up, should yield equally impressive results. If the authors are sceptical of this they should carry out a further study along these lines.

The authors' belief that "there will always be some women who will be forced to seek legal termination" prompts me to ask who do they think is going to apply this pressure? If it is the "force" of suggestion by society via husband or boy-friend, then surely the doctor must redress this imbalance by ensuring that his patient understands as far as possible the full implications of her request.

In conclusion, the authors' hope that the unhappiness of many of their patients has been replaced with the possibility of a brighter future by this policy of abortion and contraception is, with respect, a little naive and also premature. They are no doubt aware of the increasing weight of evidence linking therapeutic abortion with subsequent infertility,¹ miscarriages,² pre-maturity, increased perinatal mortality rate,³ and various gynaecological problems.⁴ Have they any evidence that the 360 women in their study are going to be exempt from such consequences?—I am, etc.,

J. A. CURTIS

Stoke-on-Trent

- 1 Stallworthy, J. A., Moolgaoker, A. S., and Walsh, J. J., *Lancet*, 1971, 2, 1245.
- 2 Wright, C. S. W., Campbell, S., and Beazley, J., *Lancet*, 1972, 1, 1278.
- 3 Klinger, A., *International Journal of Gynaecology and Obstetrics*, 1970, 8, 680.
- 4 Brudenell, M., *Proceedings of the Royal Society of Medicine*, 1971, 65, 155.

Antibiotic Discs Active against Resistant Organisms

SIR,—The letter by Mr. D. F. J. Brown and Dr. J. B. Selkon (23 March, p. 573) prompts me to describe a similar experience.

While I was attempting to demonstrate that penicillinase-producing *Staphylococcus aureus* may show large zones of inhibition around penicillin discs the organism was inoculated on to DST agar medium (Oxoid) on which discs stated to contain 5 units of benzylpenicillin and 2 µg, 10 µg, and 25 µg ampicillin respectively were placed. The following day, while the other discs did not show any zones of inhibition, a zone of 24 mm diameter was seen around the 2-µg ampicillin disc. The edge of this zone did not have the typical heaped-up appearance seen with penicillinase-producing organisms. Furthermore, other 2-µg ampicillin discs of the same batch did not show a zone of inhibition when tested against *Escherichia coli* (NCTC 10418), a known sensitive strain.

The zone of inhibition produced by these evidently faulty discs when tested against the Oxford strain of *Staph. aureus* (NCTC 6571) was neither reduced nor eliminated by the addition of penicillinase to the medium, whereas penicillinase prevented zones being produced by 2-µg, 10-µg, and 25-µg ampicillin discs of other batches. Obviously the suspect discs did not contain the antibiotic with which they were labelled. Attempts to identify the antibacterial substance in these discs were not successful but seemingly it was some substance active against *Staph. aureus* but not against any of the strains of *E. coli*, *Klebsiella* spp. and *Pseudomonas aeruginosa* tested.

Six vials of this batch of faulty discs had been recently received in the laboratory and stored at 4°C. Several discs from each vial gave similar results. Had these discs not produced a satisfactory zone with the Gram-negative control strain of *E. coli* (NCTC 10418) in the routine tests it might have been assumed that they contained an incorrect amount of the intended drug. The fact that they contained a substance other than that intended would not have been immediately evident.

Unlike the experience of Mr. Brown and Dr. Selkon all the discs tested in the batch were faulty and this should have been detected by the manufacturers' quality control procedures. Clearly, there is a need for urgent action to ensure that antimicrobial drug sensitivity discs comply with the manufacturers' description of them.—I am, etc.,

