0.8% which seems to be low compared to the reported incidences in other studies. We did not screen

all of the kidney recipients postoperatively and only symptomatic patients were evaluated and diagnosed with lymphocele. Screening is not usually done and most of the studies have reported symptomatic cases, but different diagnostic approaches and surgical techniques may cause discrepancies in the incidences reported by different centers. On the other hand, in contrast to our series, other studies are on kidney allografts that have not been harvested only from living donors. Samhan and Al-Mousawi showed that the incidence of symptomatic lymphocele is more when cadaveric kidney allografts are used.[6] Hence, this can be another cause of increased incidence of lymphocele in some studies.

Lymphocele develops primarily by extravasation of the lymph from the lymphatic vessels injured during the preparation of the iliac vessels of the recipient and unligated lymphatic vessels from the renal hilum of the donor. Other factors such as acute rejection, urinary obstruction, and graft decapsulation may contribute to its development.[3] Also, the use of some immunosuppressive drugs such as sirolimus may be associated with a significant increase in lymphocele formation, but their role has not been confirmed in all studies.[9] Although lymphocele formation is harmless and asymptomatic in many cases, in some instances, it can seriously affect kidney graft function and necessitates intervention.[6] Treatment of lymphoceles should start with minimally invasive measures. Percutaneous treatment is considered as the first-line modality for pelvic lymphoceles due to its effectiveness, widespread applicability on an outpatient basis, ease of the procedure, and low complication rate.[10] In our study, although percutaneous drainage was successful in some patients, re-accumulation of lymphocele was noticed in majority of them. Intraperitoneal drainage, either as a primary intervention, or after failure of prolonged percutaneous aspiration results in permanent cure of the condition.[6] It is noteworthy that laparoscopic surgery has become widely accepted for the treatment of lymphocele following kidney transplantation. However, open drainage should be performed in patients with wound complications and in those with a small lymphocele adjacent to the vital renal structures.[11,12]

CONCLUSION

Symptomatic lymphocele is an uncommon complication after kidney transplantation. In our experience, surgical intraperitoneal drainage is the most effective approach for the management of this complication.

CONFLICT OF INTEREST

None declared.

REFERENCES

1. Shokeir AA, el-Diasty TA, Ghoneim MA. Percutaneous treatment of lymphocele in renal transplant recipients. J Endourol. 1993;7:481-5.
2. Dubeaux VT, Oliveira RM, Moura VJ, Pereira JM, Henriques FP. Assessment of lymphocele incidence following 450 renal transplantations. Int Braz J Urol. 2004;30:18-21.
3. Hamza A, Fischer K, Koch E, et al. Diagnostics and therapy of lymphoceles after kidney transplantation. Transplant Proc. 2006;38:701-6.
4. Martínez Jabaloyas JM, Morera Martínez J, Pontones Moreno JL, et al. [Lymphocele as a complication of renal transplantation]. Actas Urol Esp. 1994;18:106-10. Spanish.
5. Huilgol AK, Sundar S, Karunagaran SG, Sudhakar S, Sreenivasa Prasad MA, Ravindran T. Lymphoceles and their management in renal transplantation. Transplant Proc. 2003;35:323.
6. Samhan M, Al-Mousawi M. Lymphocele following renal transplantation. Saudi J Kidney Dis Transpl. 2006;17:34-7.
7. Atray NK, Moore F, Zaman F, et al. Post transplant lymphocele: a single centre experience. Clin Transplant. 2004;18 Suppl 12:46-9.
8. Gupta RS, Niranjan J, Srivastava A, Kumar A. Lymphoceles following renal transplantation : comparison of open surgical and laparoscopic deroofing. Indian J Urol. 2002;18:36-47.
9. Tondolo V, Citterio F, Massa A, et al. Lymphocele after renal transplantation: the influence of the immunosuppressive therapy. Transplant Proc. 2006;38:1051-2.
10. Karcaaltincaba M, Akhan O. Radiologic imaging and percutaneous treatment of pelvic lymphocele. Eur J Radiol. 2005;55:340-54.
11. Fuller TF, Kang SM, Hirose R, Feng S, Stock PG, Freise CE. Management of lymphoceles after renal transplantation: laparoscopic versus open drainage. J Urol. 2003;169:2022-5.
12. Bailey SH, Mone MC, Holman JM, Nelson EW. Laparoscopic treatment of post renal transplant lymphoceles. Surg Endosc. 2003;17:1896-9.