Unusual Late Complication of Renal Transplantation

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Enlargement or tenderness of a renal graft, if not otherwise explained, is one of the characteristic signs of acute rejection (Calne *et al.*, 1968). Other signs are oliguria, tachycardia, hypertension, localized oedema, temperature, generalized illness, and various laboratory findings in the blood and urine (Calne, 1967). As the early initiation of antirejection treatment is mandatory for the successful control of the process, in many cases it has to be started even when only a few of the symptoms and signs are present. However, as this treatment is occasionally contraindicated in other conditions that may cause similar symptoms, the dilemma of initiating the treatment becomes obvious. Recently we faced this problem in one of our patients.

CASE REPORT

A man aged 32 had had a cadaveric renal transplantation for the end-stage of chronic glomerulonephritis two years ago. His clinical condition and laboratory findings had remained satisfactory. Creatinine clearance ranged from 80 to 90 ml./min., and Hb was about 13.5 g./100 ml. Proteinuria, which was heavy initially (about 4 g./day), had decreased to 300–400 mg./day for the past eight months. The urinary electrolyte excretion was normal, while the urinary output ranged from 2,500 to 3,000 ml./day. The urinary sediment contained no casts or lymphocytes, though red blood cells had been present intermittently. Coliform organisms in significant numbers had been repeatedly cultured from his urine and treated with appropriate antibiotics. During a review two weeks before his admission to hospital these were again cultured, but no treatment was given.

Three days before his admission he slipped while walking, but did not fall. He strained his abdomen and relates the onset of his symptoms to this episode. His graft became painful, but he did not notice haematuria or decrease in his urinary output, nor was he feverish. He felt generally so well that he did not think it necessary to report to hospital before his routine review appointment.

On examination the graft was tender and much larger than its normal size. His temperature was normal, the pulse rate 72/min., and the blood pressure 135/80. There was no localized or generalized oedema. In view of the enlargement of the graft he was admitted for observation.

The creatinine clearance was 87 ml./min. and the urinary electrolytes were normal. The haemoglobin was 11.0 g./100 ml., and the white cell count was 24,000/cu. mm. The midstream specimen of urine taken just before his admission was sterile on culture and did not contain pus cells, casts, or lymphocytes on direct examination. He was kept in bed and immunosuppressive therapy was continued at his usual dosage—that is, azathioprine 150 mg./day and prednisone 15 mg./day. In addition, ampicillin 250 mg. was given.

Daily record of the above measurements of renal function showed no deterioration, while the graft became progressively smaller and less tender. By the fifth day it was back to its previous size, but there was a localized tenderness with bulging and redness of the superimposed skin in a small area of 2–3 cm. diameter on the upper pole of the graft.

An intravenous pyelogram taken on the fourth day showed that the graft measured 18 cm. in its bipolar diameter. The calices were slightly distended and the papillae could not be seen. There was also distension of the infundibulum but the ureter drained normally. On a pyelogram taken eight months previously the kidney measured 15 cm. and the papillae could be seen, though no details of the infundibulum and ureter were discernible.

On the seventh day about 50 ml. of pus was removed through a superficial incision, and for the next 10 days 200–100 ml. of urine drained from the incision. The drainage then ceased and the wound healed. Culture of the pus grew profuse coliform organisms,

sensitive to ampicillin among other antibiotics. The white cell count and the sodium excretion returned to normal after two weeks. An intravenous pyelogram taken three months later showed that the kidney still measured 18 cm. on its bipolar diameter. The papillae could now be seen and the infundibulum was less distended. The drainage of the ureter remained normal.

COMMENT

Acute rejection episodes are more frequent during the early postoperative period, though they have been reported to occur many months after transplantation. The treatment consists in intensification of the immunosuppressive treatment and perhaps irradiation of the graft (Hume, 1967; Hamburger *et al.*, 1965).

Since many symptoms that are present in the rejection can be due to other causes—for example, infection (Hill *et al.*, 1967)—in which immunosuppressive drugs are not helpful, these must be excluded before increasing the immunosuppressive treatment.

In our case, though there was marked generalized enlargement and tenderness of the graft, with a decrease in the urinary sodium, the history and the absence of any other symptom or laboratory finding justified some reservation in diagnosing rejection. The subsequent progress in hospital with the development of the abscess without change in the renal function confirmed this impression.

As the patient's symptoms began when he strained his abdomen, it is possible that there was a small rupture of the kidney substance or the capsule which led to the formation of a subcapsular or a perinephric haematoma, which subsequently became infected and localized to the upper pole. Against this possibility are the absence of haematuria and generalized symptoms, including hypotension, at the onset and the absence of blood when the abscess was incised.

The history of recurrent urinary infections, the increased white cell count, the clinical enlargement and tenderness of the graft, and the culture of profuse coliform organisms in the pus drained from the abscess suggest that the most probable explanation of his symptoms and signs is an interstitial infection with an accompanying oedema, which after a good response to the antibiotic treatment localized and formed the abscess on the upper pole.

The radiological enlargement shown on the intravenous pyelogram taken on the fifth day, when clinically the size of the graft had decreased to its usual size, was probably due to hypertrophy, and this view is supported by the fact that on the intravenous pyelogram three months later the size of the kidney remained unchanged. Inflammatory oedema and hyperaemia are the most probable explanations of the acute enlargement of the kidney at the time of admission. It is difficult to decide the relationship of the abscess to the history of trauma.

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D. G. OREOPOULOS, M.D.
M. A. O. SOYANNWO, M.B., PH.D., M.R.C.P.I.
M. G. MCGEOWN, M.D., PH.D., M.R.C.P.E.D.
J. M. MEGAW, F.R.C.S.ED.

Department of Nephrology, City Hospital, Belfast.

REFERENCES

- Calne, R. Y. (1967). *Renal Transplantation*, 2nd ed. London.
Calne, R. Y., *et al.* (1968). *Brit. med. J.*, 2, 404.
Hamburger, J., Crosnier, J., and Dormont, J. (1965). *Lancet*, 1, 985.
Hill, R. B., jun., Dahrting, B. E., Starzl, T. E., and Rifkind, D. (1967). *Amer. J. Med.*, 42, 327.
Hume, D. M. (1957). *Ann. Rev. Med.*, 18, 229.