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Q6)-----?

INTRACRANIAL HAEMORRHAGE ON CT-SCAN

DEFINITION: Extravasation of blood within cranium due to rupture of blood vessels within cranium is called intracranial haemorrhage.

PROCEDURE OF CHOICE: Pre-contrast CT-scan is the procedure of choice for intracranial haemorrhage. Iodinated contrast may be injected to increase the evaluation of CT-scan for ICH.

=) CT-angiography "spot sign" may be used to tell us about cerebral Haematomal.

APPEARANCE ON CT-SCAN: CT-scan demonstrates acute intracranial haemorrhages as "Hyperdense signal intensity"

=) Multifocal haemorrhages at frontal, temporal, occipital poles suggest/indicates traumatic etiology.

=) Acute haemorrhage on non-contrast CT appears as "Area of high density."

① **Intraparenchymal-haemorrhage:** On CT, appears as typically bounded hyperdense structure.

② **Intraventricular-haemorrhage:** On CT, "conforms to ventricular shape."

③ **Subarachonid-haemorrhage:** Traces along the sulci & fissures.

④ **Subdural-Haemorrhage:** "crescent shape" on CT-scan.

⑤ **Epidural-Haemorrhage:** "Lentiform" shape on CT-scan.

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Q1)---?

PHASES OF TISSUE ENHANCEMENT

INTRODUCTION: 3-general phases are
(i) Bolus phase (Arterial)
(ii) Non-equilibrium (Venous)
(iii) Equilibrium (Delayed phase)

(i) BOLUS-PHASE/ARTERIAL: => Here arterial structures are filled with contrast medium so bright structures displayed on image hence called arterial phase.
=) Immediately follows IV-bolus-injection.
=) The phase is characterized by AVID or Housefield units (HU) b/w aorta and inferior vena cava.
=) CT-angiography images, taken when contrast is in bolus phase.

(ii) NON-EQUILIBRIUM/VENOUS: => contrast agents is still much brighter in arteries but venous structures are also opacified hence called venous-phase.
=) Follows bolus phase and is characterized by difference of 10-30 HU AVID.
=) Venous phase begins 1 min after bolus phase and lasts for 1 min.
=) most routinely body images are obtained while contrast is in venous/non-equilibrium phase.

(iii) EQUILIBRIUM/DELAYED-Phase: =) Delayed phase begins as soon as 3 mint after bolus injection. => characterized by a difference of 10 housefield unit b/w aorta & inferior vena cava.
=) Worst-phase for body scans especially Liver.
=) Intravascular structures & interstitial concentrations of contrast, equilibrate and decline at same rate.

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Q2) -------?

QUALITIES OF IDEAL IV ACESS SITE

INTRODUCTION: Qualities of IV access side which would make the side ideal for contrast media are:

(i)
LOCATION: The site is well located.

(ii)
ESTABLISHMENT: was established recently because older IV access sites are more likely to extravasate.

(iii)
HUB | PORT: contains a connecting hub/port that is not accessed - i-e intermittent IV line, or if accessed, has a saline (0.9% NaCl or D5W).

(iv)
NO inflammatory signs: side does not show evidence of redness, blanching or swelling in the skin surrounding the puncture.

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Q4) --------?

EFFECT, MOVING PATIENT'S CHIN UP/DOWN

SLICE ANGLE: Anatomy displayed in cross sational slices will be slightly different, depending upon angulation (angle) used.

=> Slice angle, determined by position of patients head (moving the chin up or down) and the angle of gantry.

Orbitomeatal Line: Previously it was once common to programm cross-sectional slices of brain to be parallel to orbitomeatal line but:

GLABELLOMEATAL LINE: Recent practices favours using supra-orbital meatal line/glabellomeatal line to reduce radiation exposure to the lens of eye.

AXIAL TECHNIQUES: Axial techniques are often used for routine brain imaging.

=> Recent practices favours program in which slices of brain parallel to supraorbital meatal line rather than orbital meatal line —> reducing radiation exposure to eye.

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05) ----- ?

PATIENT'S POSITION IN CORONAL PLANE

INTRODUCTION: As coronal plane provide additional information as compare to axial plane. so if we want to get data in coronal Plane then position of the patient is described by following

2 - methods:

(i) Prone-Position: Place the patient prone on scanning table and with chin forward.

ii) SUPING POSITION: another method is to place the patient supine and droping his head back as far as possible. Specialized head holder is required to get that position of patient.

NOTE In either method (Position), the slice plane will be horizontal coronal. If the patient cannot extend the neck fully, the gantry may be angled to obtain more coronal plane.

IMAGE => Image obtained in either the prone / supine coronal position is essentially same.

=> Images are flipped Inferior - superior.

IMAGE-FACTORS: Image preference depends on:

1. Patient comfort
2. Radiologist Preference
3. Gravity effect on anatomical structures.

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Q3)------?

IDIOSYNCRATIC, CHEMOTAXIC REACTION SYMPTOM

IDIOSYNCRATIC REACTION: is defined as drug reaction irresponsive of dose of the drug, occuring in certain population, involving the immune response is known as idiosyncratic reaction. It differs from allergic reaction.

NOTE: Also known as Type-B reaction.

SYMPTOMS: => Rigors => Abdominal pain => Hypotension => Urticaria (generalized body rash) => Oedema (esp. face) => metallic taste in mouth => nausea => cough & sneezing => skin necrotizing lesions => Delayed onset reaction (headache, itching, rashes) => Flushing => substantial respiratory distress, => convulsion => cardiopulmonary arrest

CHEMOTOXIC REACTION SYMPTOMS:

=> Vasovagal reactions
=> warmness
=> flushing
=> nausea
=> Emesis those are usually transient and self limited.

DELAYED REACTION: Delayed reactions belong to Idiosyncratic group reaction.