

No need for routine repeated CT scans after mild head trauma, reports neurosurgery

January 3 2013

When initial computed tomography (CT) scans show bleeding within the brain after mild head injury, decisions about repeated CT scans should be based on the patient's neurological condition, according to a report in the January issue of [Neurosurgery](#), official journal of the [Congress of Neurological Surgeons](#).

The study questions the need for routinely obtaining repeated CT scans in [patients](#) with mild head trauma. "The available evidence indicates that it is unnecessary to schedule a repeat [CT scan](#) after mild head injury when patients are unchanged or improving neurologically," according to the study by Dr. Saleh Almenawer and colleagues of McMaster University, Hamilton, Ont., Canada.

Are Repeated Scans Necessary after Mild Head Trauma?

In a review of their hospital's trauma database, the researchers identified 445 [adult patients](#) with mild head injury who had evidence of intracranial [hemorrhage](#) (ICH)—bleeding within the brain—on an initial CT scan. In many trauma centers, it's standard practice to schedule a second CT scan within 24 hours after ICH is detected, to make sure that the bleeding has not progressed.

To evaluate the need for routine repeated scans, Dr. Almenawer and colleagues looked at how many patients needed surgery or other

additional treatments, and whether the change in treatment was triggered by changes in the patients' [neurological condition](#) or based on the routine CT scan alone. (For patients whose neurological condition worsened, CT was performed immediately.)

Overall, 5.6 percent of the patients required a change in treatment after the second CT scan. Most of these patients underwent surgery (craniectomy) to relieve pressure on the brain. Nearly all patients who underwent further treatment developed neurological changes leading to immediate CT scanning.

Just two patients had a change in treatment based solely on routine repeated CT scans. Both of these patients received a drug (mannitol) to reduce intracranial pressure, rather than surgery

Decisions on CT Scans Can Be Based on Neurological Status

Dr. Almenawer and colleagues extended the same method to patients reported in 15 previous studies of CT scanning after mild head injury. Including the 445 new patients, the analysis included a total of 2,693 patients. Overall, 2.7 percent of patients had a change in management based on [neurological changes](#). In contrast, just 0.6 percent had treatment changes based on CT scans only.

Bleeding within the brain is a potentially life-threatening condition, prompting routine repeated CT scans after even mild head injury. The researchers write, "Although CT scanners are very useful tools, in an era of diminishing resources and a need to justify medical costs, this practice needs to be evaluated." Each scan also exposes the patient to radiation, contributing to increased cancer risk.

The new study questions the need for routine repeated CT scans, as long as the patient's neurological condition is improving or stable. "In the absence of supporting data, we question the value of routine follow-up imaging given the associated accumulative increase in cost and risks," Dr. Almenawer and coauthors conclude.

Neurological examination is the "simple yet important" predictive factor leading to changes in treatment and guiding the need for repeat CT scanning after mild head injury, the researchers add. They emphasize that their findings don't necessarily apply to patients with more severe head injury.

Provided by Wolters Kluwer Health

Citation: No need for routine repeated CT scans after mild head trauma, reports neurosurgery (2013, January 3) retrieved 26 April 2024 from <https://medicalxpress.com/news/2013-01-routine-ct-scans-mild-trauma.html>

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