made for improved management is the routine use in severe asthma of intravenous aminophylline. This is unexceptionable as a statement of the present consensus, but may no longer be appropriate.

Aminophylline has been known to cause sudden death since 1943,¹ when Merill recorded three personal cases and two other fatalities reported to him. He said, "I feel that aminophylline should be used only when safer drugs have failed to give relief." A further three deaths were documented in 1948.² In 1971 Camarata *et al.*,³ in a review of cardiac arrest in the critically ill, identified an immediate potentially remediable cause in 33 out of 132 cases. In 13 of these the coup de grâce was intravenous aminophylline given over three to five minutes. They recommended abandonment of its use.

A leading article in the *Lancet*⁴ reminded that agitation, convulsions, tachycardia, hypotension, and sudden death are complications of intravenous aminophylline. It was pointed out that bronchodilation occurs at serum concentrations of only 10 µg/ml, which may be achieved by relatively low-dose infusion. This may be comparatively safe but is a more cumbersome procedure, unsuitable for resuscitation outside hospital and inconvenient for casualty departments.

An alternative bronchodilator is intravenous salbutamol,⁵⁻⁸ which is as effective as aminophylline^{7,8} and safer,^{5,6} and may be conveniently used as a bolus of 100-500 µg intravenously.^{5,7} Though a single injection of 500 µg salbutamol costs about five times as much as 250 mg aminophylline, its greater safety surely makes it the drug of first choice, as previously suggested in your columns.⁹

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¹ Merill, G A, *Journal of the American Medical Association*, 1943, **123**, 1115.

² Bresnick, E, *et al*, *Journal of the American Medical Association*, 1948, **136**, 397.

³ Camarata, L A, *et al*, *Circulation*, 1971, **44**, 688.

⁴ *Lancet*, 1973, **2**, 950.

⁵ Fitchett, D H, *et al*, *British Medical Journal*, 1975, **1**, 53.

⁶ Femi-Pearce, D, *et al*, *British Medical Journal*, 1977, **1**, 491.

⁷ Williams, S J, *et al*, *British Medical Journal*, 1975, **4**, 685.

⁸ Johnson, A J, *et al*, *British Medical Journal*, 1978, **1**, 1013.

⁹ *British Medical Journal*, 1978, **1**, 873.

Colostrum deficiency

SIR,—In animals colostrum deficiency syndromes are well recognised in the very young. For example, fetal zinc deficiency develops in infant mice fed only on mature mouse milk¹; "scours" (*Escherichia coli* diarrhoea) can be a scourge in calves.

In man the situation represents a cultural void that is quite underinvestigated—mainly, perhaps, because colostrum has been passively considered as a sort of "throw-away" interim secretion before the real thing materialises. In fact, in the first five days' post partum colostrum is a highly concentrated source of an extraordinarily wide range of "host resistance factors" (humoral and cellular), and, less appreciated, of some nutrients,² notably vitamins A, E, B₆ and B₁₂, zinc, certain amino-acids (cystine, taurine), calcium, carnitine, etc.

Immediate colostrum deprivation syndromes can then include neonatal diarrhoea (*E coli*,

rotaviruses), which can be fatal. In fact, dosed colostrum has been given daily to all in a low-birth-weight unit to control endemic diarrhoea.³ The later effects of colostrum deficiency may be due to neonates not receiving these "depot-doses" of vitamins E and A etc. Clinically significant ill effects may be noted only in special circumstances—that is, in premature infants and in countries where subsequent intakes of retinol are low.

On cans of powdered formula intended as a substitute for bitches' milk (Esbilac), there is the caveat: "All puppies should receive their dam's milk for at least two days, if possible. The colostrum gives extra nutrition and temporary immunity against some diseases." Dr H Barrie's point of view (10 February, p 410) exemplifies similar stereotyped medical thinking related to breast-feeding in general until recent years.⁴ Perhaps refocusing research attention on colostrum as an undoubtedly significant biological bridging fluid may put Dr Barrie's anxieties to rest and ensure that human babies are rated higher than second-class puppies.

