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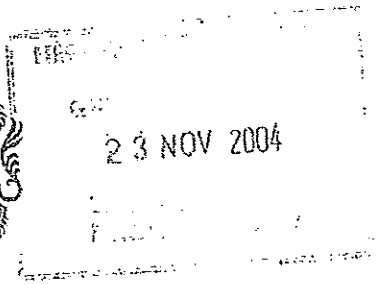


NORTHERN IRELAND
COURT SERVICE

CORONERS SERVICE BRANCH
Bedford House
Bedford Street
Belfast BT2 7DS
Telephone: [redacted]
Fax: [redacted]
Email: coronersservicebranch[redacted]

Mr John L Leckey
HM Coroner
Coroner's Office
Courthouse
Old Town Hall Building
80 Victoria Street
Belfast BT1 3GL

19 November 2004

Dear John

ACCESS TO INQUEST PAPERS ON ADAM STRAIN AND RAYCHEL FERGUSON

Your letter of 17th November 2004 in respect of Dr John Burton's request for access to inquest papers in the Adam Strain and Raychel Ferguson cases has been passed to me for reply.

George Keatley has already responded in the other related case of Lucy Crawford and therefore it is clear that Dr Burton's request for access should be granted in respect of these cases but subject to the same conditions imposed in the Lucy Crawford case.

If you are content with this approach I assume you will inform Dr Burton accordingly.

Yours sincerely

Eric Strain

Eric Strain

HER MAJESTY'S CORONER

DISTRICT OF GREATER BELFAST

John L Leckey LL.M.
H.M. Coroner
Coroner's Office
Courthouse
Old Town Hall Building
80 Victoria Street
Belfast BT1 3GL
Northern Ireland

Telephone: [redacted]
Fax: [redacted]
E-mail: jleckey.rcj[redacted]

Dr John Burton
[redacted]

23rd November 2004

Dear John

I am enclosing correspondence I have received on behalf of the Director of Northern Ireland Court Service, Mr David Lavery.

Perhaps you would let me know if you are content with the approach outlined.

Yours sincerely

J L LECKEY
HM CORONER FOR GREATER BELFAST

Enc

Dr. John Burton
[redacted]

Home phone: [redacted]
Fax .....
Mobile phone:
[redacted]

30th November 2004

To: Mr. John Leckey, LL.M. H.M. Coroner for Greater Belfast.

Re: Research access to the Inquest documents on
Adam Strain, Lucy Crawford and Raychel Ferguson

Dear Mr. Leckey,

Thank you for your letter of 23rd November and the attached correspondence from the Northern Ireland Court Service in response to my request for research access to the Inquest documentation on Adam Strain, Lucy Crawford and Raychel Ferguson.

I accept the strict condition that no report can be published without your permission and that such permission will only be granted after the police investigation and inquiry have been completed.

I intend to confer with you on the issues relating to this matter. I will pay close attention to the sensitivities of the families and avoid adding to their distress. Once again, may I thank you for your assistance in this research, without which it would not be possible?

Yours sincerely,

Dr. John Burton

Deposition of

Mr. Patrick F. Keane, Consultant Urologist, (*Renal Transplant Surgeon*)
c/o Belfast City Hospital.

Dated 18th June 1996

"I was asked to transplant this 4 year old boy on Monday 27th November 1995. The operation started at 7.30am and was technically very difficult because of previous surgery that this young boy had. However, despite the technical difficulties, the kidney was successfully put into the child and perfused quite well initially and started to produce urine. At the end of the procedure, it was obvious that the kidney was not perfusing well as it had done, but this is by no means unusual in renal transplantation. The whole operative procedure took about 3 hours. I was informed later on that day that the child had severe cerebral oedema and that he was probably brain dead.

The first part of this text is a repeat of his letter to Mrs. Susan Young, Complaints Officer, A Floor, Tower Block, Belfast City Hospital dated 11th December 1995. But in his concluding paragraph to Mrs. Young, Mr. Keane stated:-

"In summary, therefore, the operation was difficult but a successful result was achieved at the end of the procedure."

Under Oath, Mr. P. Keane **added** to this deposition by his oral submissions to the Coroner's direct questions, as follows:-

"The operation would have started between 7.15 am and 8.00 am. I do not believe that surgery of that nature should be undertaken at 2, 3 or 4 am, if possible. In this case the kidney being transplanted had been removed within the normal time period before surgery. The blood loss of 1200 cc. was not all blood but contained fluid as well. I was not aware of Arieff's paper. In the light of Adam's experience, the factors in that paper would be carefully considered in future surgery of a similar nature."

Signed; **Patrick Keane**

Extract from: Report to Coroner J L Leckey.
from:- Prof. P.J. Berry
Dated:- 23.3.96.
Subject:- Adam Strain (deceased)

Continuation Sheet 1

I have not been shown a copy of the provisional post-mortem findings. However the brain weighed 1320 grams. I understand that the brain and spinal chord are awaiting a neuropathological opinion. The heart was donated for valve transplantation.

Microscope slides

Kidney: Sections show a scarred kidney with numerous cysts, interstitial fibrosis and chronic inflammation, tubular atrophy, glomerulosclerosis, prominence of the juxta glomerular apparatus, hyperplastic tubules with circumferential mesenchyme, a single focus of hyaline cartilage, Tamm-Horsfall protein and thickened arterioles. The number of glomerular generations is reduced. Many of the cysts appear to be medullary.

Spleen: There is intense congestion of the red pulp.

Lungs: There is capillary congestion, occasional clusters of lymphoid cells, and a moderate number of intra-alveolar macrophages. Oedema is not conspicuous, and there is no evidence of embolism. A section of larynx shows superficial ulceration associated with intubation, and mild mucus retention in mucous glands.

Liver: Normal lobular architecture is accentuated by post-mortem change or possible mild extension of fine fibrous trabeculae from portal tracts. There are curious foci of clear cell change in hepatocytes scattered throughout the liver substance. I do not know the significance of these nor can I relate them to any underlying disease process. Portal tracts do not show the changes seen in hereditary renal cystic diseases.

Lymphnode: No significant abnormality.

Transplant Kidney: The kidney shows almost complete infarction.

Comment:

From my examination of the histological sections I can confirm that this child had severe renal disease supporting the clinical decision to undertake renal transplantation. I note the clinical history of reflux and recurrent urinary tract infection. Whilst the histological appearance is entirely consistent with cystic renal displasia, the medullary cysts, intense interstitial fibrosis, and the history of polyuria raise the possibility of medullary cystic disease. (This is not relevant to the child's death, but may be important in counselling and can be resolved from the clinical history).

The transplant kidney was infarcted (dead). The extent of the change suggested that this occurred at or before the time of transplantation. This could be resolved by enquiries about the fate and function of the donor's other kidney after transplantation.

Contd/....

Dr. John Burton MB BCh BAO, B Leg Sc, LL M

[redacted]

Home phone: [redacted]

Fax .....

Mobile phone: [redacted]

1st January 2005

To: **Dr. Edward Sumner,** Consultant Paediatric Anaesthetist

Re: Inquest in the death of Adam Strain- related issues

Dear Dr. Sumner,

You may recall that I introduced myself to you at the Conor Mitchell Inquest at the Belfast Coroners Court. I am continuing my post-graduate legal research into the role of the Coroner in relation to the implementation of the Human Rights Act. I have enclosed copies of my correspondence with John Leckey and the NI Court Service so that you may confirm my credentials. I would encourage you to make contact with John Leckey to verify my *bona fides*. Following my inspection of the Adam Strain Inquest notes,

I spoke to John Leckey about some of the queries I had in relation to the medical issues. He advised me to first contact you for clarification on whether Professor P. J. Berry's report was available to you and if so what conclusions did you draw from his statement that :-

" Transplant Kidney : The kidney shows almost complete infarction.....
COMMENTS:
The transplanted kidney was infracted (dead). The extent of the change suggested that this occurred at or about the time of transplantation. This could be resolved by enquiries about the fate and function of the donor's other kidney after transplantation."

The inference of Professor Berry's report would seem to be that the transplanted kidney never worked! I feel sure that if your colleague, Patrick Duffy, was to have undertaken this operation he would have ensured that the new kidney's arterio-venous circulation was perfusing well and that there was an observable output of urine. This did not appear to have been recorded.

Yet it would seem unthinkable that the Renal Transplant surgeon for Adam Strain, Mr. Patrick Keane, would not have checked that the new kidney was working. Could he have sewn up the abdomen, knowing that the child's renal transplant had failed? Surely, normal operating procedure would have been to remove a non-function transplanted kidney when it became apparent that it was not going to work.

While both Patrick Keane and Bob Taylor made comments on the complicated nature of the operation and the increased blood loss, I was surprised to find that the Inquest was spared the important details of the surgical difficulties. In contrast, the Paediatric Anaesthetist, Bob Taylor, was expansive in his deposition of nine pages. (Quite frankly, some of his hypotheses would have been unacceptable if he had presented

them for Final Examination in MB BCh. There can be no excuse for failing to have contemporary electrolyte assessments at the start of the renal transplant.)

