The incidence of renal calcification in preterm infants

Sub.—In the report by Short and Cooke, the 21 infants who developed renal calcification all had bronchopulmonary dysplasia. While Short and Cooke recorded details of steroid usage the relationship between steroid use and renal calcification was not explored. Their failure to do so is indeed surprising as nephrocalcinosis may be one of the side effects of the now widespread use of steroids for broncho-pulmonary dysplasia.

IVAN BLUMENTHAL
The Royal Oldham Hospital, Rochdale Road, Oldham OL1 2JH

Dr Short and Cooke comment:
We thank Dr Blumenthal for his interest in our recent article, and note his comments regarding the use of steroid treatment. The hypercalciuric effects of steroids have been utilised for many years in the treatment of hypercalcaemia in adult patients. We certainly considered the possible effects of such treatment in our own patients, and recorded dosage and duration of dexamethasone treatment.

The small number of patients with dexamethasone (two infants with bronchopulmonary dysplasia who developed calcification, and one who did not), however, preclude any useful comment upon the effects of such treatment in our study. In the two patients with renal calcification who received dexamethasone, renal ultrasound scans were normal before treatment. As a result, we have postulated a direct causal relationship between steroid therapy and calcification. We would agree, however, that the increasing use of steroids provides an additional argument for close evaluation of the renal tract in all preterm infants at risk of renal calcification.

Who pioneered the use of alternative donors (and bone marrow from the peripheral blood) in bone marrow transplantation?

Sir,—Dr Hows writes her opinion that “The Seattle group has pioneered the use of partially matched family donor transplants...” and perhaps that reflects her own experience, mainly in adult transplantation. As far as is known, the first successful bone marrow transplant from a father to a son was inspired by Professor J R Hobbs and undertaken on 29 August 1972 by the Westminster Bone Marrow Team for Mark Pegram, who had severe aplastic anaemia, and for whom the late Dr Iain Anderson was the consultant paediatrician and the late Professor James G. Humble was the haematologist. Despite a stormy graft-versus-host disease (GVHD) in which bilirubin concentration rose to 118 μmol/L, Mark’s health had improved by the patient day with no evidence of chronic GVHD and had enjoyed a normal healthy life and currently plays rugby. He was probably the first human to be treated after bone marrow transplantation with antilymphocytic serum cocktail. In 1975 the team published a series of 50 patients engrafted from genetic haplotype-sharing donors, and these were mostly for paediatric patients with higher survivals than the 40 in the Seattle paper.

The first intended HLA matched mixed lymphocyte culture negative transplant from a volunteer unrelated donor to produce an engrafted survivor was conceived by Professor J R Hobbs and undertaken on 13 April 1973 for Simon Bostic who had chronic granulomatous disease; Dr Kenneth Hugh-Jones was the consultant paediatrician, Dr David James was responsible for the HLA tissue typing, and (now) Professor Masashi Yamamura perfected the mixed lymphocyte culture method5; the case was not reported in full until 1977.6 Cyanide was the only drug used for the induction to avoid total body irradiation which has more unpleasant sequelae for children, and it was thus discovered that this could only displace survival to the human bone marrow, so that there was only engraftment of some 12% of the healthy female donor’s neutrophils. Neutrophil counts, nevertheless, were 0.7–5.7x10⁹/L and were identified by Professor Humble as they not only contained female ‘clubs’ but could be shown by double staining to be strongly nitroblue tetrazolium positive in contrast to the majority of the totally negative lymphocytes. All almost identical result has since been reported.7 Such a good neutrophil count kept Simon completely free of life threatening infections and off all antibiotics for some six years, by which time the chimeric state had petered out and the nitroblue tetrazolium positive cells could no longer be detected. During that period, Simon flourished and grew normally and his lymphocytes remained consistently positive to the mixed lymphocyte culture negative against his donor when tested on seven occasions. With the final disappearance of the donor cells, Simon relapsed to his former severe illness developing liver and lung obstructions which were treated with infusion of intensive antibiotic treatment and subsequent prophylaxis, but thereafter his growth rate deteriorated and never again reached normal. He has gained adulthood with modern care but when recently tested did not show much evidence of inducibility of increased staphylococcal killing capacity by the use of interferon gamma.8 His donor, Mrs Joan Macfarlane, went on to add two further children to the one she had at the time she volunteered, and, presumably as a result, she became mixed lymphocyte culture positive against Simon so was not used for a second graft.

A second boy with severe chronic granulomatous disease engrrafted for three months after a transplantation January 1975 for another matched volunteer unrelated donor and also derived immense benefit from the procedure to enjoy seven years of childhood before dying of other causes. He similarly had correction of his severe aplastic anaemia after a transplant in November 1975. A fuller account of the introduction of volunteer unrelated donor to produce an engrafted survival in Correlation of Chronic Granulomatous Disease by Transplantation, 1989 a symposium report distributed by the Westminster Medical School Developmental Team, 17 Horseferry Road, London SW1Z 2AR. It gives the true credit for the initiation of the first volunteer unrelated donor transplantation for Simon Bostic of Mrs Elisabeth Bostic, after the near miss when Professor Hobbs had proved a mixed lymphocyte culture negative matched unrelated donor from Holland for her first affected son, Andrew, who died just a few days before the graft could be undertaken in 1972. After Elisabeth’s death, full credit should then be maintained for the stoic work of Mrs Shirley Nolan who took up the fund raising to enable Professor Hobbs to build it up to its world famous size. On the above evidence, surely credit for pioneering the use of alternative donors belongs to Professor John R Hobbs and to the Westminster Bone Marrow Team, who still enjoy the world’s best survivals from children so treated.

Incidentally, Hobbs was also responsible for the first transplant using stem cells of the peripheral blood, taken from a 4 year old donor in June 1970 to treat a boy with type I mucocutaneous candidiasis (migration inhibition factor deficiency) who had been profoundly unwell, which has proved fatal in all our other cases who were not transplanted. The treated patient remains alive and as well as the longest living survivor of a matched sibling transplant in Britain and probably worldwide. The lymphocyte depletion in this transplant was done at the Hammersmith Hospital before she arrived.

K HUGHES-JONES
S SELWYN
PG RICHES
Westminster Bone Marrow Team, Westminster Bone Marrow Team, Westminster Hospital, London W1. (Present address: Wing, London SW1 2AR)

7 Kamani N, August CS, Campbell DE, Hassan NF, Douglas SD. Marrow transplantation in chronic granulomatous disease: an update with five year follow up. 3 Pediatr 1988;121:657.

Dr Hows comments: Dr Hows is grateful to Des Hughes-Jones, Selwyn, and Riches for their account of the pioneering role of Professor Jack Hobbs and other members of the Westminster Bone Marrow Transplant Team in the use of alternative matched donors in paediatric bone marrow transplantation.

I tried to write a short ‘state of the art’