Cadaveric Kidneys for Transplantation

SIR,—The timely article by Professor R. Y. Calne (31 May, p. 565) illustrates some of the problems associated with the supply of cadaver kidneys for patients in chronic renal failure. It is important to realize that cadaver renal transplantation is as an effective form of treatment of patients with chronic renal failure as any surgery for most of the common cancers. While transplantation or dialysis is available for less than 10% of the young patients dying of renal failure in this country, most of the donor organs can be harvested by the transplant teams. As facilities become available for more patients it will be necessary to enlist the help of surgeons throughout the country to remove kidneys from cadaver donors.

It is essential, therefore, to keep this operation as simple as possible so that it can be performed by surgeons in training in any hospital. The object of the donor operation is to remove both kidneys as soon as possible after death and to cool them. The kidneys, their vessels, and ureters must not be damaged during removal. When cool the kidneys must be kept sterile and must be

a pair of curved scissors up behind to the aortic hiatus to divide both I.V.C. and aorta. This causes the escape of a large quantity of blood, but the block of tissue required is by this time free. The block of tissue contains both kidneys and ureters, half both adrenals, perinephric fat, a small portion of pancreas, and long sections of the aorta and I.V.C. (Figure).

In contrast to the method described by Professor Calne this procedure does not require good lighting, as no fine dissection or ligaturing is necessary deep in the posterior abdomen. The block of tissue is transferred to a sterile surface, ventral surface down. The aorta is split longitudinally along its posterior wall to display the renal arteries. The block is turned over and the I.V.C. is opened similarly (Figure, line A-A). It is now a simple matter to divide the anterior aortic (Figure, B-B) and posterior vena cava walls and gently to pull apart the two kidneys with their vessels. The perinephric fat is opened to allow inspection of the renal surface. This method enables both kidneys to be removed in 15–20 minutes. Removing the kidneys serially as described by Calne in our hands almost doubles mean time from

Diagram to show the block of tissue removed from the corpse for dissection. The aorta and I.V.C. are divided along lines A-A and B-B, with care not to damage the right renal artery and left renal vein respectively.

easy to transport to the transplant recipient's hospital. We wish to describe our technique, which was developed after discussions with the transplant team at St. Mary's Hospital.

The abdomen is opened through a transverse incision. The peritoneum is incised lateral to the splenic flexure of the colon and the kidneys and perirenal tissues are mobilized from their lateral side. The ureter is identified at the pelvic brim and with the periureteric tissues it is mobilized well into the pelvis and upwards to the lower pole of the kidney. A hole is made in the colonic mesentery between the middle and left colic arteries, and the kidney and ureter are pushed medially through the hole. The hepatic flexure of the colon and caecum are mobilized and the incision is carried up across the aorta. The right kidney and ureter are mobilized in the same way as the left. The bowel is thrown up over the costal margin. The aorta and the inferior vena cava (I.V.C.) are divided between cholecystectomy clamps just above the aortic bifurcation. The left hand of the operator now grasps both kidneys, ureters, and aorta and I.V.C. with their clamps. With gentle downward traction the dissection is carried up posterior to the great vessels to the aortic diaphragmatic hiatus. The dissection is now carried up in front of the aorta and left renal vein behind the duodenum and pancreas to expose the superior mesenteric artery and coeliac axis, which are divided. It is now a simple matter to pass

starting the donor operation to the start of kidney cooling. We suggest that our method also has the advantage that it allows the surgeons performing the transplant to decide how to trim the donor vessels, thus resulting in the best possible technical fit.

The method of cooling described by Professor Calne appears rather formidable and may deter some surgeons. We find that preservation for 3–4 hours at 5° C. without infusion or perfusion of a kidney at the donor operation allows grafts to function satisfactorily. The kidneys are doubly wrapped in Vidrape or Aldon intestinal bags. The air is expressed, the tapes are tied tightly, and the bags are plunged into a bucket of ice and water. The closure of plastic bags must be performed carefully, as we have demonstrated the leakage of fluid through elastic band and plastic tape closure, with contamination of the kidney. By placing saline in the bag with a kidney it is difficult to detect contamination; when no fluid is placed in the bags any that gets in excludes the kidney from use.

We accept that Professor Calne has a wider experience than we with this operation, but we feel that our experience is more like that of surgeons who may be called upon in

the future to perform the operation. It is our purpose to try to increase the availability of kidneys with adequate ureters and vessels so that transplant surgeons should have the minimum of technical problems during their operation. Although organ preservation to allow planned recipient operations is ideal at present, none of the available methods is suited to widespread use. The method we use requires no special equipment or facilities.—I am, etc.,

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Sudden Death in a Young Asthmatic

SIR,—Deaths in asthmatics are always tragedies and it is excellent that a detailed report of such a case has been published by Dr. I. Gregg and Dr. J. Batten (5 April, p. 29). Nigh on 40 years in a large medical clinic (first in Lund, then in Uppsala) has given me some experience in the matter.¹

So far as I can see the remedy which is of paramount importance is potassium iodide, and in emergencies it may be given intravenously, just as in thyrotoxic crises. It serves to dissolve the tenacious mucus which is responsible for the suffocation. Adrenaline or one of its modern substitutes serves to relax the bronchial musculature, and soluble cortisone intravenously takes care of the allergic factor and the swelling of the mucous membranes. It goes without saying that the patient may have to be treated in a respirator.

Of the three remedies mentioned the iodide seems to me of paramount importance. On rare occasions when a death from bronchial asthma has occurred in my absence it has invariably been in cases in which potassium iodide has not been given.—I am, etc.,

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REFERENCE

- 1 Ask-Upmark, E., *Akut Medicin*, 1969, Almquist and Wiksell, Stockholm.

Cervical Cytology

SIR,—I was interested in the leading article (7 June, p. 585) which cast doubt upon the interpretation drawn by the workers in British Columbia¹ of their own data regarding cervical smears, where they have suggested a possible 50% spontaneous regression rate of carcinoma-in-situ. Our data in Aberdeen² show that the incidence of clinical carcinoma in our area corresponds with what would be expected from the observed detection rate of carcinoma-in-situ in a comprehensively screened population.

The annual incidence of clinical cervical carcinoma in the city of Aberdeen is 21 cases,³ there being 435 cases of clinical cervical carcinoma in the gynaecological wards during the 21 years 1946–66. According to the 1961 Census there were 60,000 married or formerly married women in the city, and the detection-rate of preclinical cervical cancer is 0.7%. With this detection rate a population of this size would be expected to yield 420 cases of preclinical