But Mr. Keane deposed less than one page initially! It is my concern that by 9 or 9.30 am, the operating team were very worried that things were seriously amiss. Your report would suggest that, by then, the pathway to brain stem death was irretrievable. Yet the operating team struggled for almost two more hours and were then surprised when the child did not waken up from the anaesthetic.

Before I sat down to read the Inquest documents on Adam Strain, I had assumed that this death was the start of the '*Hyponatraemia-related deaths*' and that it was unavoidable in the light of the medical knowledge then in common currency amongst 'non-academic' anaesthetists. I certainty agree that had this opportunity been seized and lessons been learned at the time the consequent deaths may well have been avoided.

From the records, it is clear from his correspondence with the Boards, Trusts, the Northern Ireland Department of Health, and the Chief Medical Officer that John Leakey had been given reassurances that this would be case. After examining Adam Strain's Inquest documents for only four hours, in December 2004, I am convinced that the family's allegations of 'cover-up' and medical collusion would be very difficult to defend in this case. I would not attempt to do so.

In summary, can you confirm that you received a copy of Professor P J Berry's report? If so, what importance did you attach to his reference to the "dead" kidney?

I am keeping the Coroner, John Leckey, informed of my correspondence with you and would be grateful if you would forward him a copy of any reply you choose to send me. I am conscious that the serious work of the Inquiry should not be deflected by any unnecessary diversion of time or resources but I am equally sure that any in-depth inquiry with inevitably focus on this issue sooner or later.

Yours sincerely,

John Burton

Edward Sumner MA BM BCh FRCA

[redacted]

Telephone/Fax [redacted]

E-mail

January 12th 2005

Dr John Burton

[redacted]

Dear Dr Burton

I vividly remember meeting you at the inquest of Conor Mitchell.

I was dismayed to receive your letter about the inquest of Adam Strain as I had hoped to conclude my involvement in these cases in Northern Ireland.

I have re-read my report and stand by the contents and the conclusions concerning the mode of death, though I note that I queried that the venous drainage from the head might have made a contribution, as did the pathologist. That there were hyponatraemia and coning is without doubt and that Adam was effectively brain dead by the end of the surgery.

I only attended the first day of the inquest and did not hear Dr Taylor's account. I also did not see Professor Berry's report about the infarcted transplanted kidney. I noted that the pathology report said this kidney was infarcted, but I assumed that this could have happened at any time after the transplant as I had not seen Prof Berry's comments.

In my experience it is not uncommon for the transplanted kidney to fail in the very early postoperative period. It is unthinkable they would have closed the wound if the kidney were not pink and functioning. Sometimes the closure distorts the vascular anastomoses or puts pressure on the venous drainage. In children the transplanted kidney is often relatively large. I could not find any note of the urine volumes passed at any stage. I did note that there was polyuria, but it is not clear when this was. In particular, there is no note I could find of how much urine was being passed at the end of the procedure.

At the end of the procedure when it was found that Adam would not breathe and had fixed dilated pupils, I imagine that the anxieties moved away from the function of the kidney. It is my understanding that Adam was passing urine and that his renal failure

was not of the anuric type, but the quality of the urine was so poor he required dialysis for filtration of waste products. If this were the case then urine output could not be used to assess renal function – it would be necessary to look at the urinary electrolytes and see what was happening to the blood urea and creatinine.

To summarise, I still believe that Adam died from dilutional hyponatraemia which occurred during a kidney transplant. The fact that this transplant failed is not therefore relevant, in my opinion. It is unthinkable that they would have closed up the incision if the kidney function was in doubt at that stage.

I hope these remarks are helpful.

Do come back to me if you want more opinion.

Yours sincerely

Edward Sumner
Consultant paediatric anaesthetist

From: 'esumner' [redacted]
To: [redacted]
Cc:
Subject: Strain
Date: Jun 09 2005, 02:43 PM

Dear Dr Burton - I'm sure you know but the Public Inquiry is using my reports and depositions. They have asked me to give them copies of the correspondence we had in January this year. I told them you must give permission. Actually I don't seem to be able to find a copy of the letter I wrote to you in reply to yours.
Can you let me know?
All the best - Ted

Dr. John Burton MB BCh BAO, B Leg Sc, LL M

[redacted]

Home phone: [redacted]

Fax .....

Mobile phone: [redacted]

[redacted]

30th July 2005

To: Detective Chief Superintendent Philip Wright, MSSc,

Re: ***Assistance to PSNI investigation of Adam Strain's death***

Dear Chief Superintendent,

I understand that you are currently in charge of criminal investigations into the deaths of Raychel Ferguson and Adam Strain.

I wish to make myself available to your investigating officers should they consider that I have any useful input to their inquiries. I am a graduate from Queen's University Belfast, initially in Medicine (1973) and most recently in Law (2003) with LL M (2004). I am continuing my post-graduate law studies, researching for my PhD. In my capacity as an independent medical law researcher I have spent some time analysing the medical documentation which was generated before and after the death of Adam Strain.

If your officers would wish me to speak to them I will be happy to meet with them at a venue of their choosing. Naturally I am reluctant to go into too much detail over the phone, except to arrange a time and date.

I have enclosed my correspondence with the Northern Ireland Court Service and Mr. John J Leckey, the Coroner for Greater Belfast, so that that you may understand something of how I got involved.

I will be in England from 19th to 28th August and in Germany from 2nd to 7th September.

Yours sincerely,

Dr. John Burton LL M

Dr. John Burton
[redacted]

Home phone: [redacted]
Fax .....
Mobile phone
[redacted]

30th July 2005

To: Mr. John Leckey, LL M. H. M. Coroner for Greater Belfast.

Re: Assistance to PSNI investigation of Adam Strain's death

Dear Mr. Leckey,

In compliance with the conditions imposed on me by the Northern Ireland Court Service in our correspondence of November 2004, and which I voluntarily accepted, I wish to notify you that I am writing to the Police Service of Northern Ireland in connection with the PSNI criminal investigation into the death of Adam Strain. I will make myself available to assist their inquiry should the investigating officers consider any input from me worthwhile.

Though you had permitted me access to all the documents relating to the Inquests on Lucy Crawford and Raychel Ferguson, my research interest concentrated on the medical circumstance surrounding Adam Strain's death. In fact, I never examined your files on the late Lucy Crawford in your office.

I will also send a copy of this letter to Mr. David Lavery of the Northern Ireland Court Service, for his information,

Yours sincerely,

Dr. John Burton

cc. David Lavery. Director, Northern Ireland Court Service, Windsor House.

BELFAST CITY HOSPITAL TRUST
incorporating
BELVOIR PARK HOSPITAL

LISBURN ROAD, BELFAST BT9 7AB

TELEPHONE [redacted]
FAX [redacted]

17 June 2005

FOI/010/05

Dr John Burton

[redacted]

Dear Dr Burton

FOI REQUEST – PAEDIATRIC RENAL TRANSPLANTATIONS

I refer to your FOI request dated 14 March 2005.

On behalf of the Trust I would apologise for the length of time it has taken to process and respond to your request.

What should have been a straightforward process of checking operation books for the information was complicated when it was discovered that operation book(s) for part of the period have been misplaced.

The process of manually confirming individual surgeons' names from the identified patient files proved to be more difficult and time consuming than we had anticipated. We can confirm that three sets of notes relating to transplants performed at BCH between 1990 and 1992 are not available from the Library at this time. Therefore we have been unable to confirm details relating to these three cases. We cannot confirm that all relevant surgeons have been identified.

The release of personal data, including individual consultant names is covered both by FOI Legislation and the Data Protection Act.

Those surgeons who were identified were written to. All the consultant surgeons contacted have now responded to the Trust. All but one have advised the Trust, under the Data Protection Act, that they do not give permission for their names to be released. The consultant surgeon who has consented is Mr R Donaldson. In the time period concerned he undertook one paediatric transplantation.

The other surgeons written to were surgical registrars, and all but one have responded. Two have indicated they were agreeable to their name being released. Mr Downey whose name is involved with two cases and Mr Ho whose name is involved in one case. The other surgical registrars who responded have advised the Trust, under the Data Protection Act that they do not give permission for their names to be released. Four surgical registrars could not be contacted.

The Trust has sought legal advice on the matter and has been advised that Section 40 of FOI Legislation and Section 7 (4) of the Data Protection Act 1998, exempts the release of personal data in situations where the individual has not consented to release.

Given the above the Trust will not release the names of those surgeons who have not consented to release.

Yours sincerely

Patricia McCann (PA)

PP **P A HAINES**
FOI Liaison Officer

Staff assistance

Dr. John Burton MB BCh BAO , B Leg Sc, LL M

[redacted]

Home phone: [redacted]

Fax .....

