Such may be the case, but the group shown by Thomas (1974) to be at risk in a study of inpatients, were those younger than the age of 47 months and weighing less than 15.5 kg. Only four such patients were included in Padfield's study (1984). I have had personal experience that would indicate that outpatients are at risk from hypoglycaemia.

A 30-month-old Caucasian female with a tooth root abscess underwent removal of a right upper quadrant D as an outpatient. She had nil by mouth for 12 h and had no previous medical or anaesthetic history. Anaesthesia was induced with nitrous oxide and halothane in oxygen and was maintained with the same mixture via a nasal mask. Total anaesthetic time was 7 min.

The recovery phase was prolonged. After 12 min the patient was noted to be well oxygenated with good tidal excursions but was unrousable, sweaty and had a tachycardia in excess of 140 beat min⁻¹. A Dextrostix (Ames) at this time recorded a blood sugar of less than 1.4 mmol litre⁻¹. Later laboratory analysis revealed the blood sugar to be 1.1 mmol litre⁻¹. After the administration of 50% glucose 15 ml she awoke within 90 s, with no neurological sequelae.

Senior (1973) has discussed whether children who became hypoglycaemic during starvation have a separate biochemical abnormality or are purely the extreme of a normal distribution. The combined number of patients younger than 4 yr in the studies of Graham (1979) and Padfield (1984) is 28. This is not enough to exclude a low but significant incidence of hypoglycaemia, as the example quoted above suggests.

The lesson is clear. Even in outpatients, when children are being anaesthetised, adequate carbohydrate intake may have to be ensured. Hypoglycaemia should be considered as one possible cause of unexplained alterations in conscious level in this age group.

R. P. Harpin
Toronto

REFERENCES


Sir,—Thank you for the opportunity to respond to Dr Harpin’s letter, I am pleased that he has emphasized the fact that hypoglycaemia can occur in outpatients younger than 4 yr. However, children of this age group are naturally uncommon as dental outpatients, hence the small number in my study.

On checking my original data, I find that the four patients younger than 4 years had all eaten within the previous 5–8 h and thus had not starved for as long as Dr Harpin’s patient.

It might be wise to defer patients younger than 4 yr to afternoon sessions, allowing them to have breakfast and thus curtailing the long overnight period of fasting.

A. Padfield
Sheffield

Sir,—The long-term cannulation of the extradural space in the management of pain is new, and the literature on possible complications sparse. We would like to draw the attention of your readers to a hitherto undescribed complication.

A previously healthy young man was found, at operation, to have an inoperable adenocarcinoma of the rectum with retroperitoneal spread. Scintigraphy demonstrated metastases in the skull, ribs, sternum, vertebral column and liver.

After operation his condition deteriorated rapidly, and he was managed with blood transfusion, systemic steroids and extradural morphine for the relief of pain.

An extradural catheter was inserted at the second lumbar intervertebral space. The insertion was easy and without complications. Morphine 8 mg was injected two to four times per 24 h, resulting in relief of pain without side-effects.

After 35 days of treatment increasing resistance to injection was experienced, and after 42 days (and a total of 115 injections) further injection was impossible. On examination the catheter seemed to be in situ, without any sign of kinking or other apparent reason to explain the loss of function. The catheter was removed and found to be intact.

Because of the poor condition of the patient a new catheter was not inserted, and he was managed with analgesics by mouth and subcutaneously until death occurred 6 days later.

At autopsy the skeleton was found to be infiltrated widely by metastases, in the spine located to the cancellous bone of the vertebral bodies. Histological examination of tissue from the site of the extradural catheter showed the extradural side of the dura mater covered with cell-masses of metastatic carcinoma, and the extradural space and the soft tissue between the two opposing spinous processes was infiltrated by cancer tissue. No cancer tissue was demonstrated in the central nervous system.

Loss of function of an extradural catheter in long-term therapy is usually caused by kinking, or external pressure to, the catheter. Also, gradual closing of the side-holes has been reported, possibly caused by local changes in temperature. Other well known complications that might cause occlusion of the catheter are extradural haematoma and abscesses, but occlusion by metastatic cancer tissue has, to our knowledge, never been described.

What caused the presence of metastatic cancer tissue in the extradural space is uncertain. Our investigations seem to indicate that these metastases were not present at the time of cannulation. Nothing has suggested that cancer cells were implanted by the cannulation procedure from osseous metastases, but perhaps by implantation of cells from nearby soft tissue metastases. Another explanation might possibly be lodgement of tumour emboli around the catheter, the soft tissue being already affected by non-specific inflammatory or foreign-body reactions.

Whatever the pathogenetic mechanism, one should remember that metastatic cancer invasion of the extradural space is possible and can cause obstruction of the catheter.

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