



## DIAGNOSIS AND TREATMENT OF POSTOPERATIVE LYMPHOCELE IN RENAL TRANSPLANTATION

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**Summary.** *As a surgical complication of renal transplantation lymphocele account for as much as 6-18% complications reported by major referential series. The most common cause if lymphatic injury in the course of preparation of the iliac vessels of the recipients, i.e. unligated lymph vessels in the renal hilus of the donor. Other etiological factors, such as acute rejection, urinary obstructions or decapsulation of the graft my contribute to development of this serious complication.*

*The treatment of large symptomatic lymphocele implies two basic methods:*

*a) surgical approach with internal drainage and marsupialiyation, and*

*b) percutaneous puncture and drainage. In our series (311 transplanted kidneys) the presence of lymphocele necessitating further therapy was recorded in 6.4% (18). Clinical picture was dominated by renal failure in 47%, stasis in the excretory system induced by external compression in 41%, and inguinal edema ion 53%, while scrotal edema, febrile infection, lymphorrhoea and pain were less common (12-24%).*

*Complete cure of the process with no interventional therapy ensued in 3 cases (17.6%). Puncture was applied in 29.4% (5 cases), while puncture with drainage and instillation of povidone iodide was applied in 12 patients (70.5%). Surgical therapy was applied in 2 patients (11.7%). The eventual response to the therapeutic procedures was satisfactory.*

*The results obtained in our series suggest the need for prolonged drainage with instillation of povidone iodide as a satisfactory method in treatment of complicated lymphocele.*

**Key words:** *Lymphocele, renal transplantation, diagnosis, therapy*

### Introduction

Some authors classify lymphocele in the group of local complications along with acute tubular necrosis, acute cortical necrosis, recurrent glomerulonephritis (de novo nephritis), graft rupture and hernia of the surgical incision [1]. American authors divide renal transplantation complications into technical and non-technical [2]. Different technical complications take place postoperatively and include occlusion of the renal artery and vein, stenosis of the renal artery, ureteral fistula of occlusions and lymphocele.

The occurrence of lymphocele was caused primarily by extravasation of the lymph from the lymphatic vessels injured at the preparation of the iliac vessels of the recipient and unligated lymphatics from the renal hilus of the donor [3, 4]. Other factors such as acute rejection, urinary obstruction, and graft decapsulation may contribute to its development. Most of them are asymptomatic and spontaneous resolution takes place after a few months. Clinical symptoms include lymphorrhoea, edema of the lower limbs of graft

dysfunction, which mainly depend on the type of compressed pelvic structure. Lymphorrhoea accompanying symptomatic lymphocele is an excellent basis for the occurrence of infections.

Echasonography is the preferred method for the diagnosis of lymphocele and evaluation of its size. This imaging technique enables the insight into some consequences on the kidney induced by lymphocele, including stasis of the pyelocaliceal system and ureters [3]. Small lymphocele usually go by with no symptoms and are diagnosed only on routine echographic examinations of the transplanted kidneys. On the other hand, large lymphocele are manifested as edema in the iliac-inguinal region micturition disorders, deterioration of renal function which may even led to anuria, fever, lymphedema of the ipsilateral leg and even compressive syndrome of vena cava or vena porta. Therapy of large symptomatic lymphocele involves two basic methods: (a) surgical applied with internal drainage and marsupialization, (b) percutaneous puncture and drainage. Some authors suggest therapeutic use of the puncture [3, 4].

## Material and Methods

The study included a group 311 patients treated at the Transplantation Center of the Institute of Urology and Nephrology, CCS, Belgrade, in the period of 20 years:

a) 206 patients receiving a kidney from a living donor, and

b) 105 patients receiving a cadaveric kidney.

All patients had terminal renal failure and were on chronic program of dialysis with permanent nephrologic follow-up. The oldest patient was 62 and the youngest 6 years old (mean age 24.5 yrs). Male to female ratio was 2:1. In the postoperative period continuous monitoring was used for detection of surgical and other complications. All efforts were made to manage them adequately in order to enable survival of both grafts and patient. Surgical complications were diagnosed by subjective evaluation of the patients, while echosonography, x-ray, abdominal CT and other methods were used for objective imaging and evaluation of the overall condition. Surgical complications were managed immediately or later, surgically or conservatively, according to the degree of risk for the graft and patient. The analysis was performed retrospectively using routine clinical methods, surgical methods, laboratory methods and statistical analysis (descriptive statistical analysis, ANOVA test, Student t-test, nonparametric analysis of frequency).

