Chronically Rejected Renal Allograft Replaced by a Huge Organized Hematoma Mimicking Malignancy

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ABSTRACT

A 44-year-old man received a cadaveric renal allograft, however, the allograft failed after 1 year owing to septic complications. Five years after the complications, the patient noted an enlarged mass in the lower left abdominal area accompanied by discomfort. Abdominal computed tomography (CT) revealed the failed kidney transplant had been replaced by a mass with multiple calcifications. The tumor showed heterogenous-enhancement, as well as some vascular structures that were noted within the tumor. Aortogram demonstrated a huge hypovascular lesion in the lower left abdominal area with displacement of adjacent arteries. He received transplant nephrectomy and histological examination of the tumor showed a hematoma with organization and calcification accompanied by thromboemolism in the blood vessels. A hematoma is a common acute or chronic complication of kidney transplantation. It can be secondary to graft rupture or injury to the vascular pedicle. It is not well known that a hematoma can develop and slow expansion and total replacement can occur after graft failure. CT is limited in helping to determine the definitive pre-operative diagnosis. (***Tzu Chi Med J*** 2006; **18**:211-215)

Key words: CT, hematoma, renal allograft

INTRODUCTION

The long-term fate of nonfunctioning transplanted kidneys remains unknown. There is a small risk of malignancy developing within the graft. We present a rare case of chronically rejected renal allograft completely replaced by a huge organized hematoma with malignant behavior.

CASE REPORT

This 44-year-old man had end-stage kidney disease and started hemodialysis treatment in 1996. In 1997, he received a cadaveric renal allograft and immunosuppressive treatment. However, his allograft failed after 1 year owing to septic complications and he returned to hemodialysis therapy. During the following 5 years, there were no changes in the failed kidney allograft except during the 3 months prior to this presentation when he noted a mass in the lower left abdominal area accompanied by discomfort. The mass progressively increased in size. His history of trauma was unremarkable. Complete blood count revealed hemoglobin of 9.9 g/dL. No coagulopathy was noted. He was admitted to our hospital for further evaluation.

Abdominal computed tomography (CT) was performed using an 8-slice scanner (General Electric Medical Systems, Milwaukee, Wis, USA) with a slice thickness of 5 mm. The CT scan revealed the failed kidney transplant had been replaced by a mass measuring 25 ×

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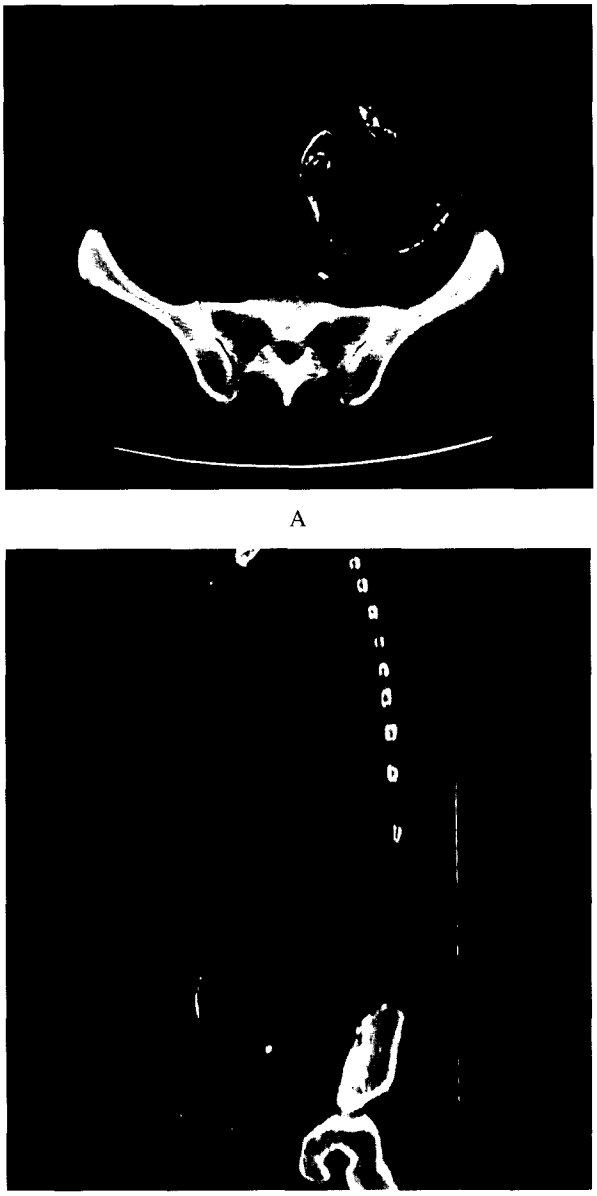
10 × 10 cm with multiple calcifications (Fig. 1). The renal parenchyma and the pelvicalyceal system were not identified. The mass showed heterogenous-enhancement. Additionally, some vascular structures were noted within the tumor (Fig. 2). Malignant changes of the transplanted kidney, such as squamous cell carcinoma, had to be considered. The native kidneys were atrophic and multiple cysts were observed. No adenopathy was seen. Aortic digital subtraction angiograms were acquired on an Advantx LCA angiography system (General Electric Medical Systems). The angiograms demonstrated a huge hypovascular lesion at his lower left abdominal area with displacement of adjacent arteries (Fig. 3). The vascular pedicle of the allograft was not seen. Late phase of the selective left common iliac angiogram showed faint



