

LETTERS TO THE EDITOR

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.¹ Although guidelines for managing adult patients with head injuries can be applied to children, the indications for skull radiography and 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.¹ 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.^{1,3,4}

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 sensible 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.⁴ Finally, we would be interested to hear how this problem is approached in other centres managing children with head injuries.

KIERAN McHUGH
Consultant Paediatric Radiologist

FIONNA MOORE
Consultant in Accident and Emergency
Oxford Radcliffe NHS Trust, The John Radcliffe
Hospital, Oxford OX3 9DU

- 1 Royal College of Radiologists. Making the best use of a department of clinical radiology. Guidelines for doctors, 3rd ed. London: RCR, 1995.
- 2 Teasdale GM, Murray G, Anderson E, et al. Risks of acute intracranial haematoma in children and adults: implications for managing head injuries. *BMJ* 1990;300:363-7.
- 3 Clarke JA, Adams JE. The application of clinical guidelines for skull radiography in the Accident and Emergency Department: theory and practice. *Clin Radiol* 1990;41:152-5.
- 4 Leonidas JC, Ting W, Binkiewicz O, et al. Mild head trauma in children: when is a roentgenogram necessary. *Pediatrics* 1982;69:139-43.

Guidelines for imaging children with head injuries in A&E**High risk of intracranial injury→proceed to emergency CT**

Decreased conscious level
Focal neurological signs or seizures
CSF from nose or ear
Blood from ear
Penetrating injuries
Previous surgery with shunt tubing in-situ→low threshold for CT
Skull fracture on SXR-CT if clinically indicated

Medium risk of intracranial injury (neurologically intact)→proceed to SXR

Diagnosis uncertain/inadequate history
Clear history of unconsciousness or confusion
Suspicion of NAI
Large scalp swelling/laceration particularly over frontal or ethmoid sinuses
?Depressed fracture
Fall >1 metre on to hard surface (if clinically indicated)

Low risk of intracranial injury→SXR not indicated

→Head injury instructions
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 SXR rarely necessary
Patient to be admitted, SXR rarely indicated
Vomiting more than twice—admit
Return visit—review by senior clinician (PCT)

Acute pain management for children in A&E

EDITOR,—Children in acute pain are often undertreated.^{1,2} We carried out a postal survey of the management of acute pain for children in 26 A&E departments in the South and West Region.

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.

NEIL SIMPSON
FIONA FINLAY

Bath and West Community NHS Trust, Child Health
Department, Newbridge Hill, Bath BA1 3QE

- 1 Managing acute pain in children. *Drug Ther Bull* 1995;33:41-4.
- 2 Selbst SM. Analgesia in children. Why is it underused in emergency departments? *Drug Safety* 1992;7:8-13.

Childhood accidents

EDITOR,—We wish to express our concern at the validity of the conclusions in Maitra 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 aiders, 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 marker 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 are safer than public places.

SIMON D CARLEY
Royal College of Surgeons of England

POLLY TERRY
Emergency Medicine, Manchester Royal Infirmary

- 1 Maitra AK, Sweeney G. Are schools safer for children than public places? *J Accid Emerg Med* 1996;13:196-7.

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