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PAPER COMPUTED TOMOGRAPHY\

SEMESTER SIX SEMESTER

EXAM MID TERM

Q! : Describe three general phase of tissue enhancement

* Ans : Three General phases of tissue enhancement

These three general phases of tissue enhancement are easily explain in the Computed tomography the bolus phase, equilibrium phase, and non-equilibrium phase. These phases different from one another. The contrast media was came and that time started the injection. These phases are directly matched to the arteriovenous iodine same less (AVID).

* The Bolus Phase

The bolus phase is the phase which depend upon intravenous bolus injection or contrast in bolus phase the attenuation shameless thirty house field units even maximum between at this the aorta and the inferior vena cava. The Bolus phase is easily show in the image the bolus phase is also known as arterial phase The bolus phase is also use in angiography because in bolus phase easily shows the arteries that’s why also use in arterials structures. The arterials phase is also known as hepatic arterials phase because the hepatic arteries easily shows and give us a lot of information in about arteries.

* Non-Equilibrium Phase

The non-equilibrium phase is the second phase of the tissue enhancement and also known as venous phase the non-equilibrium phase depend upon the arterial phase and easily we think it it is same less maximum then the ten to thirty house fields units. The non-equilibrium phases the hepatic portal vein as simple we say that that phase is started after a minute of injection of bolus .in some patient body structures with the help of contrast so we easily detect any changes while in came in patient body with the help of non-equilibrium phase.

* Equilibrium phase

The equilibrium phase is the third phase of tissue enhancement the contrast media intravenous injection is equilibrium phase or late phase. equilibrium phases started in before two minutes after the first phase its started from the venous phase the contrast is lifted to the arteries .The equilibrium phase goes the contrast in arteries and enters the contrast in organs in third phase the different between aorta and inferior vena cava is less then 10 house field units .The contrast when comes in organ the organ become visualized properly and give us maximum knowledge about anatomy. In this phase shows the tumours and livers may become improve in this phase the veins may become dilated due to contrast.

Q2 list the qualities of Iv access site would make it ideal for administering of contrast media ?

Ans The intravenous contrast have many qualities as compare to other contrast which is use in radiology department many types of contrast present but all contrast having different from one another and also their different performing’s method such as oral contrast, intra thecally etc. etc. but we talk about intra venous contrast the intravenous contrast easily available ,lest expensive the intravenous contrast is stable, intravenous contrast is least expensive, intravenous contrast mostly use in radiology the intra venous contrast use in many diagnostic modalities the intravenous contrast easily accessible the others contrast are specifics but intravenous not specific o like others the intravenous contrast is depend upon arteries that’s why its use maximum because arteries are present in everywhere in the body if u noticed many abnormalities may came in arteries and veins the intravenous contrast use in also vein and organs supply is arteries the use of intravenous contrast may arteries give us more information the intravenous contrast easily secreted in kidneys. The intra venous contrast is safer others. The intravenous contrast use in maximum abnormalities and maximum organs the intravenous contrast is also preferred the doctors. The intravenous contrast use in every modalities of radiology but other not use in many or all modalities intravenous is non-specific means its use in all modalities and many abnormalities and disease’s contrast like others contrast are specific their modalities and also their abnormalities less times taken intravenous in health workers easily perform it intravenous but others contrast are not perform easily intravenous contrast may give us more information and also effect it their image and contrast resolution may become it batter and easily accessible many abnormalities’ visualised.

, Q no 3: What are symptom of an Idiosyncratic Reactions to contras media? What are symptom of Chemo toxic reaction? In to which category do delayed reaction belong?

Ans: : The idiosyncratic reaction following symptoms are given below …

* Idiosyncratic Reactions

The Idiosyncratic Reactions is a minor reaction which behave like three steps acute moderate and chronic . The acute reaction is a small reaction and a limited time. The minor reaction is do not need any type of treatment because its not needed just monitoring a patient activities .The moderate reaction is twenty to thirty minutes time after it recover its self but monitoring is important their symptom’s are that hives, itching ,,cough .dizziness ,stiffness and small changes will me noticed in area of eyes and face .The moderate reaction is not recover like acute or minor reaction it may take some time or life threatening the moderate reaction symptoms and treatment may included the respiratory difficulties ,wheezing, mild laryngeal edema ,and hypertension and the treatment include is diphenhydramine .The pulse rate may affected due to hypertension but the vasovagal reaction is not allergically it’s a naturally but in started its noticed like a allergic but if a patient use a b antagonist the patients while recover own self. The life threatening reaction occurs but it’s rare not common every health worker must be known about severe reaction and also their types and step the chronic reaction the cardio vascular collapse ,anxiety, etc.