M. S. SHAFI

Department of Microbiology,
Central Middlesex Hospital,
London N.W.10

Growth after Renal Transplantation

SIR,—Your leading article (1 December 1973, p. 505) raised pertinent questions concerning the crucial role of growth in the rehabilitation of children treated with chronic dialysis and transplantation. I do not believe that your statement that "the growth problems on dialysis are usually less than those following transplantation" is supported by the little evidence that is available. Evaluation of growth data of 46 children dialysed longer than a year in four centres¹⁻⁴ and seven children in our centre reveals that only six of the 53 grew at a normal rate for their age and sex (four of seven in our centre). Growth after transplantation appears to be better. Grushkin and Fine⁵ reported normal growth of six of 26 children followed up longer than a year, though a more pertinent figure would be six of 18, since eight children already had fused epiphyses at the time of transplantation. In children treated with alternate-day prednisone McEnery *et al.*⁶ found normal growth in four of 10. Of a total of 38 children in our centre, only seven grew at a normal rate; all seven were in a group of 21 who were treated with alternate-day rather than daily prednisone.

The factors causing growth retardation in children on dialysis and after transplantation are incompletely understood but seem to be primarily calorie deficiency in the former and steroid therapy in the latter. Some improvement in growth has been noted with the use of calorie supplements in children on dialysis⁷ and alternate-day prednisone regimens in children post transplant.^{6,8} At present, however, the long-term growth of most children treated with either dialysis or transplantation is poor and the available evidence does not support the statement that dialysis is preferable to transplantation in this regard.—I am, etc.,

DONALD E. POTTER

Department of Pediatrics,
University of California Medical Center,
San Francisco, California

- 1 Bailloil, R. A., Ku, G., and Moorhead, J. F., *Proceedings of the European Dialysis and Transplant Association*, 1972, 9, 335.
- 2 Broyer, M., Kleinkecht, C., Lohr, C., Marti-Henneberg, C., and Roy, M. P., *Proceedings of*

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- 4 Cameron, J. S., *Nephron*, 1973, 11, 221.
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- 7 Simmons, J. M., Wilson, C. J., Potter, D. E., and Holliday, M. A., *New Zealand Journal of Medicine*, 1971, 285, 653.
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Correction of Plasma Calcium Measurements

SIR,—The two recent papers on this important subject (15 December 1973, pp. 640 and 643) have left some confusion in their wake. Dr. A. M. Parfitt (16 March, p. 520) has already made the very important point that as the point of correction is to gain a better indication of the ionized calcium level, a proportional rather than an absolute correction should be applied. Other correspondents (9 February, p. 245, and 2 March, p. 393) have commented on the discrepancies between the correction factors given in the two papers. In fact the factors proposed (0.91 and 0.99 mg calcium/100 ml per 1 g albumin/100 ml respectively) are less strikingly different from each other than they are from other recently reported estimates which lie in the region of 0.7.¹⁻³

The figure of Dr. Berry and his colleagues (15 December, p. 640) must be an overestimate for their cuffing technique leads to an increase in globulin and other macromolecules capable of binding calcium as well as albumin. Their factor thus represents not albumin binding but total plasma binding expressed in terms of albumin. It is appropriate only as a correction for changes due to cuffing and cannot properly be applied to the more useful purpose of allowing for variation in albumin levels in individual patients.

Dr. Payne and his colleagues (15 December, p. 643) have estimated a true albumin correction factor, but should their result supplant previous lower estimates? Their factor was derived from a study of a group of patients including many with hyperglobulinaemia. If, as seems reasonably likely, there were an association between albumin and globulin, the estimate of the regression of calcium on albumin would be biased, a positive correlation leading to overestimation because of the added binding effect of globulins. Unless the authors are able to discount this possibility it would seem wise for those wishing to correct calcium measurements to hold to previous lower estimates of the factor.—I am, etc.,

H. M. HODKINSON

Northwick Park Hospital,
Harrow, Middlesex

- 1 Moore, E. W., *Gastroenterology*, 1971, 60, 43.
- 2 Orrell, D. H., *Clinica Chimica Acta*, 1971, 35, 483.
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The "Filth Row"

SIR,—Cleanliness in public buildings conduces to morale as well as to health. Schools, which should be educative, and hospitals, where the frail are congratulated, are par-

ticularly important. The *Sunday Times* recently¹ publicized the case of a hospital nurse, Mrs. O'Neill, and the excrementally soiled lavatory walls of which she complained. It is remarkable that the hospital secretary should be reported to have stated, as it were in defence, that the walls remained soiled for eight days rather than the 18 days claimed by Mrs. O'Neill. It is even more extraordinary that the case should be said to draw "attention to the lack of any agreed procedure for disciplining nurses." What it should draw immediate attention to is the lack of any agreed procedure for cleaning hospitals.

