KIDNEY TRANSPLANTATION FROM LIVING DONOR WITH RENAL MASS: CLINICAL CASE

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Abstract

Introduction. Renal transplantation is the best treatment option for end-stage renal disease, but organ demand continues to overweight organ supply. The transplantation of kidneys from donors with small renal masses represent a potential avenue to expand the donor pool. We represent the clinical case of kidney transplantation from living related donor with small renal mass and performed literature review of results of these cases.

Methods. Case presentation of kidney transplantation from living related donor with incidental finding of small renal mass. Mass was excised and subsequently kidney was engrafted successfully. Up to date both patients are under follow up during 8 months and any signs of recurrence were seen.

Results. Donor kidney was procuredby laparosopic hand-assissted technique. Intraoperatively small renal mass was encountered whereas during preop evaluation renal cyst was diagnosed. Renal mass was excised fully and defect was closed with interruptive suture. Histological evaluation has revealed highly differentiated renal cell carcinoma. Postoperative period was uneventful. Patient was discharged with good graft function.

Conclusion. Careful use of kidneys from donors with single renal masses is feasible and safe, with an overall recurrence rate of less than 1.5%. The use of such kidneys could help alleviate the organ shortage crisis.

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Renal Mass, Transplantation, Donor

Бүйрек ісігі бар тірі туысты донордан бүйрегі трансплантациялау

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Тұжырым

Өзектілігі. Бүйрек трансплантациясы соңғы сатыдағы бүйрек ауруын емдеудің ең жақсы нұсқасы болып табылады, бірақ органдарға қажеттілік әлі де жоғары. Кіші бүйрек ісіктері бар донорлардан бүйрек трансплантациясы донорлық қорды арттырудың әлеуетті әдісі болып табылады. Бүйректегі кіші түзілістер (2 смге дейін) бар тірі туысқан донордан бүйрек трансплантациясының клиникалық жағдайы ұсынылған және осы жағдайлардың нәтижелері бойынша әдебиеттерге шолу жасалады.

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Түйінді сөздер:
Бүйрек Түзілісі, Трансплантация, Донор

Материалдар мен әдістер. Бүйректегі кіші түзілістербар тірі туысқан донордан бүйрек трансплантациясының клиникалық жағдайы. Түзіліс алынып тасталды, содан кейін бүйрек сәтті имплантацияланды. Бүгінгі таңда екі науқаста 8 ай бойына қайталану белгілері байқалмаған. Біз сондай-ақ MEDLINE/PubMed және SCOPUS деректер қорын зерттеу нәтижелерін ұсынамыз.

Нәтижелер. Донордың бүйрегі лапароскопиялық қол әдісімен жойылды. Операция кезінде шағын бүйрек массасы анықталды, ал операция алдындағы бағалау кезінде бүйрек кистасы деп берілген. Бүйрек массасы толығымен кесіліп, дефекті үзіліс тігіспен жабылған. Гистологиялық зерттеуде жақсы дифференцияланған бүйрек жасушалы карциномасы анықталды. Операциядан кейінгі кезең асқынусыз өтті. Науқас трансплантаттың жақсы функциясымен жазылды.

Қорытынды. Бір бүйрек зақымдануы бар донорлардың бүйректерін мұқият пайдалану мүмкін және қауіпсіз, жалпы рецидив 1,5%-дан аз. Мұндай бүйректерді пайдалану орган жетіспеушілігі дағдарысын жеңілдетуге көмектеседі.

Пересадки почки от живого родственного донора с опухолью почки

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Введение. Трансплантация почки является лучшим вариантом лечения терминальной стадии почечной недостаточности, но потребность в органах по-прежнему остается высокой. Трансплантация почек от доноров с небольшойопухолью (менее 2 см) почки представляет собой потенциальный путь увеличения пула доноров. Представлен клинический случай трансплантации почки от живого родственного донора с небольшой опухолью почки и проведен обзор литературы по результатам этих случаев.

Материалы и методы. Клинический случай трансплантации почки от живого родственного донора со случайным обнаружением небольших почечных образований. Образование было удалено, и впоследствии почка успешно приживилась. На сегодняшний день оба пациента находятся под наблюдением в течение 8 месяцев, признаков рецидива не наблюдается. Также представляем результаты исследования баз данных MEDLINE/PubMed и SCOPUS.

Результаты. Донорскую почку извлекали лапароскопическим ручным методом. Интраоперационно было обнаружено небольшое образование почки, тогда как во время предоперационной оценки была диагностирована киста почки. Опухоль почки была полностью иссечено и дефект закрыт прерывистым швом. Гистологическое исследование выявило высокодифференцированную почечно-клеточную карциному. Послеоперационный период протекал без осложнений. Пациент выписан с хорошей функцией трансплантата.