## Results and Discussion

Presence of lymphocele was recorded in 11.9% (37 cases). Out of them 5.5% (17 cases) were symptomatic and 6.4% (20 cases) were asymptomatic which were excluded from further analyses since they did not induce any subjective discomfort of graft function, complying with the attitudes of referential authors [5]. Ten symptomatic cases of lymphocele occurred after transplantation from living donors (4.8%), while in 7 cases they manifested after cadaveric transplantation (6.6%). The following clinical signs were predominant: renal dysfunction (8 cases, 47%), stasis in the renal canalicular system resulting from external compression (7 cases, 41%), inguinal edema (9 cases, 53%), while scrotal edema, febrile infection, lymphorrhea and pain were by far less common (12-24%).

The polymorphous clinical presentation was the

main characteristic of their clinical manifestation. The predominant symptoms indicating interventional therapy included deterioration of renal function with or without stasis (7 cases), echographic evidence of lymph accumulation accompanied with pain (11.7%), wound lymphorrhea (11.7%), stasis of the pyelocaliceal system (5.8%), edema and redness of the surgical wound (5.8%) and wound pain (5.8%).

In three cases (17.6%) complete cure of the process ensued without interventional therapy.

Puncture as the primary therapy was applied in 5 patients (29.4%) with recurrence in 100%, so that it was not used as the secondary therapy. Puncture with drainage and instillation of povidone iodide was used in 12 cases (70.5%): in 8 (47%) as the primary therapy and in 4 (23.5%) as the secondary therapy, with the occurrence of recurrence only in one case and successful outcome in 91.6% (11 cases).

Surgical approach as the therapeutic procedure was applied in two cases (11.7%): as the primary therapy in one case (5.8%) and once as the secondary therapy (5.8%) with complete success (100%) [6, 7].

Laparoscopic drainage of lymphocele has been increasingly used worldwide [8], but was not used in our series.

## Conclusion

Large symptomatic lymphocele which endanger the graft of induce other objective or subjective problems require an active therapeutic approach. Minute technique of lymphatic drainage in the renal hilus and careful ligation of the perivascular tissue with lymphatic during preparation of the iliac blood vessels, as well as preparation during donor nephrectomy are the basic prerequisites for reducing the incidence of lymphocele.

Follow-up echosonography in the postoperative period is extremely important for the diagnosis and evaluation of lymphocele size.

In our series the results indicate prolonged drainage with instillation of povidone-iodide as the most effective and the least invasive method of treatment of complicated lymphocele. Laparoscopic drainage which has been successfully used worldwide has not been used in our series. This will, however, contribute to improvement of the least invasive therapy in renal transplant patients.

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## DIJAGNOZA I TRETMAJN POSTOPERATIVNIH LIMFOCELA U BUBREŽNOJ TRANSPLATACIJI

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*Kratak sadržaj: Limfocele su kao hirurška komplikacija bubrežne transplantacije odgovorne za visok procenat komplikacija koje se javljaju u rasponu 6-18% u najvećim svetskim referentnim serijama i kada se kompariraju sa drugim komplikacijama. Najčešći uzrok je povreda limfatika u toku postupaka preparacije ilijačnih sudova recipijenta, odnosno neligirani limfni sudovi u bubrežnom hulusu kod donora. Drugi etiološki činioci kao akutno odbacivanje, urinarna opstrukcija, odnosno dekapulacija grafta mogu doprineti nastanku ove ozbiljne komplikacije. Tretman velikih simptomatskih limfocela podrazumeva dve osnovne metode:*

- a) hirurški pristup sa internom drenažom i marsupijalizacijom i  
b) perkutana punkcija i drenaža.*

*Na našem materijalu (311 transplantacija bubrega) prisustvo limfocela koje su zahtevale sledeći: poremećaj bubrežne funkcije 47%, staza u kanalnom sistemu prouzrokovana spoljnom kompresijom 41% i ingvinalni edem 53%, dok je zastupljenost edema skrotuma, infekcije sa povišenom temperaturom, limforeje i bola bila znatno redja (12-24%).*

*Kompletna sanacija procesa bez preduzimanja interventne terapije zabeležena je u 3 slučaja (17.6%). Punkcija je korišćena u 29.4% (5 slučajeva), dok je punkcija sa drenažom i instalacijom povidon-jodida bila zastupljena kod 12 pacijenata (70.5%). Hirurški tretman sproveden je kod 2 pacijenta (11.7%). Konačni odgovor na terapijske procedure bio je zadovoljavajući.*

*Rezultati dobijeni na našem materijalu, upućuju nas na potrebu prolongirane drenaže sa instilacijom povidon-jodida, kao na zadovoljavajuću metodu u tretmanu komplikovanih limfocela.*

*Ključne reči: Limfocele, bubrežna transplatacija, dijagnoza, tretman*

Received: March 4, 1998