Part of the trouble may lie in the Crown exclusion of N.H.S. hospitals from the province of the (public) Health Inspectorate. Can we not now open the hospital services to inspection by the health inspectors of the new local authorities?—I am, etc.,

MAIR THOMAS

Elizabeth Garrett Anderson Hospital,
London N.W.1

¹ Gillie, O., *Sunday Times*, 17 March, 1974, p. 6.

Coping with Nose-bleeds

SIR,—There is a surprising omission from your leading article (9 March, p. 405). The treatment of anterior epistaxis is adequately summarized, and even the use of an inflatable rubber bag in the nasal cavity is mentioned. However, posterior epistaxis, which is generally more profuse and constitutes a more serious problem in management, receives less attention. The only advice given to the general practitioner or casualty surgeon is to transfer the patient, presumably still bleeding profusely, to hospital for administration of a general anaesthetic. The use of a Foley catheter obviates the necessity for anaesthesia with the concomitant dangers of regurgitation of blood from the stomach and possible aspiration. The catheter can be easily inserted through the nasal cavity, even local anaesthesia being unnecessary, and inflated when it reaches the epipharynx. Gentle traction into the choanal opening produces an effective seal and prevents the swallowing or aspiration of blood. Transport and further management of the patient are thereby simplified and removal of his form of post-nasal packing is easily performed and causes minimal patient discomfort.—I am, etc.,

IAIN W. S. MAIR

Department of Otolaryngology,
Sentralsykehuset,
Tromsø, Norway

SIR,—Epistaxis is a common problem, as your leading article states (9 March, p. 405), and in the middle-aged to elderly it is often difficult to control. In this group it is often impossible to detect a bleeding point in the accessible area of the nose. Nasal packing is not an easy operation and often badly done; it is certainly unpleasant and often distressing. For this reason I have used epsilon-aminocaproic acid or tranexamic acid by intravenous injection when the simple primary procedures of recumbency, sedation, and external compression have failed.

In my own experience of some dozens of such cases I can recall only one failure and

so was surprised at the brusque dismissal of this method in your leading article. I am sorry to be unable to give learned comment on the fibrinolytic activity of the nasal mucosa, but Rasmussen has done so.¹ Nor do I feel competent to organize a satisfactory double-blind controlled trial in a busy accident and emergency department. It does, however, seem logical to employ an antifibrinolytic agent when bleeding is persistent, even in the absence of evidence of primary inhibition of fibrin formation, as it may have an effect on clot formation, which in the circumstances is clearly inadequate for whatever reason. To argue that clotting cannot be enhanced by the use of an antifibrinolytic agent seems as illogical as to contend that epistaxis is persistent because of the absence of a nasal pack.

In fact I am in the excellent company of many prostatic surgeons in finding epsilon-aminocaproic acid an excellent haemostat in awkward circumstances.—I am, etc.,

R. H. HARDY

Accident and Emergency Department,
General Hospital,
Hereford

¹ Rasmussen, A. B., *Acta Otolaryngologica*, 1966, 61, 221.

SIR,—Concerning your leading article (9 March, p. 405) on the above subject, I feel that in view of the rather involved measures described I should write to you of my experience of nose-bleeding.

