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Computed tomography in childhood epilepsy

Sir,

Children attending the school at the David Lewis Centre for Epilepsy are a selected group, as with few exceptions they are residential pupils from various parts of the United Kingdom and therefore are likely to have severe and often multiple handicaps. It seemed probable that a group of such children might show a high incidence of significant abnormalities on computed tomography.

The children attending the school at the David Lewis Centre and examined by computed tomography over several years numbered 222; there were 154 boys and 68 girls, aged 7 to 19 years. The results showed that 152 were normal. There were 28 with evidence of some degree of generalised atrophy and 30 with focal atrophy. Nine showed calcification and in three the findings were compatible with a cerebral tumour. Abnormalities in three of the children is in agreement with the findings of Bachman et al.1 and Yang et al.2 Bachman et al studied 98 children with chronic seizure disorders, and computed tomograms identified structural abnormalities in 30%, almost half having generalised or focal atrophy. Two per cent showed possible evidence of unsuspected cerebral tumours. In the study of Yang et al, 256 computed tomograms were performed to aid the evaluation of children with seizure disorders. There were abnormalities in 33% that were found mainly among those with partial seizures and generalised seizures of known aetiology, but also in those with neonatal seizures and in those with abnormal neurological findings and focal slowing shown on electroencephalography. Five patients were found to have cerebral tumours, one a porencephalic cyst, and one extraventricular communicating hydrocephalus. The use of computed tomography among children with non-specific mental retardation also seems to be unhelpful,3 but when the mental retardation is associated with infantile spasms the scan is often abnormal, showing evidence of tuberculous sclerosis or agenesis of the corpus callosum.4

Therefore it seems unlikely that a selected group of children such as those attending a special residential school will show more abnormalities than those seen in hospital outpatient clinics. Also the use of routine computed tomography in the investigation of children with epilepsy seems unjustified, although it will be indicated if there are symptoms and signs suggestive of a focal lesion. Twenty two children who showed thickening of the skull vault, and often proliferation of the intracranial sinuses, and 25 children with evidence of cerebral atrophy were assessed for correlations with the antiepileptic drugs that had been given and with the possible timing of the damage to the brain. Phenytoin and carbamazepine had been given to an equal number in both groups, which did not support the role of these drugs in causing thickening of the skull bones. The onset of seizures was more frequent during the first year in the first group, which may suggest an impairment of cerebral development at an early stage, which is also indicated by the thickening of the bones.

References


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Henoch-Schönlein purpura secondary to trauma

Sir,

The aetiology of Henoch-Schönlein purpura (HSP) is controversial. Various bacterial and viral infections together with drug and food sensitivity have been identified as possible aetiological factors.5 No mention of trauma as a causative agent has been found in the literature. It is postulated that a traumatic event produces a shower of antigenic material of joint contents or tissue breakdown products which may initiate HSP.

We describe two cases where trauma preceded the symptoms of HSP.

Case reports

CASE 1

A 2 year old boy was brought to casualty with a limp after a fall the previous day. He had a swollen and tender right ankle. Radiological investigation showed an undisplaced fracture of the metaphysis of the right fibula. He was treated conservatively and later discharged. Two days later he returned to casualty with a painful left ankle. He was irritable, his temperature was 37.1°C, and he had a maculopapular rash. HSP was diagnosed and subsequently he developed abdominal discomfort, lymphadenopathy, proteinuria, and purpura. The bruise overlying his right ankle was yellow whereas the purpura of the HSP were blue/black.
CASE 2

A 10 year old boy presented to the surgery of his general practitioner with a two day history of a painful left ankle after a boy had stamped on it. This had been treated initially by the school nurse. In addition he had a swollen painful right ankle which had developed on the day of presentation after a cross country run. Radiological investigation showed no bony injury.

When he was reviewed the next day the bruising to the ankles had developed into a purpuric rash which later spread to his legs and buttocks. HSP was diagnosed and he was admitted to hospital.

Chance association between trauma and HSP is always a possibility but on discussing these cases it emerged that the general practitioner (RC) had encountered two families with a high incidence of HSP sometimes related to trauma. One family had two brothers with HSP, one of whom had developed his HSP after a territorial army exercise in Germany. The second family had a grandfather who used to drive a steam lorry. This carried guns from Vickers Armstrong Newcastle to the ship yards on the Firth of Forth. There was a steep bank on this route at Berwick where the lorry required vigorous stoking. On several occasions while being so occupied he would develop severe pain in the ankles and a purpuric rash on his lower legs which at the time he attributed to the heat from the open boiler door!

References


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Immunoglobulins in very low birthweight premature infants

Sir,

Conway et al reported on the immunoglobulin supplementation of very low birthweight (VLBW) neonates. The IgG concentrations measured in the control group were, however, considerably higher than those reported for preterm babies born between the 29th and 32nd weeks of gestation. The higher absolute values might have originated from the different methods of determination and statistical analysis. Nevertheless, not only were the absolute concentrations higher but also the postnatal relative decrease in IgG concentration was less marked than expected.

These differences are especially interesting for us as in our unpublished follow up investigation on VLBW neonates we also found unexpectedly high immunoglobulin concentrations. As practically all VLBW neonates require at least one packed red cell transfusion in the neonatal period, so one possible factor in the background of a higher immunoglobulin concentration may be the influence of transfusions.

In order to elucidate whether packed red cell transfusions can alter immunoglobulin concentrations we measured the immunoglobulin content of 15 blood units used for transfusing babies of mean (SD) postconceptional age of 32.5 (3.4) weeks and postnatal age of 27 (13) days. The following concentrations were found (mean (SD)): packed cell volume, 60.1 (1-2)%; IgG, 10.0 (3.4) g/l; IgA, 1.43 (0-70) g/l; and IgM, 1.3 (1-65) g/l.

By knowing the amount of blood transfused (15 ml/kg) and the pretransfusion packed cell volume of the recipients, and by estimating the circulating blood volume to be 85 ml/kg the impact of the transfusion on serum immunoglobulin concentrations could be calculated. One packed cell transfusion theoretically increased the IgG concentration by 0.93 (0-40) g/l, IgA by 0.14 (0-09) g/l, and IgM by 0.12 (0-15) g/l. Certainly, after extravascular distribution of the immunoglobulins the effect is less marked, however, presumably still not negligible.

It is suggested that in VLBW neonates the 'normal' immunoglobulin concentrations reported may reflect not only endogenous production but exogenous intake by means of the transfusions as well.

Cardiovascular collapse after verapamil in supraventricular tachycardia

Sir,

Kirk et al report the occurrence of severe hypotension and death after treatment of paroxysmal supraventricular tachycardia with verapamil. The fact that digoxin was also employed in three of the five cases is ignored. The interaction of verapamil and digoxin and their potential for producing in concert serious adverse effects and even death were reported previously. Likewise, it is important to emphasise the authors' caution regarding the unpredictable effects of the combination of verapamil and proprano-