Mobile phone:

[redacted]

12th August 2005

To: Mrs. Bronagh Dalzell, Publications Manager,
Freedom of Information, Royal Victoria Hospital

Re: FoI Request # FOI 24 ; Supplementary questions

Dear Mrs. Dalzell

Further to yesterday's e-mail and its clarification may I request some further details which are important to my research and should hopefully conclude this request? If, however, you would prefer me to submit this formally as a new request - then please consider this correspondence as being that request.

Supplementary QUESTIONS:

"How many of the children, within the data provided, had weights of less than 25 kilogram's at the time of operation?

"Which Surgeons operated upon those children less than 25 kilogram's, also indicting numbers?"

Many thanks for your professional support.

Yours sincerely,

Dr. John Burton LL M.

Kidney (Renal) Transplant Units

Belfast	City Hospital
Birmingham	Queen Elizabeth Hospital
Bristol	Southmead Hospital
Cambridge	Addenbrooke's Hospital *
Cardiff	University Hospital of Wales
Carshalton	St Helier Hospital
Coventry	Walsgrave Hospital
Dublin	Beaumont Hospital
Edinburgh	Royal Infirmary
Glasgow	Western Infirmary
Leeds	St James's University Hospital
Leicester	General Hospital
Liverpool	Royal Liverpool University Hospital *
London	Great Ormond Street Hospital
London	Guy's Hospital *
London	Hammersmith Hospital
London	St George's Hospital
London	St Mary's Hospital *
London	The Royal Free Hospital
London	The Royal London Hospital
Manchester	Royal Infirmary *
Newcastle	Freeman Hospital *
Nottingham	City Hospital
Oxford	Churchill Hospital *
Plymouth	Derriford Hospital
Portsmouth	Queen Alexandra Hospital
Sheffield	Northern General Hospital

Witnesses at Inquest of Adam Strain starting 18.06.1996

1. **Constable S. R. Tester** :- C/o R.U.C. Grosvernor Road, Belfast.

2. **Debra Strain** :- [redacted]

3. **Dr. Alison Armour** :- Senior Registrar, Department of State Pathologist, Institute of Forensic Medicine.

4. **Dr. Edward Sumner** :- Consultant Paediatric Anaesthetics, Great Ormond Street Hospital, London WC1.

5. **Dr. John Alexander** :- [redacted]

6. **Mr. Patrick F. Keane**, Consultant Paediatric Surgeon, Belfast City Hospital.

7. **Dr. Maurice Savage**:- Consultant Paediatric Neurologist, Belfast City Hospital.

8. **Dr. Robert H. (Bob) Taylor**:- Consultant Paediatric Anaesthetist, Belfast City Hospital.

Who is Dr J Cartmill ?

Who is S/N Catherine Murphy ?

Who is Dr O'Neill ?

(K) {Dr Terence Montague - Assistant Anesthetist to Bob Taylor }
{S/N G Popplestone - Staff Nurse who counted the swabs.}

Has the Inquiry received Written Statements from :

(1) Nurse McKenna - the 'runner'

(2) Nurse P Conway - in theatre - pre-op.

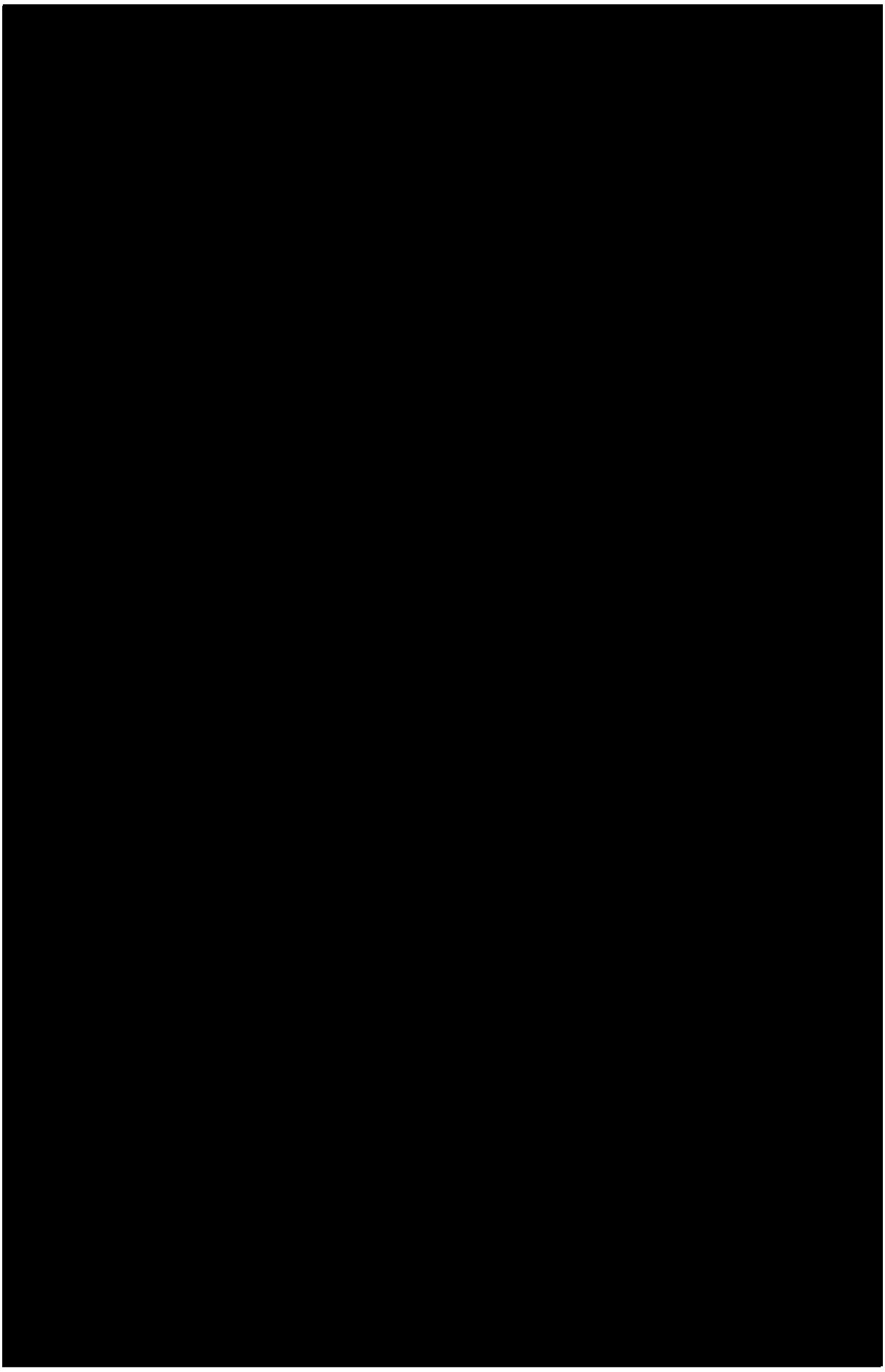
✓ (3) Mr. Stephen Brown - Consultant Paediatric Surgeon

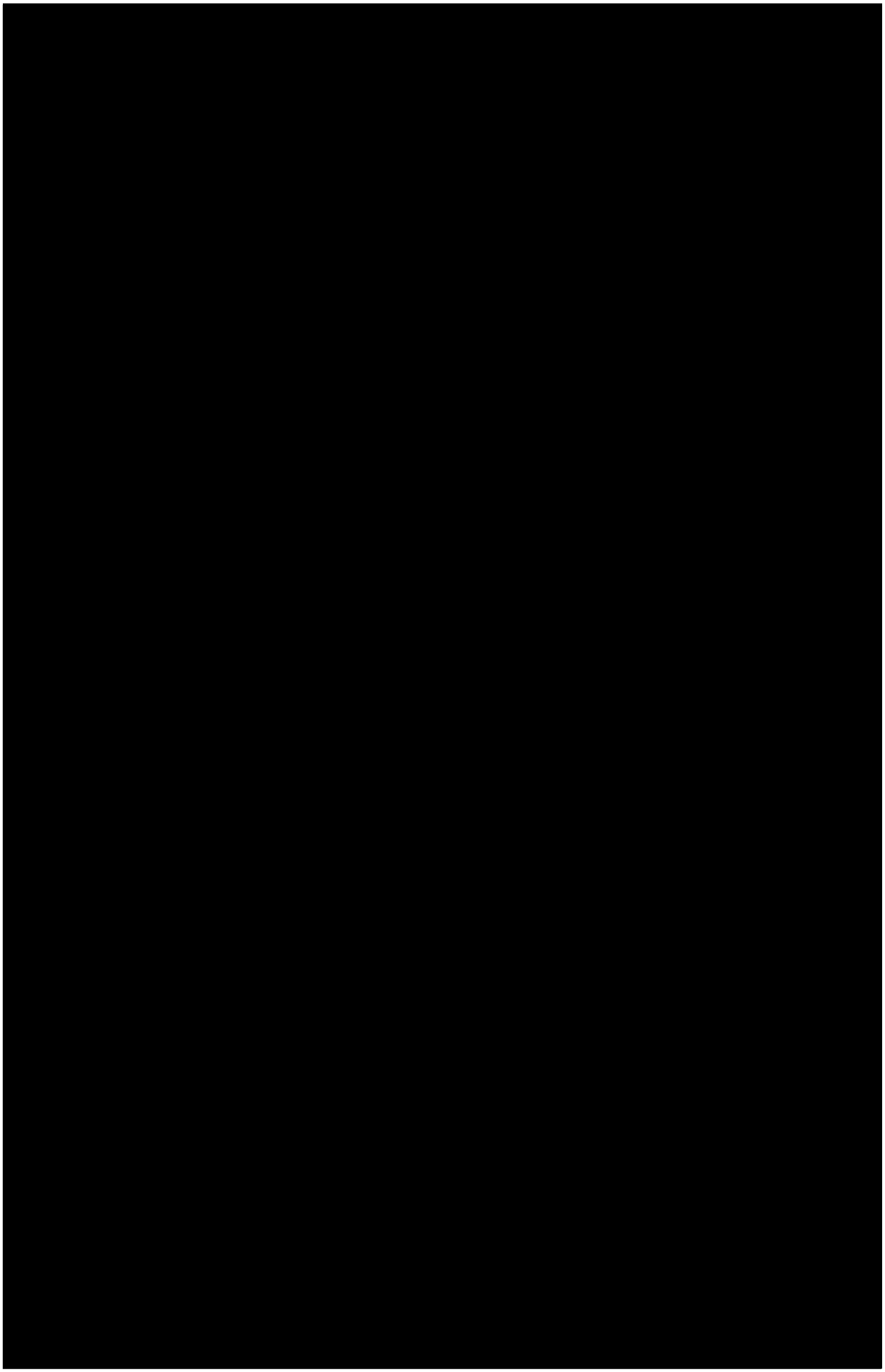
(4) Dr. M. O'Connor - Consultant Paediatric Nephrologists