About 35 years ago as a houseman I was called to a medical ward to a patient who had nose-bleeding, and on my way I contemplated my previous rather ineffective experiences of packing the nose in such cases. When I arrived I was confronted by the very experienced, very senior ward sister who announced, "Whatever the cause there is only one treatment and it never fails." A cork about an inch long is placed between the upper and lower teeth to hold the mouth open and a wide bandage is wound around the head from the chin to the top of the head, where it is knotted. This maintains gentle pressure on the cork and as the mouth is thus held open the patient is obliged to breathe through the mouth and the clotting process is left undisturbed. The nose must not be blown or sniffed. It usually takes about 15 minutes. I have a high degree of confidence in this procedure which I have used and seen used many times during these many years and I hope its use might be the means of avoiding some of the more involved procedures described.—I am, etc.,

J. H. L. NEWNHAM

Tunworth, Hants

Death during Dental Anaesthesia

SIR,—I read with interest the comment made by Dr. J. G. Bourne (16 March, p. 516) on the case of a recent death during dental anaesthesia which was reported in your medicolegal column (2 February, p. 207). I should like to report a recent fatal case of severe unaccountable collapse following administration of anaesthesia in a dental chair.

A healthy child aged 10 needed dental extractions as he was suffering from an alveolar abscess and was in pain. He had developed chickenpox

two days earlier. The child was instructed to take two 10 mg trimeprazine tablets an hour before attending.

The child walked in to the dental surgery and was seated in the chair semi-upright (45°). He looked rather pale but at the time this was presumed to be due to the fact that he was in pain and had had a sleepless night. He was anaesthetized with 75% nitrous oxide, 25% oxygen, and 1.5% halothane. The concentration of halothane was later reduced to 1.0%. The respiration and colour of the child were monitored continuously and the pulse was felt intermittently. The dentist then removed the first four molar teeth. Both induction and extraction were quick and easy, together taking five minutes at the most. At the end of the procedure the child looked extremely pale and his pulse was slow and feeble. However, it was noted that he was not sweating. The chair was immediately tilted right back so that the child was in about 10° head-down tilt and his legs were held up by a nurse. External cardiac compression was commenced and the lungs inflated rhythmically with oxygen. The child was taken to hospital, where he was treated for ventricular fibrillation but improvement was transient and he died 2½ hours after the collapse. Necropsy findings were negative.

It appears that the child had a vasovagal attack. In this case the hypotensive episode or cardiovascular collapse occurred without apparent cause or warning. Once peripheral vasodilation has begun and blood pressure is falling the sitting position will increase cerebral oligemia by gravitational pooling of blood in the dependent portions of the body and will further lead to reduced filling of the right atrium and cardiac output. There is no doubt that whatever the cause of hypotension its outcome in terms of brain damage or death of the patient is greatly influenced by the upright position traditionally used in dentistry. Though death during dental anaesthesia is rare, the difficulty in recognizing a vasovagal attack accounts for the fact that it occurs even with the most careful and experienced anaesthetists. Perhaps either by abandoning the sitting position or by adopting intensive monitoring while anaesthetizing patients in the dental chair one could avoid these occasional fatalities.—I am, etc.,

S. MEHTA

Anaesthetic Department,
Burnley General Hospital,
Burnley, Lancs

Central Nervous System Effects of Pentazocine

SIR,—We were interested to note the findings of Dr. A. J. J. Wood and others (23 February, p. 305), who investigated the effects of pentazocine on the central nervous system. We also have noted hallucinations in patients who received pentazocine in the postoperative period. However, we have found that hallucinations in association with other analgesic drugs are not uncommon. In a study of patients in the postoperative period we have compared the incidence of hallucinations following the administration of pentazocine with that following morphine.

Patients admitted for elective general surgery were allocated randomly to two groups. For postoperative pain relief those in one group were given pentazocine 40-50 mg intramuscularly and those in the other group were given morphine 10 mg intramuscularly. The frequency of administration of these drugs was at the discretion of the nursing staff. Twenty-four hours after operation the patients were questioned regarding unusual experiences since the operation, particularly whether they had seen, heard, or felt anything that seemed