A

B

Fig. 1. 44-year-old man with chronically rejected renal allograft. Axial (A) and sagittal (B) CT without contrast enhancement revealed the transplanted kidney at left pelvic fossa was replaced by a huge mass with obvious anterior protuberance. Some dense amorphous calcification in the mass was noted. The native left kidney was atrophic (arrow).

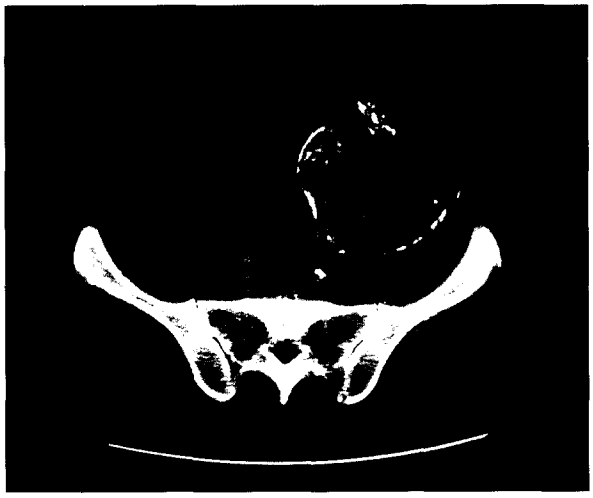


Fig. 2. Axial CT with contrast enhancement revealed heterogenous-enhancement of the tumor. Some vascular structures were noted within the tumor (arrow).

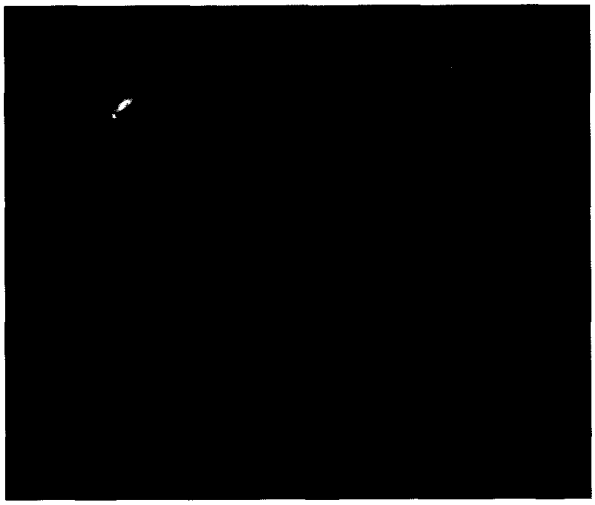


Fig. 3. Aortogram demonstrated a huge hypovascular lesion at his lower left abdominal area with displacement of adjacent arteries. The vascular pedicle of the allograft was not seen.

stains scattered in the lower left abdominal area and an obvious patchy stain near the bifurcation of the left external and internal iliac arteries, which was compatible with the CT findings (Fig. 4). Owing to the progressive increase in the level of pain, no biopsy was performed, and the decision was made to proceed with a transplant nephrectomy.