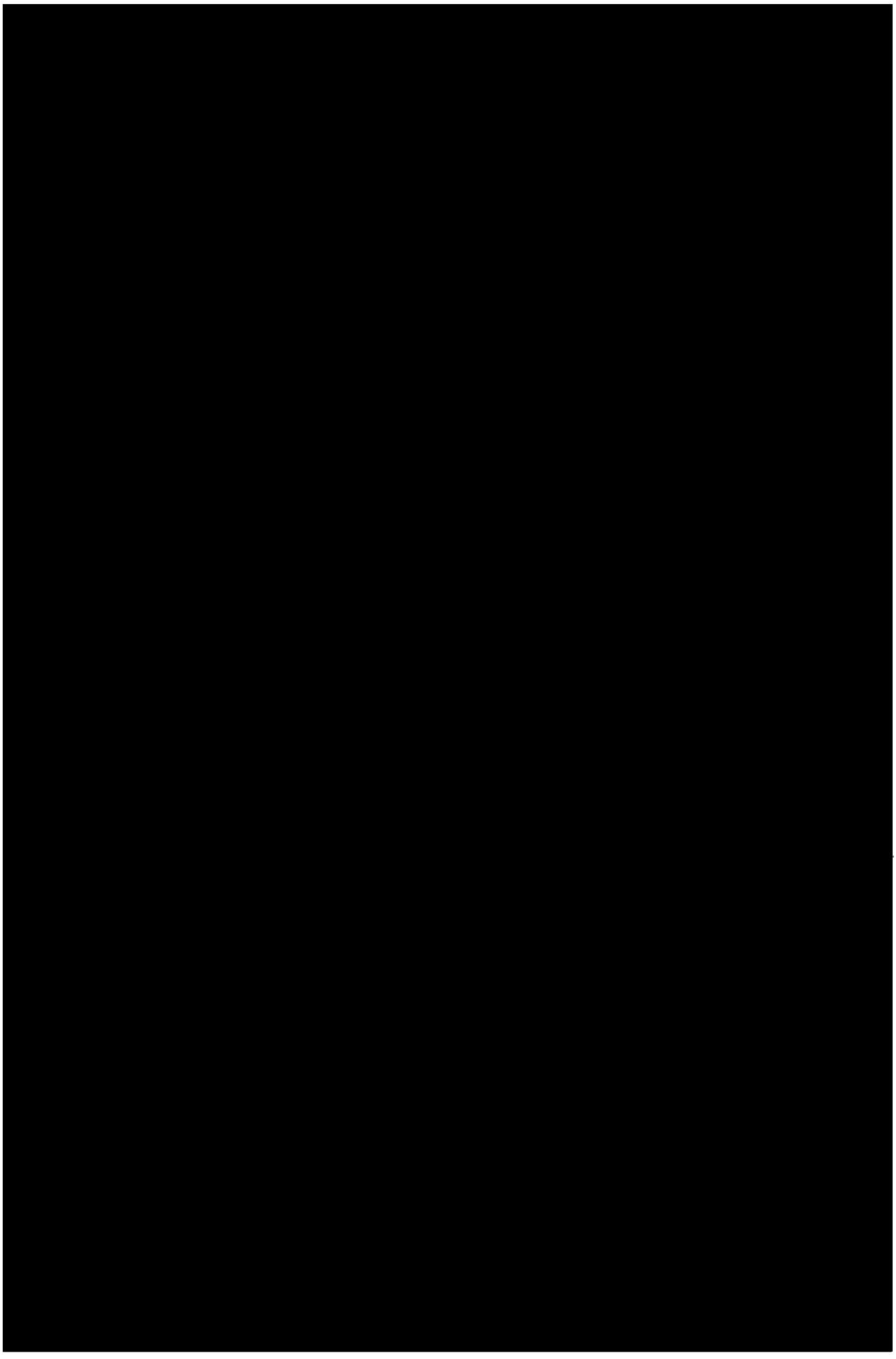
Report for family
by Mr. Dick Donaldson
FRCS,

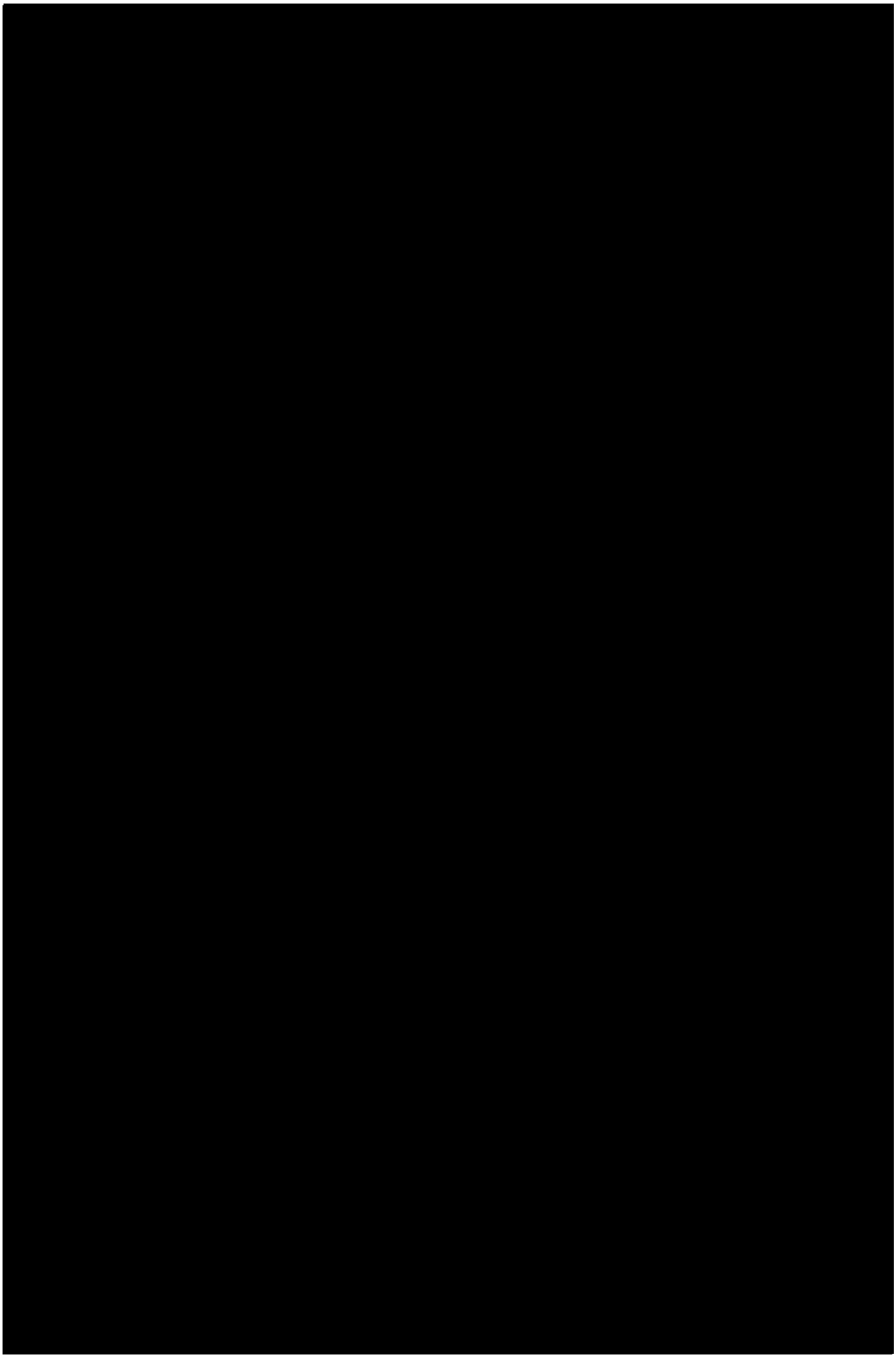
ADAM STRAIN
age-4 years 3 months
Weight - 20 kg.
Well-nourished.

