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EMERGENCY TIPS

J.S. Surpure

Triaging Head Trauma

Closed head injury is one of the most common reasons for hospital admission. The workup of these patients remains controversial. Recent reports have questioned the reliability of plain skull X-rays? Most clinicians advocate CT scanning of head as the examination of choice in patients with minimal head injuries (MHI). Despite the fact that CT scanning allows the diagnosis of intracerebral injury to be

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made or excluded with certainty, most clinicians continue to advocate mandatory hospital admission for neurologic observation for almost all patients. How reliable is this observation either in hospital or at home? Can one safely discharge these patients from emergency department after normal CT and neurologic examination? Livingston *et al.*(1) prospectively examined the safety of discharging patients after MHI. For this study MHI was defined as transient loss of consciousness (LOC) witnessed by reliable observers or significant post traumatic amnesia with a Glasgow Coma Scale (GCS) of 14 or 15 and a normal neurologic examination. A total of 111 patients were evaluated following MHS. Fifteen patients (14%) were found to have an injury on CT scan and were admitted. An additional six patients were admitted following a normal CT scan due to persistent lethargy and other reasons. Ninety-six patients had normal CT scans. Ninety patients with a normal cranial CT scan and normal neurologic examination were subsequently discharged from the emergency department. The mechanism of injury was assault, MVA and falls. Associated injuries were present in 78 patients and consisted of scalp and facial lacerations, contusions, facial fractures, extremity fractures, pulmonary contusions, and microhematuria. Most (63%) patients were successfully contacted by telephone; none had developed any neurologic symptoms. Other patients who could not be followed gave fictitious phone numbers. All patients complained of minor headaches. Two patients returned before telephone follow-up with complaints of blurred vision. Both patients were re-evaluated with CT scans and physical examination which were negative. The authors conclude that a normal CT scan and neurologic examination can accurately

triage the patients who can be safely discharged from the emergency departments. However, the discussion following the article suggests that history and physical examination alone are unreliable in predicting patients with intracranial pathology. Sensitivity and specificity of skull X-rays are definitely insufficient except for specific indications. CT scanning is reliable, however the timing of the CT examination is important. Although performing CT scanning in all patients with LOC may appear excessive and expensive, it may be justified rather than admission and use of other hospital resources. In children, the parental anxiety is usually useless and unreliable. The patient usually deteriorates suddenly rather than slowly. Can a combination CT exam and thorough physical examination be reliable enough? We need more data to decide the best, safest and cost effective approach. Until then, each case should be approached on an individual basis.

Foreign Body Extraction

Blunt objects are relatively common esophageal foreign bodies in children. In the past, these have been removed by rigid esophagoscopy. Recent reports have advocated alternative methods of removal such as use of a Foley catheter under fluoroscopy and pushing the foreign body into the stomach with a bougie. How safe are these techniques? Myer(2) discusses the pros and cons of this issue. When absolute criteria are enforced in patient selection for the removal of foreign bodies by the Foley Catheter technique, the procedure may be safe. However, indications tend to be extended and expanded. Specifically, if one attempts to remove foreign bodies which are not blunt or which have been present longer (24-48 hours), this can predispose to higher rate of failure or complications or

both. A case report with fatality has been described previously. During attempted removal of a quarter from the esophagus, the coin flipped into the larynx and became impacted causing complete airway obstruction. Resuscitation measures were unsuccessful and the child expired. Availability of emergency equipment to deal with acute airway problem is essential.

The rigid esophagoscopy under general anesthesia may be preferable due to its safety, compliance and acceptance. Foley catheter removal procedure for some children has been described as sweating, screaming and hysterical. The procedure is rarely of an emergent nature and transfer to a capable facility should be mandatory. In a recent survey, the reported complications of the Foley's catheter foreign body removal procedure include: airway obstruction, transient apnea, coin displacement to mainstem bronchus, esophageal tear and perforation, bleeding, aspiration pneumonia, missed second coin and inability to remove coin. The author emphasizes that endoscopic removal is safer and effective in the hands of skilled endoscopists. The technique is both humane and controlled and the safest specifically for the removal of complicated foreign bodies.

Ear Temperature

One of the newer aspects of technology to have an impact on the clinical practise of pediatrics is tympanic thermometry. The "first generation" tympanic membrane thermometer use thermistor probes which actually come in direct contact with the eardrum. The "second generation" tympanic membrane thermometers utilize infrared sensor probes which are inserted into the ear canal and oriented towards, but not in direct contact with the tympanic

membrane. However, the accuracy of these "second generation" tympanic thermometers in clinical outpatient settings has been challenged. What is the accuracy and efficacy of the infrared tympanic membrane thermometers? Chamberlain, *et al.*(3) addressed this issue in a prospective study where the variables of age, cooperation, quantity of cerumen, and the presence or absence of otitis media were controlled. This electronically obtained tympanic temperature was compared to oral or rectal glass temperatures, depending on the developmental age of the child. The authors found a good correlation of tympanic with oral and rectal glass thermometry except in infants less than three months of age. The sensitivity and specificity for detecting fever of 38.0°C were 80 and 93%, respectively. The sensitivity and specificity for detecting fever of 38.5°C were 80 and 90%, respectively.

Subluxation in Down Syndrome

The atlanto-axial (AA) joints are relatively shallow and unstable. The American Academy of Pediatrics has made recommendations for evaluation and restriction of activity for children with Down Syndrome. Considerable controversy has surrounded these recommendations. A separate entity of atlanto-occipital (AO) subluxation in association with Down syndrome has also been reported. What is the optimal method and timing for evaluation? What are the clinical implications? Stein *et al.*(4) discuss their experience with AO joints. The motion at AO joint is normally limited by tight ligamentous structures to approximately 13 degrees of flexion-extension and 8 degrees to lateral bending. There is almost no rotation. The stability of the AO joints is provided by several liga-

ments, the most important being intra-spinal ligaments. Quantification of AO subluxation is more difficult.

The authors emphasize that atlanto-occipital instability should be considered along with the more typical atlanto-axial instability. However, the clinical implications of this are not yet known.

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NOTES AND NEWS

CME PROGRAMME ON ADOLESCENT MEDICINE

The 10th Annual CME Programme on "Adolescent Medicine", is being organized by the Lake Side Education Trust, 33/4 Meaneer Avenue Road, Bangalore 560 042 as per details below.

Date — Sunday 26th July 1992

Venue — Sir C.V. Raman Institute
Conference Hall,
Sadashivnagar, Bangalore 560 080.

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