Заключение. Забор почек от доноров с единичными образованиями почек возможно и безопасно, при этом общая частота рецидивов составляет менее 1,5%. Использование таких почек могло бы помочь увеличить пул доноров почки.

Introduction

Renal transplantation is the gold standard for end-stage renal disease (ESRD) and offers significant survivaland quality of life for patients and economic benefits for country itself.[1-3] Despite this, only a minority of patients with ESRD ultimately receive a transplant and organ

demand continues to overweight supply in most developed nations.[1,4,5]

Multiple strategies have been implemented to increase organ donation and utilization, including increasing living kidney donation, donations after cardiac death (DCD), the use of expanded criteria donor (ECD) kidneys, and national programs to facilitate kidney-paired donations and transplants for highly sensitized patients.[5,6] In the Republic of Kazakhstan the situation with deceased donations after brain death is critically undeveloped.

The oncological management of small renal masses (SRMs) continues to evolve; nephron-sparing surgery, in the form of partial nephrectomy, is considered to be the standard of care for T1a (≤4 cm, organ-confined) renal masses, when technically feasible.[4,7,8] A recent U.S. nationwide analysis assessing the uptake of partial nephrectomy for the treatment of SRMs between 2009 and 2012 demonstrated rates of 48% and 33% in teaching and non-teaching institutions, respectively.[9] In Canada, a survey of academic centers revealed a partial nephrectomy rate of 78% for T1a tumors from 1988–2014, with an increasing trend over time.[10] Some SRMs, therefore, continue to be treated with radical nephrectomy. Often, this may be due to technical factors related to the tumor itself, but a proportion of cases result from patient preference for radical nephrectomy. Such kidneys may represent potentially transplantable organs that would otherwise be discarded.

Case presentation

This is the clinical case of kidney transplantation to 33 years old male patient from living related donor with small renal masses that was an incidental intraoperative finding. Donor was his elder sister. During preoperative evaluation on CT scans small left renal cyst was identified, otherwise patient was healthy. Donor kidney was procured by laparoscopic hand-assisted method. Intraoperatively renal cyst appeared to be small renal mass. A piece of tissue from latter was send express biopsy.

Pathology revealed highly differentiated renal cell carcinoma. Laparoscopic donor nephrectomy was performed successfully. The neoplasm was fully excised on back-table (Figure 1-2). The parenchymal defect was closed by interrupted suture (Figure 3). Kidney was engrafted on right iliac region with arterial and venous anastomosis with external iliac arteria and vein, respectively (Figure 4).