[redacted]

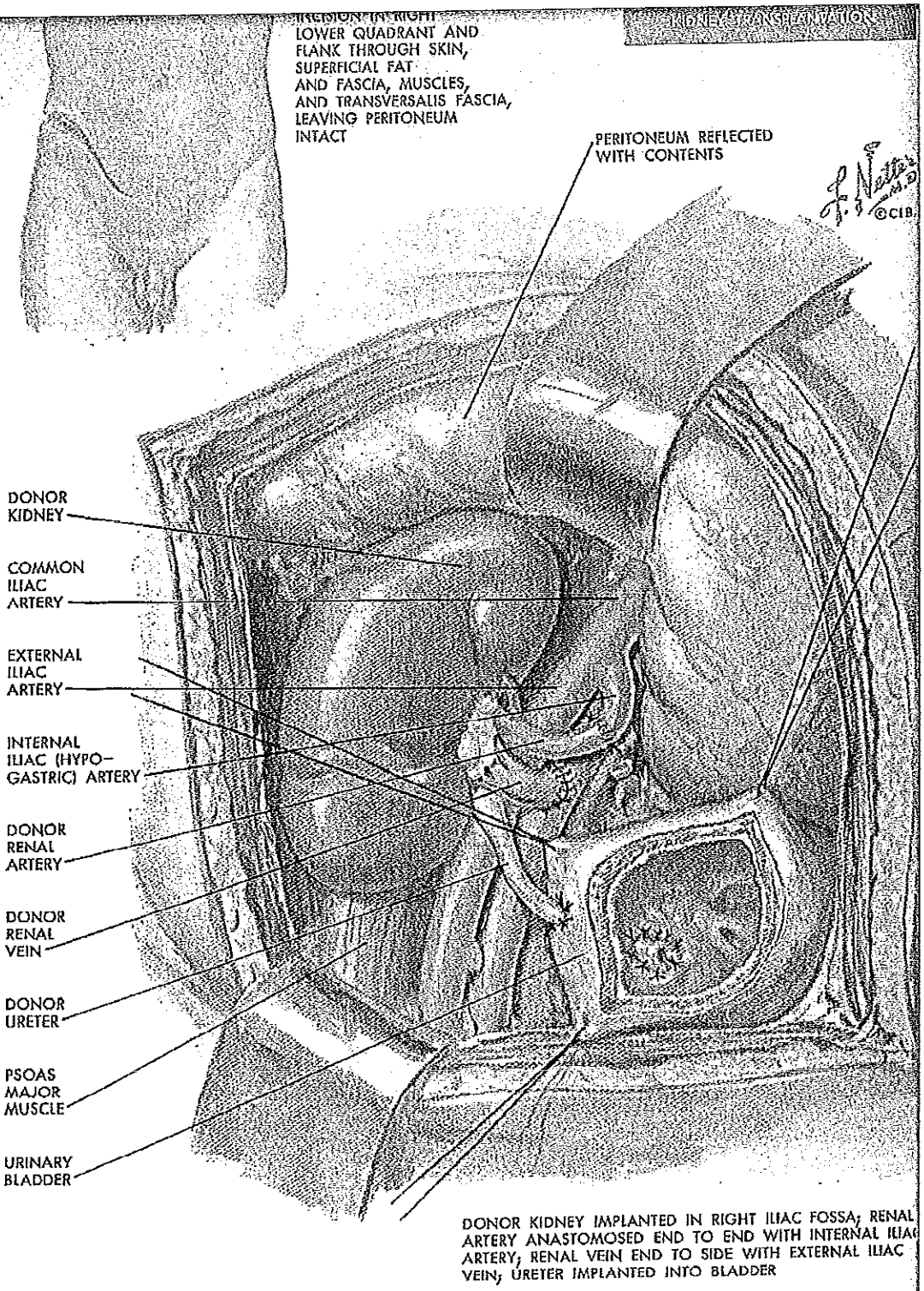








Kidney Transplantation



DONOR KIDNEY IMPLANTED IN RIGHT ILIAC FOSSA; RENAL ARTERY ANASTOMOSED END TO END WITH INTERNAL ILIAC ARTERY; RENAL VEIN END TO SIDE WITH EXTERNAL ILIAC VEIN; URETER IMPLANTED INTO BLADDER

Once considered revolutionary surgical procedure, the transplantation of the human kidney from one individual to another is now acceptable clinical treatment for chronic end-stage renal failure. Nevertheless, the problem of graft rejection still plagues the transplant operation, and efforts to determine the exact nature of the rejection mechanisms and to defeat these mechanisms continue.

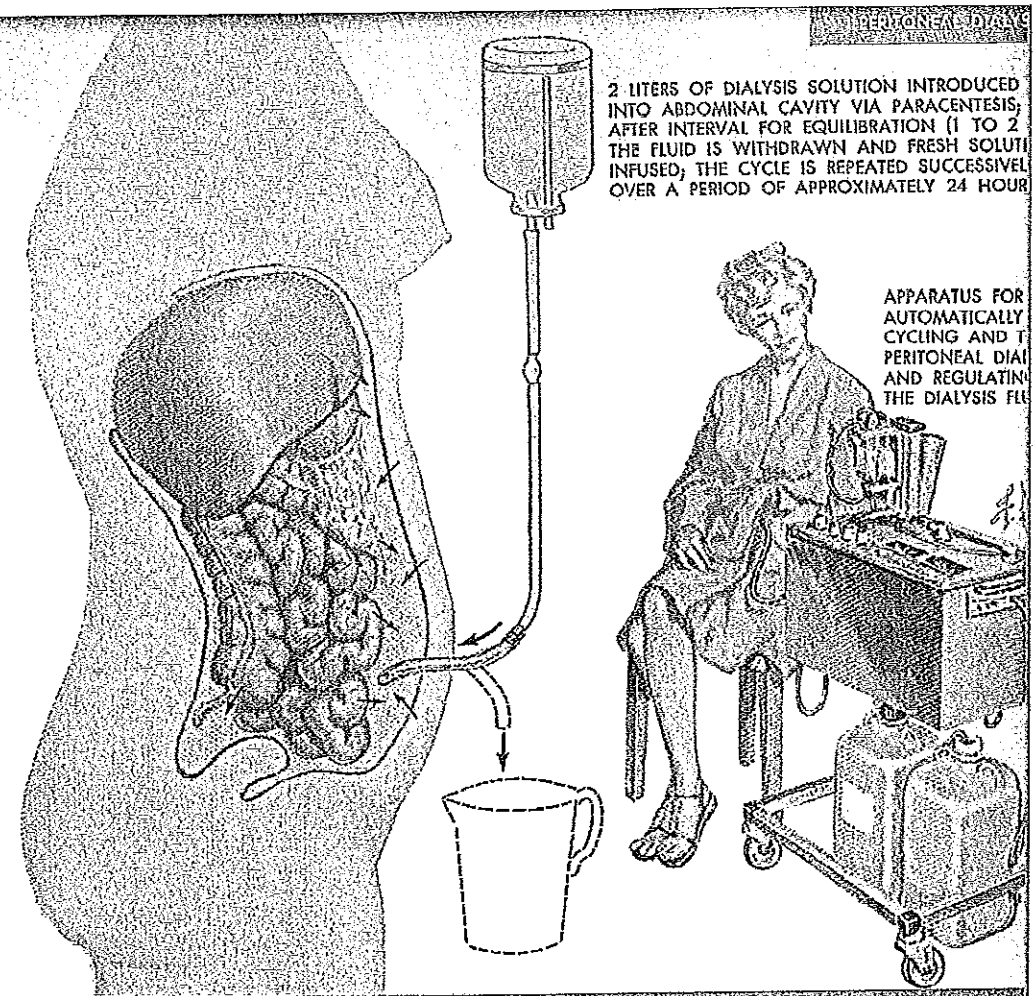
The success of a kidney transplant is directly related to the source of the donated kidney. Kidneys are available from two types of donors. The first of these is the living, related donor who must be of the same blood type as the recipient. A survey published in April, 1973, showed the survival rate over an 8-year period for kidneys transplanted between siblings to be almost 90 percent. Kidneys transplanted from parent to child had a survival rate of approximately 84 percent. The success rate for the second type of donor, the unrelated, cadaver donor, was considerably less—approximately 68 percent for the same 8-year period.

