Computed Tomography HEAD CT SCAN (Iv)

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HEAD CT SCAN

CT Scan protocols or
procedures

PREPRATION

- You should wear comfortable, loose-fitting clothing to your exam. You may need to wear a gown during the procedure.
- Metal objects, including jewelry, eyeglasses, dentures and hairpins, may affect the CT images. Leave them at home or remove them prior to your exam.
- You may also be asked to remove hearing aids and removable dental work.

PREPRATION

- CT scanning is, in general, not recommended for pregnant women unless medically necessary because of potential risk to the baby. This risk is, however, minimal with head CT scanning.
- IV contrast manufacturers indicate mothers should not breastfeed their babies for 24-48 hours after contrast material is given. However, the most recent American College of Radiology (ACR) Manual on Contrast Media reports that studies show the amount of contrast absorbed by the infant during breastfeeding is extremely low. For further information please consult the ACR Manual on Contrast Media and its references

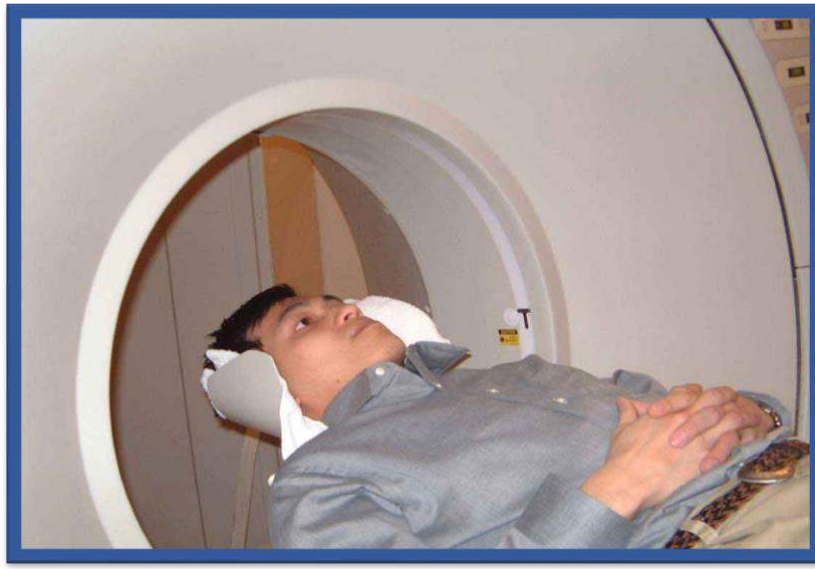
PREPRATION

- You will be asked not to eat or drink anything for a few hours beforehand, if contrast material will be used in your exam.
- You should inform your physician of all medications you are taking and if you have any allergies. If you have a known allergy to contrast material, your doctor may prescribe medications (usually a steroid) to reduce the risk of an allergic reaction. To avoid unnecessary delays, contact your doctor before the exact time of your exam.
- Also inform your doctor of any recent illnesses or other medical conditions and whether you have a history of heart disease, asthma, diabetes, kidney disease or thyroid problems. Any of these conditions may increase the risk of an adverse effect

PATIENT ORIENTATION

- Patient should be supine, head first into the gantry
- TOPOGRAM:
- Lateral.
- For all head studies, it is very important for image quality to position the patient in the center of the scan field. Use the lateral laser beam to make sure that the patient is positioned in the center. Patient lying in supine position, arms resting along the body, secure head well in the head holder, support lower legs.



