

## **RENAL ALLOGRAFT COMPARTMENT SYNDROME: AN UNDERAPPRECIATED POST-OPERATIVE COMPLICATION**

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**Purpose:** Renal allograft compartment syndrome (RACS) is defined as early graft dysfunction secondary to retroperitoneal hypertension and resultant organ ischemia. In spite of its associated morbidity, including total graft loss, only 4 recent reports describing a total of 7 patients have been published. The purpose of this study was to identify the incidence, therapies and outcomes of all patients with RACS at our institution.

**Methods:** All patients who underwent a renal transplant between January 1, 2000 and May 1, 2005, at our institution were reviewed. Any patient with subsequent signs of acute allograft dysfunction and a necessary emergent operative re-exploration were then identified. RACS was diagnosed in patients with visual allograft hypoperfusion evident during re-exploration, and/or with positive pre-operative Doppler ultrasonic findings.

**Results:** Among 458 patients who underwent renal transplantation, 11 (2.4%) were diagnosed clinically and/or radiologically with RACS. Patient characteristics between groups were similar ( $p < 0.05$ ). Five of 11 (45%) patients displayed adequate renal allograft function immediately after transplantation which rapidly deteriorated as a result of RACS. Doppler ultrasound showing reversed diastolic blood flow within interlobar and segmental renal arteries was diagnostic in all 5 cases. Six of 11 (55%) patients displayed poor initial allograft function and were classified as early presenters of RACS. All 11 patients underwent retroperitoneal fasciotomy with either allograft intraperitonealization or selective overlying skin closure. The function of each allograft improved dramatically upon decompression. There was no graft loss. Statistical methods included the students' *t*, Mann-Whitney U and Fischer's exact tests.

**Conclusions:** Clinicians must remain aware of RACS as a potential diagnosis when patients display a rapid deterioration in kidney performance after good initial allograft function. Doppler ultrasound is particularly useful in diagnosing patients with late presentations of RACS.