Transplant Technic. When a living donor is available, the surgical procedure begins with the removal of the donor's left kidney, which is then rotated and placed in the recipient's right hemipelvis. Next, the renal artery is anastomosed end to end to the internal iliac (hypogastric) artery, and the renal vein end to side to the external iliac vein. The ureter of the donor kidney is implanted in the bladder through a submucosal tunnel. Alternatively, the recipient ureter may be anastomosed to the renal pelvis of the donor kidney, but the first procedure is considered more satisfactory and is more commonly employed.

Kidneys from cadaver donors are transplanted in much the same way. In this case, the right kidney may be utilized as well in another recipient. This second kidney is rotated and put in the left hemipelvis. Perfusion of the cadaver kidney and cooling by immersion in iced heparin-Ringer's solution usually permits successful transplantation for as long as 6 to 8 hours after the kidney has left the donor.

To suppress the immunologic reaction which causes graft rejection, azathioprine in a dosage of 2 to 3 mg/kg is administered to the patient for 24 hours before transplantation. Decreasing doses are given as renal function resumes. Corticosteroids, usually prednisone (2 mg/kg), are also prescribed on the day of the operation and are similarly tapered following surgery according to the return of renal function. Parenthetically, it is not uncommon for a cadaver kidney, which may have been ischemic for some hours, to remain anuric for a period of days, or even weeks, and then recover normal renal function. The immunosuppressive efficacy of antilymphocyte serum, or of the globulin recently derived from it, has not been established thus far in man.

The rejection process results from the immunization of the recipient by antigens of the donor kidney. The host forms both antibody globulin and sensitized lymphocytes, which seek to destroy the graft largely by acting upon the vasculature, including the glomerulus. *Clinically*, symptoms of rejection are a general feeling of lassitude, malaise, and anorexia. Fever is common, as is leukocytosis. Elevation of the blood pressure is frequent and indicates the involvement of the renal vasculature. Indeed, elevation of the blood pressure may be one of the first signs of chronic rejection. At an early stage, abnormalities in the renal blood flow and urine output may be reflected in the



The effectiveness of this technic depends on matching the rates of heparin and protamine administration to the rate of blood flow through the kidney. Since these two drugs have different distribution spaces in the body, it is possible that heparin returning to the bloodstream via the lymph may exert an anticoagulant effect several hours after the dialysis has ceased. This possibility should be kept in mind and counteracted, if necessary, by the administration of additional doses of protamine.

Peritoneal Dialysis

Peritoneal dialysis and hemodialysis are based on the same physiologic principle. They differ mainly in that peritoneal di- ( ) makes use of an *in vivo* biologic ...brane and is generally less effective.

During peritoneal dialysis, 2 to 4 liters of dialysate is inserted into the peritoneal cavity through an indwelling catheter (Plate 10) or through a large bore needle. The peritoneum then acts as the semipermeable membrane; the noxious solutes in the blood pass across the peritoneal membrane into the dialysis fluid. After a suitable interval to allow for equilibration, generally about 1 to 2 hours, the dialysate fluid, along with its harvest of harmful substances, is removed from the abdomen, either through the indwelling catheter, as illustrated, or through a polyvinyl catheter introduced with a trocar. The entire process is repeated frequently over a period of approximately 24 hours.

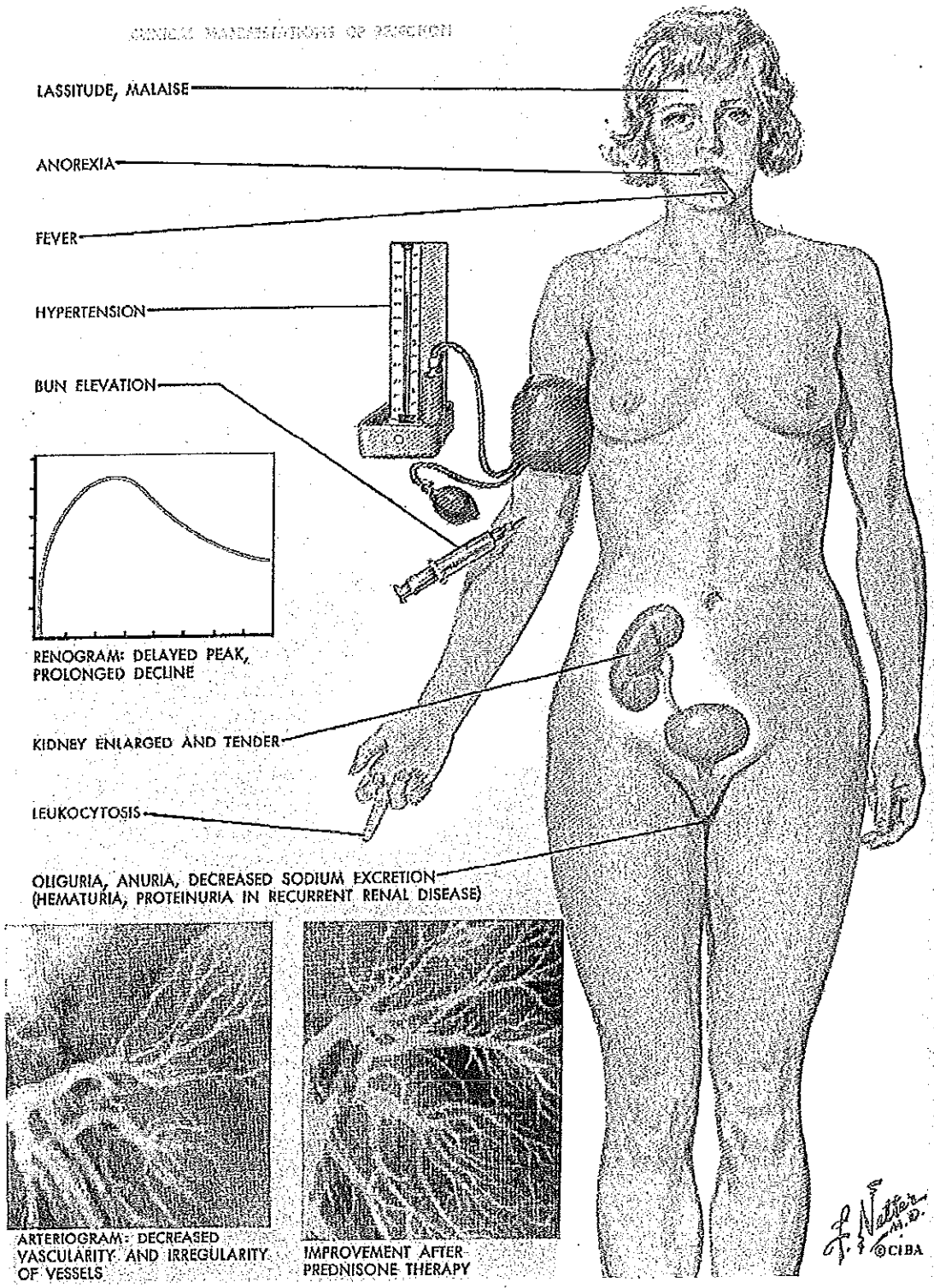
The membrane of the capillary wall seems to be the major cellular barrier in the delivery of blood-borne solutes to the peritoneal cavity. As a result, the rate of diffusion becomes a function of splanchnic blood flow, the concentration differences of solutes between the blood and dialysate fluid, and the degree of mixing of solutes which takes place during the period of equilibration in the peritoneal cavity.

Many drugs have been used in an attempt to enhance splanchnic blood flow or change the qualities of the biologic membrane. Thus far these have met with little success.

With respect to the removal of poisons and the major chemicals studied in uremia, a good peritoneal dialysis can be considered approximately one sixth as efficient as hemodialysis, per unit of time. Nevertheless, the procedure is of value in patients with special conditions, such as myocardial infarction, in whom sudden changes of blood pressure are undesirable. In addition, peritoneal dialysis is helpful in conditions that preclude the use of systemic heparinization. (However, the technic of regional heparinization, as described on page 261, may be a suitable alternative.) Peritoneal dialysis can also be used to maintain patients with chronic renal failure until they can enter a program of chronic dialysis with an artificial ki

Recirculation peritoneal dialysis involves the u two cannulas. In a continuous stream, the dialys pumped into the peritoneal cavity through one nula and returned, via the other, to an ultrafiltr dialyzer. This device not only removes no solutes *from* the dialysis fluid but concentrates, i the dialysate, the protein normally lost durin procedure. When the dialysate is then recycled thr the patient, the increased concentration of pr minimizes further protein losses.

The peritoneal route has been used only spar for patients requiring chronic dialysis, because difficult to achieve nutritional balance with the tein losses that are commonly encountered. N over, infection after 6 or 8 months has been the in all but a few patients, even when the most me lous care has been given to proper sterile technic



dioisotope renogram. A decrease in ıth the height and the promptness of e early phase or peak (delayed) of e renogram, with a prolonged decline presenting failure of urinary washout, dicates decreased renal blood flow and clining urinary output. Elevation of e blood urea nitrogen and creatinine, th decreasing urine volume, is also mmon. Examination of the urine may ow an increase in red cells and pro- nuria and, occasionally, clumps of nphocytes.