During the operation, a huge graft kidney tumor was noted with encasement of the left native ureter and suggested invasion of the left external iliac artery and vein. The tumor and the vascular pedicles of the graft kidney were resected. Because the left native ureter was encased by the graft kidney tumor, the left native kidney and ureter were also resected. Histological examination of the tumor showed an organized hematoma with necrosis and calcification. There were thromboembolisms in the blood vessels. No residual renal tissue or malignancy was noted (Fig. 5). The patient recovered well after the surgical procedure and was discharged on postoperative day 10.

Fig. 4. Late phase of selective left common iliac angiogram showed faint stains scattered in lower left abdominal area and an obvious patchy stain near the bifurcation of the left external and internal iliac arteries.

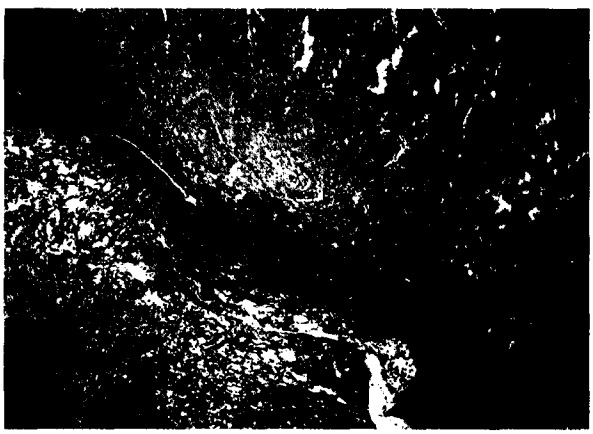


Fig. 5. Microscopic view of the peripheral area of the mass. Hemorrhage and fibrosis are seen in the peripheral area of the mass.

DISCUSSION

The incidence of cancer in the renal area of transplant recipients increases progressively during the years following kidney transplantation [1]. However, the fate of long-term nonfunctioning kidney allografts is still not well known. Transplantectomy was performed only when clinical signs appeared (fever, local pain or tenderness of the graft, hematuria) or later, when unexplained anemia, inflammatory syndrome, or underestimated needs of dialysis insidiously occurs [2,3]. Regular CT or ultrasound follow up should be performed for detecting lesion from the allograft and vessels. Although it is generally accepted that an asymptomatic kidney graft can be safely left in place, there is a small but definite risk of malignancy developing within the graft in the long term [4]. Hematoma is a common acute or chronic complication of kidney transplantation. It should be considered when a tumor in the kidney graft occurs. Immediate postoperative hematoma can be secondary to graft rupture or injury to the vascular pedicle [5]. Chronic hematomas are always small and asymptomatic. It is not well known that hematoma can develop slow expansion after graft failure.

Ultrasound (US) provides accurate detection of tumors in graft kidneys. It should be performed on a yearly basis for the life of the graft [6]. CT scan is better and more specifically able to detect small lesion and should be performed when sonographic findings raise doubts [7]. Angiography should be performed if a vascular lesion is suggested. Due to its rapid enlargement and strong enhancement, the differential diagnosis in our patient included neoplastic mass lesions such as hemangiopericytoma, cavernous hemangioma, sarcoma, inflammatory pseudotumor and vascular lesions such as hematoma. In addition, because of the history of renal transplantation, post-transplantation malignancies should be kept in mind. The enhancement of a mass could be due to bleeding from capillaries, vascular lakes or venous pool. Within the hematoma, the irritant effects of blood and its breakdown products induce mild inflammation, which causes increased permeability of the vascular wall

and bleeding from capillaries in the granulation tissue, resulting in hematoma expansion and contrast enhancement during the late phase of CT and angiography [8-10]. However, the differential diagnosis from a malignant tumor is still difficult. Some hematomas and malignancies have the same appearances, including post-contrast enhancement, rapid growth and peripheral invasion, which were observed in our case. Definite confirmation of the differentiation should be obtained from a biopsy.

