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COMPUTERIZED TOMOGRAPHY HEAD IN PEDIATRIC EMERGENCIES

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Abstract: *Computerized tomography of the brain has often been used as an initial imaging modality in the assessment of children with neurological emergencies. It is readily available in most centers and it is less expensive. The disadvantages of computerized tomography are radiation exposure and a limited diagnostic value in the evaluation of certain conditions such as early stroke, demyelinating disorders, neurometabolic disorders, infection and tumors. However, skull fractures, calcification and intracranial bleed may be readily diagnosed on computerized tomography head. Computerized tomography plays a vital role in the initial evaluation of accidental and non-accidental brain injury, hydrocephalus, and intracranial space occupying lesion. Brain magnetic resonance imaging is the preferred diagnostic modality in the evaluation of neurological disorders. However, it is expensive, time consuming and poses logistic difficulties in an emergent scenario.*

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Points to Remember

- ***CT is often readily available, less time consuming and less expensive.***
- ***An emergent CT head is useful in the diagnosis of skull fractures, intracranial bleed, space occupying lesions, brain herniation and calcification.***
- ***The disadvantages of CT are radiation exposure and a limited diagnostic value in the evaluation of certain conditions such as early stroke, demyelinating disorders, neurometabolic disorders, infection and tumors.***
- ***MRI brain is preferred in patients with diffuse axonal injury, acute disseminated encephalomyelitis, posterior reversible encephalopathy syndrome and hypoxic ischemic encephalopathy.***
- ***Hypo attenuated lesions appear dark (hypodense) and lesions with high attenuation appear bright (hyperdense) on CT brain.***
- ***Children face an increased risk from CT radiation due to larger doses and increased lifetime radiation exposure. The risk of a leukemia three fold and triples the risk of brain cancer.***
- ***Though the benefits of CT outweigh the risks,it is imperative to reduce the dosage of radiation as much as possible.***
- ***Precautions to minimize radiation-related hazards are use of appropriate radio protective shields, applying ALARA principle (as low as reasonably achievable) to reduce radiation dose anduse of non-ionic contrast agents.***

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