In r (ridual with previously nor- al r .nction, a first indication of jection may be an increase in urine os- olality with a decreased sodium con- ntration, again reflecting vascular ef- :ts similar to those of renal arterial ste- sis (see page 85). A renal angiogram tained at this time would show a arked decrease in the visualization of e cortical vessels. The vascular effects ıy be reversed by adequate prednisone erapy.

Because the kidney frequently be- mes enlarged, tender, and painful dur- g the rejection episode, it may be diffi- lt to differentiate between rejection, struction to the ureter, and severe pye- ephritis.

Pathology. To understand the patho- gic picture, it is necessary to review the mmunologic events which culminate in jection. As has been stated, immuniza- ın of the host results from contact with tigens contained in the grafted kidney. ıe severity of this process varies with e antigenic differences between the tis- es of the donor and those of the recipi- t. Immunization of the host results in e production of both antibody globulin and sensitized lymphocytes. Antibody in both of these forms can be seen in and around the vessels of the graft in early stages. The combination of the antigen of the graft and the antibody of the host causes the activation of the complement sequence. The sequence, in turn, gives rise to leukotaxic factors which attract polymorphonuclear leukocytes and may denude the basement membrane of its endothelium. Subsequently, release of lysosomes from the polymorphonuclear leukocytes results in increased permeability and destruction of the wall of the vessel. The denuded basement membrane stimulates platelet deposition and aggregation which then release platelet factor 3. Platelet factor 3 facilitates the precipitation of fibrinogen, with subsequent deposition of fibrin and, ultimately, the organization of fibroblasts. A migration inhibitory factor (MIF) is also released by the activation of the complement sequence. MIF, as a result of the increased vascular permeability created by the preceding events, encourages the aggregation of monocytes at the vessel wall and their migration through the vessel into the renal interstitium. The speed and severity with which the pathologic events occur determine the final picture.

Early biopsy of rat kidney allografts demonstrates the first event in the immunologic rejection of a transplanted kidney. Kidneys are transplanted from one inbred strain of a rat to another to create a constant tissue-type difference. The events noted in the experiments are thus predictable chronologically and can be carefully studied and recorded. The first event seen in the acute rejection of the rat kidney is the deposition of gamma globulin in the walls of the small veins. Cells producing gamma globulin (probably sensitized lymphocytes) approximate the vein wall and some migrate through it into the

Continued on page 266

10th Anniversary NHS Organ Donor Register

NHS

UK Transplant

When replying please quote: JW/McCann letter 040505

Fox Den Road
Stoke Gifford
Bristol
BS34 8RR

Tel: [redacted]
Fax: [redacted]

www.uktransplant.org.uk

McCann McCann Solicitors
Cathedral Terrace
19 Church Street
Belfast BT1 1PG

4 May 2005

Dear Sirs

Re: Next of Kin of Adam Strain (Deceased) – Your Ref: PMACD/LMC/M/277

Thank you for your letter dated 27 April 2005, in relation to representation before The Inquiry into Hyponatraemia-related Deaths.

UK Transplant has already provided information to the solicitor appointed to the Inquiry, in response to a request from the legal representatives for Adam Strain. I assume that your letter is a follow-up to that request.

In answer to your questions, I can confirm that the donor who provided the kidney for Adam Strain was [redacted]. The donor's other kidney was also transplanted on 26 November 1995. The outcome of the other kidney transplant was notified to UKTSSA (now UK Transplant) at the time of routine data follow-up, three months post transplant. The transplant was reported as having failed on the date of transplant, with the cause of failure reported as "infection of graft". The recipient of the kidney was reported to be alive at the time of reporting. I am unable to give further information about that patient, as there is no subsequent record on the National Transplant Database.

I hope that this information is useful to you. If you require further information, please feel free to contact me again.

Yours sincerely

Judy Watt

Mrs Judy Watt
Information Manager

Tel: [redacted] (direct)
judy.watt[redacted]

"Infection" may be a mis-translation of "infarction"

"Infection" is highly unlikely to be the cause of IMMEDIATE graft failure as it would normally take several days to develop to the stage of graft failure.

J Burton

Acquire the pathology report on the second kidney
- giving the Histopathology Pathology of
the "infection" (which might be "infarction").

From UK Renal Transplant Support
- or -
directly from medical director of ? Glasgow Western Hospital.

Royal Group of Hospitals Trust

Re: Adam Strain

Royal Belfast Hospital for Sick Children Casenotes
Hospital No: CH 364377 Chart 9 of 10

PAGE NUMBER:	SUBJECT /DESCRIPTION	DATE
CH 364377 Vol 9 Page:124	Letter from Dr M Savage to Dr Scott	12 May 1995
CH 364377 Vol 9 Page:125	Letter from Dr M Savage to Mr V Boston	14 Apr 1995
CH 364377 Vol 9 Page:126	Letter from Dr M Savage to Mrs J Dick	14 Apr 1995
CH 364377 Vol 9 Page:127	Statement of Dr M Savage	19 June 1995
CH 364377 Vol 9 Page:128	Letter from J Mercer to Dr M Savage	13 June 1995
CH 364377 Vol 9 Page:129	Letter from Dr M Savage to Dr Scott	14 Apr 1995
CH 364377 Vol 9 Page(s):130-131	UKTSSA Recipient Registration Form	24 Nov 1994
CH 364377 Vol 9 Page:132	Discharge Summary	27 Feb 1994
CH 364377 Vol 9 Page(s):133-134	Letter from Dr M Savage to Dr Scott	03 Mar 1995
CH 364377 Vol 9 Page:135	Discharge Summary	27 Feb 1994
CH 364377 Vol 9 Page(s):136-137	Letter from Julie Dick to Dr M Savage	20 Feb 1995
CH 364377 Vol 9 Page(s):138-139	Letter from Dr M Savage to Dr Scott	03 Feb 1995
CH 364377 Vol 9 Page:140	Short Stay Sheet	09 Feb 1995

RGH 13
Royal Belfast Hospital for Sick Children CASENOTES batch
Hospital N0: CH 364377
Chart 10 of 10

Vol 10 page 25-30
Dated 26/11/95

Paper work on UKTSSA
UK Transplant Support Authority
Kidney Donor Information Form # 012040

Organ Number in Transit = No. 024089

Donor :
[redacted]
from Southern General Hospital GLASGOW
Kidney Removed on 26/11/95

ALL CRITERIA show that the RIGHT kidney was in EXCELLENT State in transit to BHSC.

Must discover what happened to recipient of LEFT kidney
(as Prof Berry had suggested in his Report to Coroner in 1996 – but this was not picked up on at the time as the Coroner thought that Prof Berry had no significant contribution to make to the substantive findings, Therefore John Leckey did not call Prof Berry. For the same reason he did not see fit to show the report to Dr. Ted Sumner)

BELFAST CITY HOSPITAL
LISBURN ROAD, BELFAST BT9 7AB
[redacted]
DEPARTMENT OF UROLOGY
TELEPHONE [redacted]
EXTS. [redacted]
FAX [redacted]

REGIONAL UROLOGY SERVICE

MR. P. KEANE - CONSULTANT UROLOGIST

ber 1995

Mrs S Young
Complaints Officer
. Floor
Tower Block

Dear Mrs Young

Re: Adam Strain - Deceased

ust a quick point initially, "one of the surgical team was Mr Patrick Keane, Senior Registrar", I am a Consult ant which would probably make a difference in this case andthat ought to be cleared up with the Coroner first of ill.

was asked to transplant this 4 year old boy on Monday 27 November 1995. The operation started at 7.30 am and was technically very difficult because of previous surgery that this young boy had. However, despite the difficulties the kidney was successfully put into the child and perfused quite well initially and ed to produce urine. At the end of the procedure it was obvious that the kidney was not perfusing as well as it had initially done but this is by no means unusual in renal transplantation. The whole operative procedure took about three hours.

I was informed later on that day that the child had severe cerebral oedema and that he was probably brain dead.

In summary, therefore, the operation was difficult but a successful result was achieved at the end of the procedure.

Yours sincerely

PF Keane
Consultant Urologist
/SH

PS/009-035

DATE 21 DEC 1995	ACTION	INFO
CHAIRM		
CHIEF EX[illegible]		
CLINICAL SERVICES		
CLINICAL DEVELOPMENT		
FINANCE		
OPERATIONAL SUPPORT		
[illegible]		

MISSING DATE-LINE
See Similar Letter to Mr Brangham @ 7 June 1996

Mr Brangham,

These are the reasons why one-fifth normal saline (0.18%) in 4% glucose was given to Adam.
1. It is an isotonic solution

2. It is the standard i.v.maintenance fluid in paediatric practice-eg. used widely for replacement fluid in dehydration.

3. Its sodium and water content resembles the dilute urine produced by Adam's kidneys (>80-100 ml/hr).

4. It resembles exactly the sodium concentration of Adam's night feeds and dioralyte (30 mmol/l NaCl). Although I had permitted oral fluids he had missed 2 hours of this in his fast. Therefore 500 mls were given in the first 30 minutes to replace this deficit and provide maintenance in preparation for the impending transplanted kidney.