As in our case, we thought that the origin of the hematoma may have been a ruptured pseudoaneurysm with slow bleeding. Renal artery pseudoaneurysms following transplantation can be subdivided into intra- and extra-renal types. Intra-renal pseudoaneurysms are almost invariably the result of trauma from percutaneous biopsy [11,12]. Pseudoaneurysms of the extra-renal type are less common and can occur at the surgical anastomosis as a complication of vascular reconstruction or infection [13-15]. They can also be seen distant from the anastomosis resulting from mycotic aneurysm formation [13,16,17]. The allograft of our patient failed after 1 year owing to septic complications, and mycotic aneurysm formation could be possible. However, there was no further follow-up examinations after the graft failure; and a thrombosed pseudoaneurysm may not have been demonstrated on sonography, CT, or angiography.

Immediate postoperative hematoma due to graft rupture or injury to the vascular pedicle is always treated by emergency surgery. The presence of an asymptomatic hematoma can be treated conservatively if it does not increase in size [18]. However, an expanding hematoma is histopathologically benign but chronically malignant lesion. Vessel encasement is possible and increasing pressure within the hematoma can lead to erosion of adjacent tissues [19]. Total resection of the hematoma with native nephrectomy and vascular reconstruction was unusual but this was performed because of the malignant behavior of the hematoma in our case.

In summary, we present a rare case of chronically rejected renal allograft replaced by a huge organized hematoma with rapid growth and vessel encasement. CT was of limited help in determining a definitive pre-operative diagnosis. The fate of a failed kidney allograft several years following transplantation is unpredictable. A rejected renal allograft replaced by organized hematoma with malignant behavior has not been well described in the literature. We recommend annual follow-up examinations to asses each patient's status.

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血腫取代慢性排斥移植腎擬似惡性變化

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摘要

一位44歲男性在接受腎臟移植一年後因感染而失敗。五年後他發現左下腹有快速變大的腫塊並伴隨不適。腹部電腦斷層顯示原移植腎被一個有多處鈣化的腫塊取代。這個腫瘤內有不均勻的顯示及疑似血管構造。主動脈攝影中看到在左下腹有一個巨大的低血管性腫瘤。在接受移植腎切除後發現是一個血腫，伴有鈣化及血栓。血腫是腎臟移植常見的併發症，可能是因為移植腎破裂或是血管的傷害。目前尚未發現血腫可以在移植失敗後慢性的擴大。電腦斷層在此案例術前的診斷只有提供有限的資訊。(**慈濟醫學** 2006; **18**:211-215)

關鍵語：電腦斷層，血腫，腎臟移植

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囊狀異位性腦組織以單側頸部腫塊表現—病例報告

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摘要

異位性腦組織是一極少見的異常。大部分異位性腦組織是實質性或實質性合併囊狀成份。就我們所知，文獻記載中只有兩個純粹囊狀異位性腦組織。我們在此報告一個五個月大的嬰兒罹患頸部純粹囊狀異位性腦組織，同時對相關文獻作一回顧。(**慈濟醫學** 2006; **18**:217-219)

關鍵語：異位性腦組織，實質性成份，囊狀成份，頸部

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緊急經血管內囊球栓塞術治療急性口腔出血—病例報告

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摘要

大量口腔出血可因為外傷、動脈瘤破裂或扁桃腺切除手術而引起，它需要立即性的照護。假如可找到快速出血點，它可經由血管內栓塞或外科結綁手術治療。在一個上了年紀的女性病患，我們使用一個可脫離的囊球栓塞復發性扁桃性腫瘤所引起的急性出血。那個出血點既淺且急而且出口不明，這使得微導管線在血管的勾選變的非常困難。我們認為一個可脫離的囊球相較於線圈是較佳的選擇，因為出血點到頸動脈竇的距離相當短。栓塞術後的血管攝影像顯示了出血點的完全堵塞以及保留了上甲狀腺動脈且達到立即的效果。我們相信在某些特殊情況，除了線圈栓塞及傳統手術外，它是一個可行的替代或補充治療方式，尤其是在一個緊急的情況下。(**慈濟醫學** 2006; **18**:221-224)

關鍵語：咽部，腫瘤，出血，囊球，治療性放射線學

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