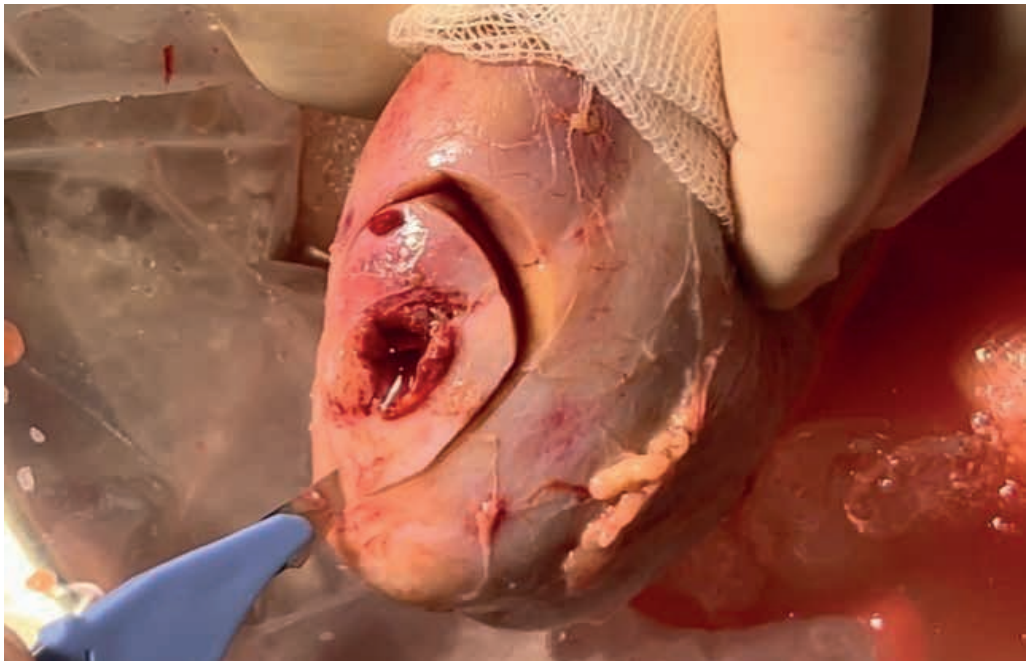


Figure 1.
Excision of renal mass on back table

Figure 2.
Post excision view of graft

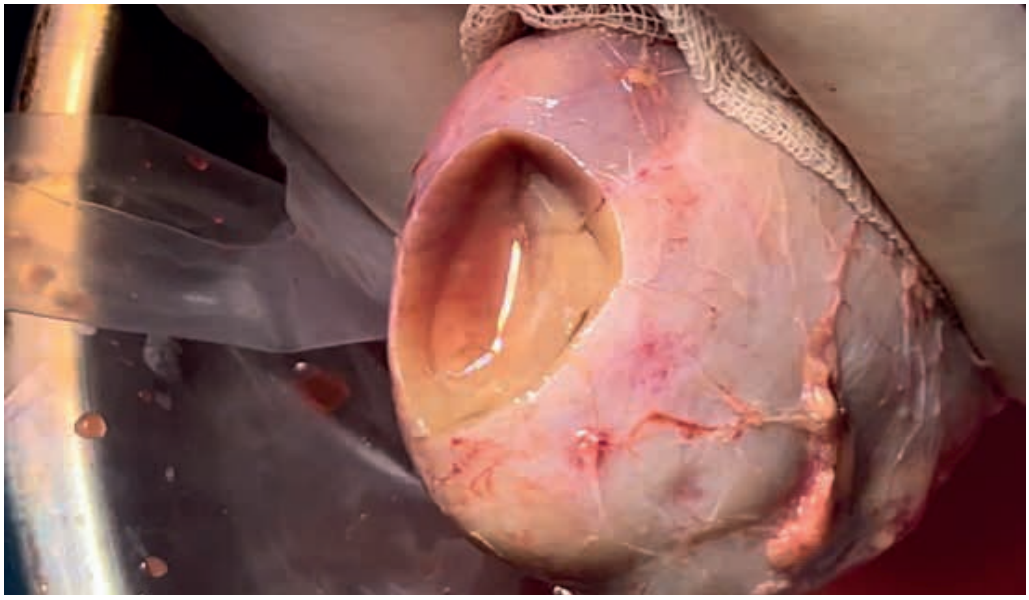


Figure 3.
The defect is closed by interrupted suture

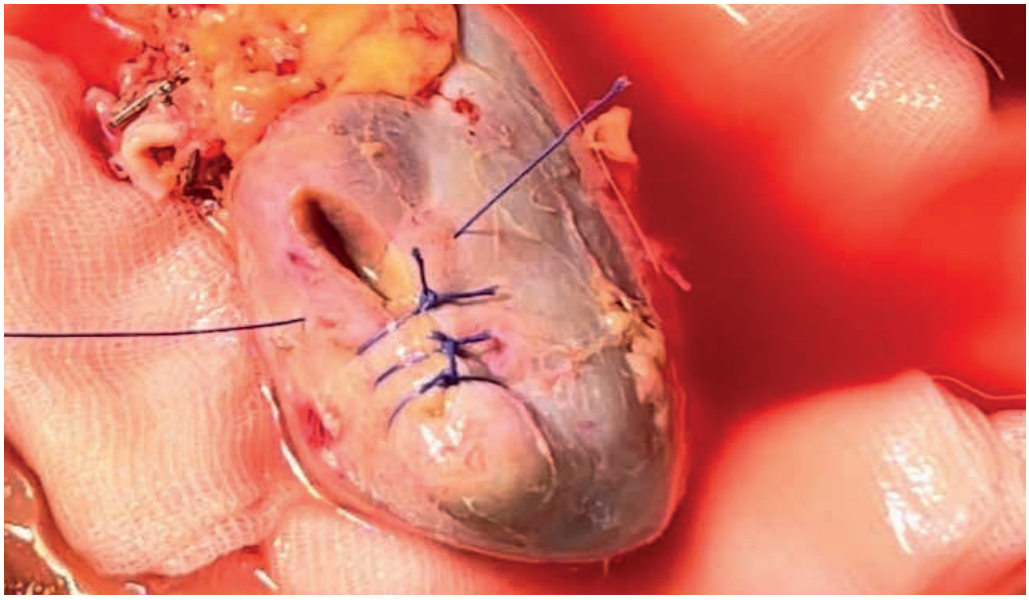
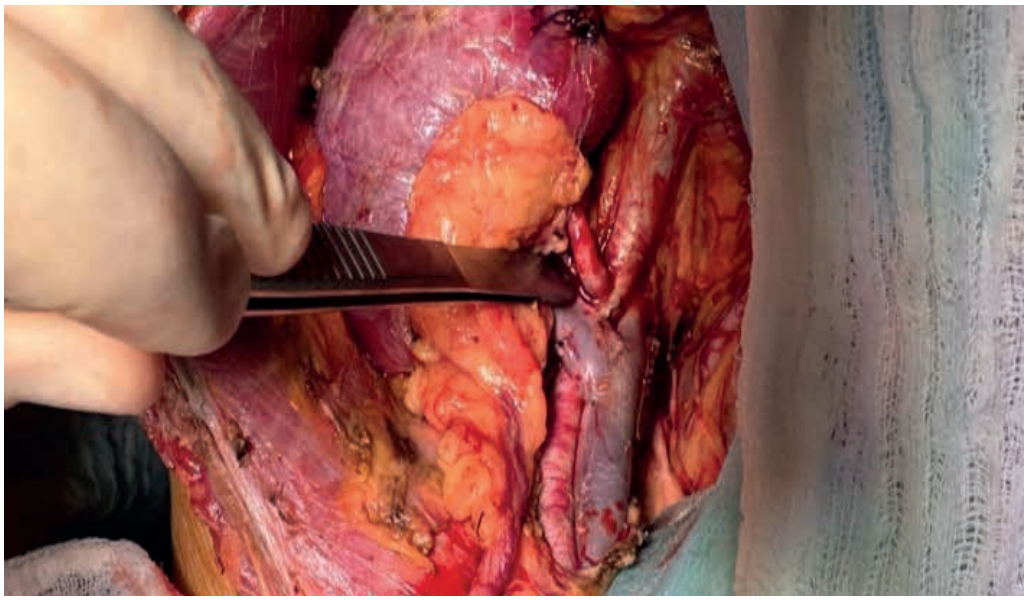