5. The alternative fluids 5% or 10% dextrose contain no sodium chloride- which was a crucial factor in deciding to use it. At no time in my management of Adam's fluids was a salt-free solution given.

6. Adam clearly needed the glucose volume and concentration which I administered as his blood sugar was at the low end of normal after the operation. If Hartmanns or 0.9% saline (no glucose content) had been used instead of 0.18 NaCl then a dangerously low blood sugar (hypoglycaemia) would have resulted.

7. Adam's kidneys had lost the ability to concentrate urine (polyuria) so they were unresponsive to ADH (anti-diuretic hormone). Therefore the dilutional hyponatraemia discussed in the paper by Arieff could not have occurred in his case-yet another reason why I had used this fluid initially

After the transplanted kidney failed to function I was very concerned that despite my best calculations and estimate of the losses I had not given sufficient fluid!
HPPF was given to maintain the circulating blood volume
Packed red blood cells given to replace loss from bleeding

PS. On looking back through his anaesthetic record I note that following the blood test at 09.32 I drastically slowed the rate of 0.18 NaCl and commenced Hartmanns. I cannot exactly remember but I was perhaps attempting to correct the low sodium at that time!!!----I need to discuss this with you

THE ROYAL HOSPITALS

DIRECTORATE OF RISK AND LITIGATION MANAGEMENT

1ST FLOOR - EAST WING

MEMORANDUM

FROM: Dr G A Murnaghan
Director of Risk and
Litigation Management

TO: Dr R H Taylor
Consultant Anaesthetist
RBHSC

REF: A.51/96/9/J
A.49/95/43/J

DATE: 9th May 1997

Bob

RE: DEBORAH ON BEHALF OF ADAM STRAIN (DECEASED)

I am sure you will be pleased to be informed that this claim has been successfully concluded by payment of a sum which is not greater than the normal and statutory scale subject to a confidentiality clause binding on both parties to the action.

From a liability position the case could not be defended particularly in the light of the information provided by one of the independent experts retained by HM Coroner at the Inquest. Additionally, it would have been unwise for the Trust to engage in litigation, in a public forum, and given the tragic circumstances of the death. It would not have been helpful for an opportunity to be provided to lawyers to explore any differences of opinion which might exist between various professional witnesses who would have been called to give evidence.

I am grateful for your generous assistance in arriving at this successful conclusion.

George

date typed 09/05/97

/lc

BELFAST CITY HOSPITAL TRUST
incorporating
BELVOIR PARK HOSPITAL

LISBURN ROAD, BELFAST, BT9 7AB

TELEPHONE [redacted]
FAX [redacted]

FOI/010/05

25 July 2005

Dr John Burton
[redacted]

Dear Dr Burton

FOI REQUEST - PAEDIATRIC RENAL TRANSPLANTS

I refer to the Trust's letter of 17 June 2005 and our telephone conversation of 18 July 2005 when I confirmed the outcome of the review was that subject to clarification from the Information Commissioners Office the names of the operating surgeons should be released.

The Information Commissioners office has confirmed that the Data Protection Act does not apply in this instance and it is good practice to release the names.

I attach the names of the operating surgeons and the number of procedures each undertook during the period.

Yours sincerely

P. Haines

P A HAINES
FOI Liaison Officer

Att

PAEDIATRIC TRANSPLANTS – 1 January 1990 to 31 December 1994

Surgeon (surname)	Number Cases surgeon involved with on BCH site
[redacted]	1
	1
	1
	1
	3
McCallion	1
[redacted]	1
	4
Keane	4
[redacted]	2
	2
	1
	1
	2

N.B.
Some cases involved 2 surgeons
Not all surgeons performing transplants were consultants at time of operation

Summary of 49 paediatric transplants performed in the time period:

1. Performed at BCH – notes not available/surgeon not identified	:	3
2. Performed at BCH – surgeon identified	:	16
3. Performed at RBHSC	:	30
TOTAL	:	49

The ROYAL HOSPITALS

Dr John Burton

[redacted]

FOI Request Ref: FOI24
Date: 17 May 2005

Dear Dr Burton

Thank you for your request for information.

I am able to confirm that the number of renal transplants performed in The Royal Belfast Hospital for Sick Children from 1 January 1990 to 31 December 2004 numbered 28.

Of these, 2 were performed in 1990; 1 in 1991; 2 in 1993; 3 in 1995; 4 in 1996; 3 in 1997; 2 in 1998; 3 in 1999; 2 in 2000; 3 in 2002; 1 in 2003, and 2 in 2004.

I am not in a position as yet to supply you with the names of the surgeons but will do so once I have that information. If you have any queries about this letter, please contact me. Please remember to quote the reference number above in any future communications.

I hope this is useful to you.

Yours sincerely

BDalzell

Bronagh Dalzell
Publications Manager

Deadline for 25.04.05
Tuesday 25.04.05

CHILDREN UNDER 14 YEARS OLD TRANSPLANTED JANUARY 1990 - DECEMBER 2004						
Name		Hospital	Transplant Date			
1		BCH	20/02/90			
2		BCH	29/04/90			
3		BCH	25/05/90			
4		BCH	16/06/90			
5		BCH	19/09/90			
6		RBHSC	31/10/90			
7		BCH	19/12/90			
8		BCH	27/04/91			
9		RBHSC	30/05/91			
10		BCH	17/10/91			
11		BCH	03/02/92			
12		BCH	06/02/92			
13		RBHSC	12/11/92			
14		BCH	17/04/93			
15		BCH	14/05/93			
16		BCH	07/10/93			
17		BCH	25/05/94			
18		BCH	25/05/94			
19		BCH	18/07/94			
20		BCH	11/12/94			
21		BCH	09/04/95			
22		BCH	01/05/95			
23		RBHSC	27/09/95			
24		RBHSC	17/11/95			
25	✓	RBHSC	27/11/95			
26		RBHSC	27/02/96			
27		BCH	07/04/96			
28		RBHSC	15/06/96			
29		RBHSC	24/07/96			
30		RBHSC	28/08/96			
31		RBHSC	06/11/96			
32		BCH	26/04/97			
33		RBHSC	29/07/97			
34		RBHSC	01/08/97			
35		RBHSC	27/12/97			
36		RBHSC	22/02/98			
37		RBHSC	24/04/98			
38		BCH	09/02/99			
39		RBHSC	20/03/99			
40		RBHSC	25/04/99			
41		RBHSC	15/09/99			
42		RBHSC	31/03/00			
43		RBHSC	17/07/00			
44		RBHSC	04/02/02			
45		RBHSC	21/03/02			
46		RBHSC	13/11/02			
47		RBHSC	23/04/03			
48		RBHSC	01/07/04			
49		RBHSC	31/07/04			

Children under 14 years transplanted January 1990 – December 2004 – BHSC

31/10/90

30/05/91

12/11/92

27/09/95

17/11/95

27/11/95

27/02/96

15/06/96

24/07/96

28/08/96

06/11/96

29/07/97

01/08/97

27/12/97

22/02/98

24/04/98

20/03/99

25/04/99

15/09/99

31/03/00

17/07/00

04/02/02

21/03/02

13/11/02

23/04/03

01/07/04

31/07/04

'Publications Manager' <Publications.Manager[redacted]>

To: "Dr. John Burton" [redacted]
Cc:
Subject: FOI24: renal transplants
Date: Jul 11 2005, 03:26 PM

Dear Dr Burton

In my absence my colleague, Jo McGinley, has helped finalise the queries I was comfirming with our solicitors. I am happy today to be able to provide you with the names of the consultant surgeons involved in renal transplants performed in the Royal Belfast Hospital for Sick Children (RBHSC) during the period from 1 January 1990 to 31 December 2004.

As you are aware, there were a number of related issues that arose from this request which delayed my full response to you. I have now cleared these up and would like to take this opportunity to apologise for the inconvenience that this delay may have caused.

In total there were 28 renal transplants performed in RBHSC. As I previously discussed with you, I cannot give you the dates of the operations because of patient confidentiality, but of the operations performed over these 14 years our records show that Mr Connolly was involved in 15; Mr Kernaghan in five; Mr Keane in two; Mr Donaldson and Mr Boston were jointly involved in two and Mr Keane and Mr Boston jointly involved in one.

According to our records, there are three operations in which either Mr Keane or Mr Kernaghan were involved. However, we are unable to determine which of the two was the lead surgeon.

I hope that you find this information helpful and that the delay has not hampered your research too greatly.

Yours sincerely

Bronagh Dalzell
Publications Manager

Bronagh Dalzell
Publications Manager
The Royal Hospitals
Grosvenor Road
Belfast, BT12 6BA

T: [redacted]
F:
E: publications.manager[redacted]