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¹ Nishimura, H, *Journal of Nutrition*, 1953, **49**, 79.

² Jelliffe, E F P, *Nutritional Composition of Colostrum*. In press.

³ Largaia, A M, *et al*, *Archivos Argentinos de Pediatría*, 1974, **72**, 109.

⁴ Jelliffe, D B J, and Jelliffe, E F P, *Human Milk in the Modern World*. Oxford, OUP, 1978.

Communication with patients

SIR,—I write to commend Dr Ann Oakley's Personal Paper (31 March, p 861) which was written with such refreshing style and candour that one looks forward to the novel she promised to devote herself to next year. The contrast between this completely healthy attitude and that exhibited in the Special Article on "Fighting cancer—one patient's perspective" in the *New England Journal of Medicine*¹ deserves to be quoted in any textbook or article on British and American attitudes to disease. The latter article recorded the experiences of another PhD who kept his tumorous testicle to himself for three months and then delayed the entirely proper exploration advised, because he felt he had little control over the decision to perform orchidectomy should it prove malignant. Only when a chest radiograph showed a metastasis did he consent to exploration. There were several more examples of that patient's demands to be a backseat driver without the necessary knowledge of how to control the car. There was no evidence that that patient felt at all grateful that his medical attendants had obviously saved his life in spite of his own recalcitrance. It is apparent that Dr Oakley is not without manipulative tendencies of her own, but at least her approach seems to have been reasonable and her demands did not interfere with the management of her malignancy.

She does complain about patient-doctor communication, and I would like to take her up on that point. There are doctors who are so uncommunicative even to their colleagues that one would wonder how they ever fathered children (these medicos all seem to be male), but most of us who are primarily concerned in the management of malignancy do talk to our

patients. Patients, on the other hand, are a very varied lot, ranging from the stoic or the elderly, who often prefer to place themselves completely in the hands of their medical attendant, to those who reiterate the same querulous and sometimes irrelevant question at each consultation. Between lie the intelligent, who may or may not trust the advice given and who demand and merit a full explanation. But it all takes time, and, with an appointment schedule slipping far behind, doctors are not to be too harshly blamed if their explanations become more brief as the meeting progresses. It is not uncommon for the same patient who demands a lengthy discussion to complain about being kept waiting because the previous patient or relative has also required a prolonged session.

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¹ Fiore, N, *New England Journal of Medicine*, 1979, **300**, 284.

Continuous lumbar epidural analgesia for labour and delivery

SIR,—We wish to reply to the comments made by Dr R Derom and others (19 May, p 1351) as we disagree with their conclusions. At Pembury Hospital we have taken a special interest in the breech delivery since 1972 and would agree with the comments of Dr Selwyn Crawford's review on continuous lumbar epidural analgesia for labour and delivery (13 January, p 72).

In 1972 we suggested that asphyxia was of special significance in the management of the breech labour as the risk of cerebral damage during delivery of the head would thereby be increased, and we showed that early detection of asphyxia was possible by routine fetal blood sampling in the second stage of labour.¹ In 1976 we suggested the intensive management of the breech labour using fetal blood sampling in the second stage to determine the mode of delivery, and we are still continuing a long-term paediatric follow-up of these cases correlating their second-stage and delivery pH values.²

Many clinicians have reservations regarding the use of epidural analgesia in the management of vaginal delivery because of the theoretical risks of an increased incidence of breech extraction and prolonged labour. However, as mentioned by Crawford's review, there have been several recent papers advocating epidural analgesia³⁻⁵ which suggested that the incidence of breech extraction was not increased, although Crawford found the second stage of labour increased. All these surveys were retrospective, however, and epidural analgesia was given in only a small proportion of all the breech deliveries.