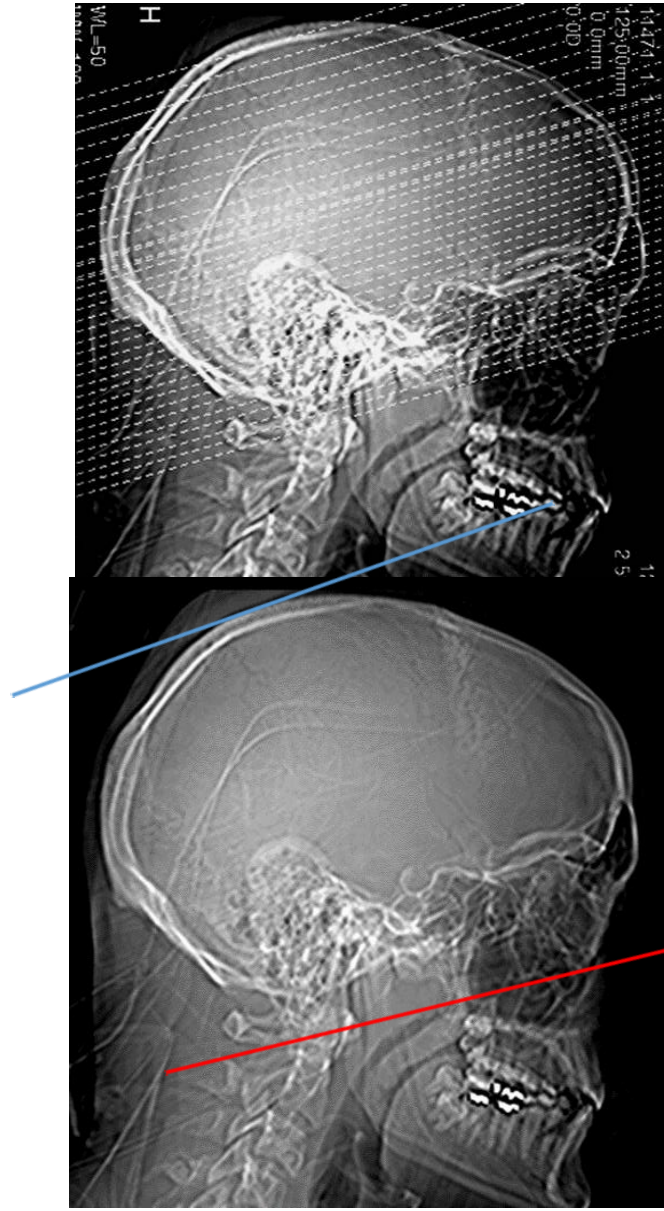


PATIENT POSITIONING:

- Center the table height such that the external auditory meatus (EAM).
- To reduce or avoid ocular lens exposure, the scan angle should be parallel to a line created by the supraorbital ridge and the inner table of the posterior margin of the foramen magnum. This may be accomplished by either tilting the patient's chin toward the chest or tilting the gantry.
- CONTRAST:
- Oral: None.
- Intravenous contrast administration should be performed as directed by the supervising radiologist using appropriate injection protocols. A typical amount would be 50 cc at 300 mg/cc strength, injected at 1- 4 cc/sec, Depending on the cause of the patient's imaging.

CT SCAN PROTOCOLS (without and with contrast)

- Scan Coverage: Just below foramen magnum through vertex. IF TRAUMA, begin below the anterior C1 arch.
- Scan Plane: Stacked axial, parallel to line from orbital roof to external auditory meatus
- Scan Slice thickness: 5-3 mm.
- Reconstruction Slice Thickness: 1 mm.
- kVp, mA, Rotation Time: 120, 250 – 400, 1s.
- Non-contrast study; soft tissue algorithm; then repeat with:
- Contrast: 50cc Omnipaque 300 IV, Soft tissue algorithm.
- Soft Tissue Window: WC : 40, WW : 80
- Contrast injection protocol: -
- 1- Non-contrast performed first.
- 2- Delayed phase post-contrast acquisition.
- - 50 cc hand injection or 1 cc/s via injector.
- - Delayed acquisition: >5 minutes post-contrast injection.



INDICATIONS

- 1. Acute head trauma.
- 2. Suspected acute intracranial hemorrhage.
- 3. Vascular occlusive disease or vasculitis (including use of CT angiography and/or venography).
- 4. Aneurysm evaluation.
- 5. Detection or evaluation of calcification.
- 6. Immediate postoperative evaluation following surgical treatment of tumor, intracranial hemorrhage, or hemorrhagic lesions.
- 7. Suspected shunt malfunctions, or shunt revisions.
- 8. Mental status change.
- 9. Increased intracranial pressure.
- 10. Headache.
- 11. Suspected intracranial infection.
- 12. Suspected hydrocephalus.
- 13. Congenital lesions.
- 14. Suspected mass or tumor.
- 15. Seizures.
- 16. When magnetic resonance imaging (MRI) imaging is unavailable or contraindicated, or if the supervising physician deems CT to be appropriate.

CONTRAINDCATION C T OF HEAD CT SCAN

- Uncontrolled movement during the scan.
- An obese patient may not be able to fit in the machine.
- For those who have partial renal failure, injection of contrast may not be possible because of the risk of inducing complete renal failure.

CT Advantages And Disadvantages

- • Easy availabilty
- • Fast
- • Better for bone and acute blood,lesions of skull base and calvarium • Calcification
- • Less limited by patient factors

- • high radiation
- • poor visualisation of posterior fossa lesions

QUESTIONS

- DEFINE HEAD CT ACAN?
- WHAT IS INDICATION OF HEAD CT?
- WHAT IS THE CONTRAINDICATION OF THE HEAD CT ?



