Guidelines for imaging children with head injuries in A&E departments

EDITOR,—Please see below (panel) guidelines for imaging children who present to the A&E department as a result of head injuries. We have managed to achieve a temporary consensus (at least) between the A&E department, radiology department, two paediatric neurologists, and a paediatric neurosurgeon, which must be some form of record! The reason for devising local recommendations came about as we felt that the Royal College of Radiology guidelines booklet paid insufficient attention to the needs of children presenting to A&E as a consequence of a variety of head injuries. Although guidelines for managing adult patients with head injuries can be applied to children, the indications for skull radiography and for emergency CT scanning can be different in a paediatric population, and so we have made our own modifications.1 2 Our local recommendations are based somewhat loosely on the RCR guidelines booklet for skull radiography in adults.3 Despite the wide availability of CT scanners, we are aware of no imaging protocol or strategy, specifically for the paediatric population with head injuries, that includes a rational use of both skull radiography and CT.4

Our recommendations are intended to act as a guide to paediatricians and A&E staff managing children with head injuries—a full clinical history where possible and a clear clinical judgement are necessary for this to be implemented properly. These recommendations will hopefully provide a framework within which judgement can safely be exercised, particularly by inexperienced staff. We accept that there are certain inherent limitations to our approach, for example a clear history of unconsciousness can be difficult to elicit in some children and the exact significance of a fall of approximately 1 metre on to a hard surface has not, to the best of our knowledge, been clearly defined. Similarly, vomiting more than twice may be a relative rather than an absolute indication for admission. Despite these limitations, we believe our recommendations are a useful guide in the management of children with head injuries in the A&E department.

A fundamental question arises regarding the need to perform skull radiographs in children who appear well but who have a “medium risk of intracranial injury”. Our justification for this is that some cases of unexpected non-accidental injury are picked up in this manner. Similarly, many head injuries are not witnessed and so their severity is difficult to estimate—clinical management can often depend on the skull radiographic findings. Although most children with skull fractures do not develop serious intracranial complications, fractures are more common among children who develop such complications.5 Finally, we would be interested to hear how this problem is approached in other centres managing children with head injuries.

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- High risk of intracranial injury—proceed to emergency CT
  - Decreased conscious level
  - Vocal neurological signs or seizures
  - CSF rhinorrhoea or otorrhoea
  - Blood from ear
  - Penetrating injuries
  - Previous surgery with shunt tubing in situ—low threshold for CT
  - Skull fracture on XRR-CT if clinically indicated

- Medium risk of intracranial injury (neurological injury)—proceed to XRR
  - Diagnosis uncertain/inadequate history
  - Clear history of unconsciousness or confusion
  - Suspicion of NAI
  - Large scalp swelling/laceration particularly over frontal or temporal sinuses
  - Depressed fracture
  - Fall > 1 metre on to hard surface (if clinically indicated)

- Low risk of intracranial injury—XRR not indicated
  - Head injury indications
  - Fully oriented
  - No amnesia
  - No neurological deficit
  - No serious scalp laceration
  - NB No child should be transferred to CT until fully resuscitated
  - CT indicated, then XRR rarely necessary
  - Patient can be admitted, XRR rarely indicated
  - Vomiting more than twice—admit
  - Return visit—review by senior clinician (SCT)

Acute pain management for children in A&E

EDITOR,—Children in acute pain are often undertreated.6 We carried out a postal survey of the management of acute pain for children in 26 A&E departments in the South and West of England.

There were 20 replies (77% response rate). Four A&E departments (20% of replies) have an existing policy for pain management in children, and three (15%) were in the process of producing one. Only two departments (10%) have clinical standards to allow audit. Seven departments (35%) routinely assess and record pain scores in children, with 50% of departments giving formal training in pain management to medical and nursing staff.

We feel that it is important to introduce clinical guidelines, standards, and training in all A&E departments to improve the quality of pain management for children.

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Childhood accidents

EDITOR,—We wish to express our concern at the validity of the conclusions in Mairta and Sweeney’s paper1 on childhood accidents. The paper examined the relation between the location where injuries were sustained (school or public place) and the severity of injuries sustained by children presenting to an A&E department.

The authors drew the conclusion that injuries sustained in schools were of a greater severity as there was a higher incidence of fractures and dislocations in the school group. However, the paper did not address the actual incidence of injuries in either environment. We are left to assume that all injuries sustained in both environments presented to the A&E department; this is clearly an unacceptable assumption as the presentation of a child at the A&E department has as much to do with a parent’s or teacher’s knowledge and experience with previous injuries. The higher incidence of fracture/dislocation in the school group could easily be explained by teachers and school first aidsers, who have a wide experience of minor trauma, excluding a number of children with minor injuries that a parent may have presented to the department.

The authors’ use of a percentage difference to compare the two groups is invalid when the true incidence of injury in the population is not known. To answer the authors’ question correctly a community based approach, not a hospital based approach, would be necessary.

We do not question the statement that schools should examine their injury prevention measures as this is sound advice; however, the data presented in this paper lend little to the debate on whether schools really are safer than public places.

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The authors reply:
Our study was hospital based and not community based.

We agree the referral pattern to the hospital for various injuries may have been influenced by other factors. But further studies (yet to be published) and our local experience lends credence to the view that over a longer period (that is, six months) these factors have only a