In 1976 we conducted a prospective trial for 12 months with conditions identical to those for our 1976 paper, the only exception being that epidural analgesia was advised.⁶ There were 59 singleton breech deliveries of greater than 32 weeks' gestation which were induced (plus three fetal abnormalities excluded from the trial); epidural analgesia was established in 86% of these patients. We found the mean duration of labour to be 7 hours 42 minutes in the epidural group, compared with 7 hours 52 minutes in the control group. Surprisingly, it was necessary

to expedite the delivery in only 16.6% of the trial group compared with 29% of the control group. The fetal condition in the epidural series was improved, with 16.1% having a pH of less than 7.25 compared with 34.3% of the controls. The improved fetal condition in the second stage was also reflected by the difference in the Apgar scores. We proposed that this improvement in the epidural series resulted from the abolition of the bearing-down reflex, which caused a reduction in maternal expulsive efforts and a consequent improvement in the uteroplacental flow.

We have been especially concerned about the well-known premature maternal expulsive efforts that occur in multigravida breech deliveries before full dilatation of the cervix. This is well illustrated in one of our eight patients who did not receive epidural analgesia (no anaesthetist available). This patient, a multigravida, started to bear down before full cervical dilatation, resulting in a traumatic delivery of the after-coming head through an incompletely dilated cervix. The baby died after 24 hours and was found to have an intracranial haemorrhage as a result of bilateral tentorial tears.

We believe that a vaginal breech delivery is best achieved with a well-relaxed and co-operative patient with good analgesia, which is superior with an epidural. In addition, we did not see the precipitous spontaneous breech delivery that can often occur in grand multiparity. In conclusion, we agree with Crawford's review and would strongly recommend epidural analgesia in the management of all vaginal breech deliveries. We have shown that breech extraction is not increased, and the fetal condition, as shown by pH in the second stage of labour and Apgar scores, is greatly improved.

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² Hill, J G, et al, *British Journal of Obstetrics and Gynaecology*, 1976, **83**, 271.

³ Bowen-Simpkins, P, and Fergusson, I L C, *British Journal of Anaesthesia*, 1974, **46**, 420.

⁴ Crawford, J S, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1974, **81**, 867.

⁵ Darby, S, Thornton, C A, and Hunter, D J, *British Journal of Obstetrics and Gynaecology*, 1976, **83**, 35.

⁶ Breeson, A J, et al, *British Journal of Anaesthesia*, 1978, **50**, 1227.

Pain as an old friend

SIR,—Professor Desmond Curran reminds me that the title of my article "Pain as an old friend" (26 May, p 1405) was used by Dr John Penman¹ in a study of 275 patients who had been given alcohol injections for the treatment of tic douloureux. Although around 20-25% were completely pleased with the treatment, 55% at follow-up had some reservations, and severe neurotic symptoms occurred in 2%. It was, apparently, not unusual when pain was relieved for depression to set in, as though the departure of a chronic pain meant the loss of a treasured possession, leading to depression and causing the patient to emphasise the inevitable drawbacks of the treatment.

In my experience this has rarely been so in the treatment of rheumatic or arthritic disorders when pain relief has been complete—for example, after a successful uncomplicated surgical hip replacement or in the rapid relief experienced with corticosteroids in the treatment of giant-cell arteritis or polymyalgia rheumatica; but when relief has been incomplete and unpleasant symptoms of any sort have persisted or appeared after any form of therapy disappointment, resentment, and depressive symptoms may certainly appear. When relief has been complete in most cases the Old Friend departs unless there are emotional or financial reasons (or both) for his staying in residence.

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¹ Penman, J, *Lancet*, 1954, **1**, 633.

Extradural haematoma: effect of delayed treatment

SIR,—The paper by Dr A D Mendelow and his colleagues at the Edinburgh Royal Infirmary (12 May, p 1240) is an important contribution to the debate about the care of head injury. It underlines strikingly the dangers of delay in evacuating an intracranial haematoma once deterioration has started and stimulates a review of the methods of managing patients developing this complication.

