

Skull radiography for head trauma

The value of [skull radiography](#) in identifying [intracranial injury](#) has not yet been satisfactorily defined. A multidisciplinary panel of medical experts was assembled to review the issue of skull radiography for [head trauma](#). The panel identified two main groups of patients—those at high risk of intracranial injury and those at low risk of such injury—and developed a management strategy for imaging in the two groups. The high-risk group consists primarily of patients with severe open or closed-head injuries who have a constellation of findings that are usually clinically obvious. These patients are candidates for emergency CT scanning, neurosurgical consultation, or both. The low-risk group includes patients who are asymptomatic or who have one or more of the following: [headache](#), [dizziness](#), [scalp hematoma](#), [laceration](#), [contusion](#), or [abrasion](#). Radiographic imaging is not recommended for the low-risk group and should be omitted. An intermediate moderate-risk group is less well defined, and skull radiography in this group may sometimes be appropriate. A prospective study of 7035 patients with head trauma at 31 hospital emergency rooms was conducted to validate the management strategy. No intracranial injuries were discovered in any of the low-risk patients. Therefore, no intracranial injury would have been missed by excluding skull radiography for low-risk patients, according to the protocol. We conclude that use of the management strategy is safe and that it would result in a large decrease in the use of skull radiography, with concomitant reductions in unnecessary exposure to radiation and savings of millions of dollars annually ¹⁾.

A [skull fracture](#) increases the probability of a surgical intracranial injury (ICI) (in a comatose patient it is a 20-fold increase, in a conscious patient it is a 400-fold increase ^{2) 3)}. However, significant ICI can occur with a normal [Skull radiography](#) (SR) (SR was normal in 75% of minor head injury patients found to have intracranial lesions on CT, attesting to the insensitivity of SRs ⁴⁾). SRs affect management of only 0.4–2% of patients in most reports ⁵⁾

SR may be helpful in the following:

1. in patients with moderate risk for intracranial injury by detecting an unsuspected depressed skull fracture (however, most of these patients will get a CT scan, which obviates the need for SR)
2. if a CT scan cannot be obtained, a SR may identify significant findings such as pineal shift, pneumocephalus, air-fluid levels in the air sinuses, skull fracture (depressed or linear)... (however, sensitivity for detecting ICI is very low)
3. with penetrating injuries: helps in visualization of some metallic objects

¹⁾

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