



# The Royal College of Surgeons of England: a position paper on the acute management of patients with head injury (2005)

## THE ROYAL COLLEGE OF SURGEONS OF ENGLAND TRAUMA COMMITTEE

### ABSTRACT

Over the past 5 years, a succession of recommendations or guidelines on the acute management of patients with a head injury have been published.<sup>1–4</sup> These documents reflect developments in imaging technology, the benefits of specialist neurosurgical care and the need for rehabilitation and follow-up. To a large extent, improvements to the shortcomings of current clinical management will be dependent on the provision of adequate resources, in particular at neuroscience centres. This paper states the present stance of The Royal College of Surgeons of England in respect of key issues addressed in the above publications and reviewed below.

### KEYWORDS

Acute management, Guidelines, Head injury

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## Recognising intracranial injury

In the 1990s, the triage of head-injured patients was based on clinical assessment and observation to identify those with an evolving acute intracranial haematoma (ICH). In addition, for patients with minor or moderate head injury, when specified clinical indicators were present the skull X-ray (SXR) was used, based on the seminal study by Teasdale *et al.*,<sup>5</sup> which demonstrated an increased risk of ICH when a skull fracture was present. The disadvantage of this approach was that a negative SXR did not exclude the possibility of an ICH, notably in children. The availability of Computerised Tomography CT has made it possible to identify accurately, quantify and monitor an intracranial lesion, the recognised concerns being the risk of missing an early evolving ICH and the relatively higher radiation dose, particularly in children, though to date there is no proof of a harmful effect on the developing brain.

The 1999 report of the Working Party on the Management of Patients with Head Injury (Galasko Report),<sup>2</sup> which reflected the recommendations of the Society of British Neurological Surgeons,<sup>1</sup> advised SXR for mild or moderate head injury and CT for patients with clinical evidence of severe head injury – coma or deteriorating Level of Consciousness (LOC) – or who had a fracture on SXR. The Scottish Intercollegiate Guidelines Network (SIGN)<sup>5</sup> in 2000 still advised SXR for alert patients with defined clinical risk factors and those with Glasgow Coma Score (GCS) 14/15, but broadened the indications for CT to

include patients with GCS of 13–14/15 which persisted for more than 4 h, and also for patients with skull fracture ‘whatever the level of consciousness’. SXR was advised if CT was not being done, which seemed to imply that SXR may be an alternative to CT in certain situations.

In 2003, the National Institute for Clinical Excellence (NICE)<sup>4</sup> published guidelines based on available evidence that gave the primary imaging role to head CT and restricted the use of SXR to infants at risk of intentional injury and, in conjunction with high quality observation, to situations where CT was not available, such as in remote areas. The proposed benefits from up-grading the role of head CT include the early identification of a clinically significant ICH on the one hand and, on the other hand, exclusion of IC injury and avoidance of admission to hospital for those with a minor head injury. The NICE guidelines specify a tight time-scale of 1 h for obtaining a CT for acute indications; while this poses logistical difficulties, the recommendation was based on the best evidence available at the time.

## Admitting patients for observation

All the above publications define indications for admission to hospital for clinical observation of patients with minor or moderate head injury who do not meet the criteria for referral to a neuroscience centre. Only the Galasko Report<sup>2</sup> addresses the issue of whose care these patients should be

## The Royal College of Surgeons of England Recommended Standards of Care for Patients with Severe Head Injury

As adapted from *Better Care for the Severely Injured*.<sup>6</sup>

The clinical management of patients with a head injury must be in accordance with the recommendations of the National Institute for Clinical Excellence in *Head Injury: Triage, assessment, investigation and early management of head injury in infants, children and adults*<sup>4</sup>

There must be pre-hospital and hospital spine protection

There must be a 24-h capability to secure an airway and provide mechanical ventilation in every receiving hospital

All receiving hospitals must have direct access to 24-h CT scanning with on-call radiologists

An effective image transfer facility must be available between the receiving hospital and the local neuroscience unit

Patients who do not meet the criteria for transfer to a neuroscience unit may be admitted locally for head injury observations by appropriately trained staff; arrangements for such admissions must be agreed by the local hospital and the neuroscience centre

Patients needing ventilation and/or intracranial pressure monitoring should be transferred to a neurosurgical intensive care unit or an intensive care unit with neurosurgical and neuroanaesthetic support

The hazards of inter-hospital transfer of the seriously head-injured or multiply injured patient demand the direct involvement of consultant clinicians

Patients with a severe head injury or focal signs should be transferred to the care of a neuroscience unit regardless of whether they need surgical intervention

The system of care should achieve surgical evacuation of a clinically significant extradural haematoma within 4 h of the onset of symptoms

Neuroscience units should be part of a major acute hospital so allowing joint clinical management with the other acute disciplines involved in trauma care

Specialist rehabilitation services should be integrated with acute trauma services and should be under the clinical leadership of a consultant in rehabilitation and medicine.

admitted under. Traditionally, adult patients are admitted under the care of a general surgeon, an orthopaedic surgeon or to an observation ward in the Accident and Emergency (A&E) department. The Galasko Report highlighted deficiencies in this practice and recommended that: (i) all patients requiring observation should be admitted to an A&E ward for up to 48 h; and (ii) A&E and the local neurosurgical service should establish arrangements for appropriate referral of patients not fit for discharge after this period. At present, this has not been achieved and patients continue to be observed in clinical areas by staff who are not adequately trained for this role.

### Rehabilitation

There is general agreement in each of the three publications on the importance of follow-up and the indications for rehabilitation. All patients who have sustained a head injury,

including those assessed as having a minor head injury, may experience long-term disability following discharge from hospital. Symptoms such as headache, dizziness, memory deficits, slowness of thought, poor concentration, communication problems, inability to work, poor performance at school and problems with self-care have been described. These patients are characterised as having post-concussional syndrome.<sup>4</sup> There are no reliable criteria for safely excluding a patient from follow-up.<sup>4</sup> All head-injured patients, therefore, should be followed up even though the injury may seem to have been mild. Follow-up should be mandatory for those patients with more severe head injury, for example those who have had head CT or required admission to hospital for more than 48 h, or who have residual symptoms or signs.

The aim of follow-up is to identify patients who require support to optimise their recovery. Early recognition of potential or actual disability is important, and ideally should

occur prior to discharge. The level of support required will depend on the degree of disability; for the severely injured, early referral to a formal rehabilitation service is essential.

### The College's position

The Royal College of Surgeons of England endorses the NICE guidelines for emergency imaging and for rehabilitation. The College recognises that there are logistical and resource difficulties in implementing the guidelines, but recommends that they be complied with as far as possible in order that they can be evaluated adequately. The College also notes that the deficiencies in managing patients admitted for observation that were identified in the Galasko Report have not been remedied, and recommends that neurosurgical resources should be expanded to allow greater neurosurgical involvement in the care of these patients.

### References

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