In Britain, as in most countries where neurosurgical services are regionally organised, patients with head injuries are managed in one of three ways: (a) neurosurgeons care for all hospitalised patients, even those with trivial injuries; (b) patients are managed entirely outwith a neurosurgical unit and general or accident surgeons accept responsibility for any surgery which is necessary; (c) neurosurgeons care for a selected proportion of patients, usually those suspected of having an intracranial haematoma because of deteriorating responsiveness. In deciding the best method it is important that conclusions are drawn from an adequate basis.

The Edinburgh report is restricted to pure extradural haematomas, yet these are only a minority of acute traumatic intracranial haematomas. Their importance, both in frequency and as a cause of death and disability, is outweighed by the various kinds of intradural haematoma. The mortality rate of 5-7% in patients with a pure extradural haematoma, which was recorded just over a decade ago by Jamieson and Yelland,¹ has yet to be improved; Jamieson, however, subsequently commented² that a similar approach to management did not improve results in patients with an intradural haematoma and this lesion is much more difficult to manage.

We agree that neurosurgeons should be more closely involved in the management of more patients with head injuries than they have sometimes been in the past. The best method might ideally be for neurosurgeons to care for all hospitalised patients with head injuries, but to adopt this practice throughout Scotland would require the allocation to neurosurgeons of an extra 230 beds and supporting staff³; nationally collected statistics indicate that the Edinburgh unit itself accepts only half the head injury admissions in its region. It seems important to learn how many of the remaining patients in the Lothian

region develop a haematoma, how these are managed, and with what results. In contrast to the views expressed in the Edinburgh paper, we believe that these patients also are best treated in a neurosurgical unit because few other surgeons possess either the techniques or the desire to deal with an intradural haematoma and its complications.

The main drawback in management by secondary transfer to neurosurgical care only after the onset of deteriorating responsiveness is the risk that irreversible brain damage occurs before the haematoma can be evacuated.⁴ It now seems possible to propose a fourth method for managing patients with head injuries which might avoid this problem. Instead of waiting for deterioration, certain patients are referred for investigation by computerised axial tomography (CAT) whenever there are already other grounds for suspecting an intracranial complication—the presence of focal neurological signs; altered consciousness; and perhaps even a skull fracture. This routine was not warranted when the diagnosis of a haematoma depended on angiography (because of its difficulties and risks) or exploratory burr holes (because of their unreliability) but the safety and reliability of CAT has now made such a policy feasible. Whether all haematomas so disclosed need to be removed is uncertain but initial results in our own unit suggest that elective investigation of selected patients reduces the mortality and morbidity from all haematomas.

An extradural haematoma is the best known surgical complication of head injury, but many other factors have to be taken into consideration when deciding what is the most effective method for managing patients with head injuries.

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² Jamieson, K G, *Journal of Neurosurgery*, 1970, **33**, 632.

³ McMillan, R, Strang, I, and Jennett, B, *Health Bulletin*, 1979, **37**, 75.

⁴ Galbraith, S, *British Medical Journal*, 1976, **1**, 1438.

Ruptured cerebral aneurysm and brawling

SIR,—Dr Bernard Knight in his discussion of ruptured cerebral aneurysm in brawling sailors (26 May, p 1430) highlights an occasional medical, if not legal, problem in the armed services. Brawling is unfortunately common both in the armed services and in civilian life. In the 10-year period 1968-77 (representing 1.6 million man years for British Army males) there were 30 deaths associated with brawling, five of which were of the accidental type described by Dr Knight, three being from proved rupture of a cerebral aneurysm, and two from myocardial infarction found at necropsy. The total number of deaths from subarachnoid haemorrhage during this period was 34 (cerebral aneurysm was found in 24), and 12 of these cases occurred during strenuous exercise, including the three brawling cases.

When one considers the type of strenuous activity associated with subarachnoid haemorrhage, brawling tops the list. In this series, formal sport accounted for only two cases,