Figure 4.
Kidney after engraftment to iliac fossa



Discussion

It is well-known that solid organ transplantation increases the overall risk of malignancy in transplant recipients, most likely as a consequence of the post-transplant immunosuppressed state.[11,12] However, there is no evidence to suggest that immunosuppression has a negative impact on the natural history of localized RCC. Reflecting this, multiple existing clinical guidelines suggest that patients with small (<5 cm), incidentally discovered RCCs need not delay renal transplantation after undergoing surgical treatment, given the low risk of recurrence.[13,14]

The results of the aforementioned studies suggest that transplantation of tumorectomized kidneys is similarly safe and feasible, with only one suspected tumor recurrence demonstrated to date. The data supporting the transplantation of contralateral kidneys is more limited. However, the risk of concomitant metastatic disease for T1a renal masses is <2% and contralateral kidneys in this setting are, therefore, expected to be low risk for disease transmission with transplantation. To date, one case of recurrence has been described and occurred in a manner suggesting the presence of circulating cancer cells and/or micrometastases at the time of organ procurement. Taken together, the entire data set presented herein demonstrates a 1.4% recurrence rate among recipients of tumorectomized and contralateral kidneys from donors with confirmed small RCCs. This rate is comparable to that described in the literature for SRMs treated with partial nephrectomy.[15]

While not without risk, the small risk of RCC recurrence needs to be weighed against the risk of remaining on dialysis. In one analysis of 43 patients who received tumorectomized kidneys, Brook et al demonstrated an increased four-year survival rate over dialysis patients remaining on the waiting list; survival was comparable to recipients of living, unrelated kidneys matched for age, gender, and HLA mismatch.[16] Not all kidney transplant candidates would be willing to receive a kidney from a donor with a SRMS and, indeed, only a subset of patients would be suitable recipients. One survey of patients on a transplant list in northern England, however, revealed that 59% would support the use of such kidneys.[17]

The potential for safely transplanting kidneys with SRMs was recognized as early as 1982, when Stubenbord et al published a case report describing the transplantation of an allograft following removal of a small calcified renal mass, later confirmed to be an RCC.[13] A number of groups have since published multiple case series describing the transplantation of tumorectomized kidneys from living or deceased donors, as well as kidneys from donors with contralateral renal malignancies. Here, we review and summarize all known cases, to date, of kidneys transplanted from donors with SRMs complete with followup data. We conclude by outlining a framework for the implementation of a transplant protocol for kidneys recovered from donors with SRMs, and discuss the potential ethical and logistical pitfalls that may be encountered.

Conclusion Transplantation of tenonectomies kidneys with SRMs is relatively safe against staying on dialysis considering the survival rates of patients. A forementioned data analysis shows low recurrence rates of cancer and nil effect of immunosuppression on this rate. In our clinical case transplantation went otherwise uneventful. Postoperative period also was uneventful. Both patients were under follow up for 10 months up to date and no signs of recurrence of cancer. Thus, kidney with SRM is thought to be potentially safe for transplantation with beneficial results.

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