* The Risk Factors Of Idiosyncratic Reactions

The many idiosyncratic adverse are minor and nan dangerous just require to monitoring the patient health and also taking history because history may help u .When any reaction will occurred .the record of these reaction says that mainly reaction is high osmolar contrast media but the other hand the record of low osmolar contrast media is better then the high 0osmolar contrast media the LOCm having small and not coon reaction like HOCM .Type both are not too dangerous up to date not deaths are occurred but the low osmolar contrast media is idiosyncratic reaction .The immune system of human not properly wok in some times

* Delayed Reactions

The delayed reaction is defined as a reaction will be occurred during in a hour and a week it is a intravenous contrast the delayed reaction is also known as low reaction that reaction not properly recorded the symptom’s, examination include headache, skin rash, itching, nausea, dizziness, urticarial, fever, arm pain, .The most commonly in delayed reaction is skin problem in computed tomography reddens the delayed reaction multiple joints pain stiffness and difficulty in walking the delayed reaction low osmolar contrast and high osmolar contrast if a patient done it or fill it his own history form then a patient will survive he is oneself in delayed reaction because in history clearly write . a patient is allergic then a health workers also mentally stable and prepare including patient. the delayed reaction mainly occurred commonly in patient autoimmune response of contrast media .the delayed reaction contrast is use in iodinated contrast is not too common but in some patient well suffering in during rest time they patient must be prepare and take some medicine for doctors advice it will be covered otherwise it convert it chronic

* Chemo toxic Reactions

The chemotoxic reactions is look like a idiosyncratic reaction every parts of chemotoxic reactions

 Is difficult to understand properly .The chemotoxic reactions is recline in dose agents the vasovagal reaction is also a part of it the organ may badly effected in that reaction .the chemotoxic reactions commonly kidney may effected the calcium bonding a result is vasodilation .The most of cases record the kidney may dysfunction the symptoms of chemo toxic reactions are know one have any idea what are the symptoms of the that reaction their symptoms are unknown but the contrast result in nephropathy and toxicity kidney depending on creatinine give a maximum numbers of contrast enhancement . chemotoxic reactions is a severe reaction when a patient wash own body to a kidneys if a small mistake taken by a technologist that’s wh6y many doctors preferred the creatinine and low osmolar contrast the reaction chances must be low percentage

Q no 4: When performing a CT study of brain what effect will moving patient chin up down have?

Ans: when performing a normal CT scan of a brain. When a patient started a movement definitely artefact may come it before examination a technologist guided the patient during scan u don’t think about movement when a technologist performing a patient position .The patient chin hold it own hand and slightly up and patient head slightly goes to back side because we need a specific anatomy and and also x ray tube on focused if we don’t up a patient chin then we missed the cp angle in the brain the cp angle present in brain the pons and cerebral between it breast and also we doing the gentry angulation some time we also take the brain in neck protocol while a patient done it a movement in during a scan then motion artefact may be come on image and also compromise the resolution and contrast resolution also came in ghosting affect the during a position patient hand hold their small smooth spongy fell comfortable the patient chip chin up not expose their nearly organ in the brain because the thyroid is more sensitive and also eyes etc. organ during position its important patient chin must be slightly up to become a good image and nor expose the related organ. A patient must reminder breathing point on his mint don’t take breathing largely inhale one exhale because if he do it then anatomy not came on image too good these effects while occurred when chin is not up and also a patient not guided properly

Q no 5: Describe how a patient can be position so that data can be acquired in head in the coronal plane?

Ans The basic position of brain in computed tomography is supine laying the patient but coronel plane give us a lot of knowledge about a patient anatomy .the coronal plane is also known as frontal plane the coronal plane and axial planning both of planning majority use in patient in diagnosing both are bitter then from one another but in the coronal plane a patient laying in prone and chin is forward the majority coronal plane also preferred the doctors in complicated cases of sinuses .while a patient chin hold it the company made it head holder the head scan take it just minimum time .If a patient not corporate then gantry tiled little a patient may comfortable during scan its important thing the axial and coronal position and planning both are different from one another while doing a coronal position a technologist must remember that point majority or commonly streaking artefact rate come in during examination its duty to restricted the streaking artefact do a proper position and also a big challenged of a superior fossae each and every angle must be diagnostic the coronal examination is fully depend upon the the patient position and also his corporation in during scan a radiographer must noticed some points some times some times having greater or hyper dense and hypo dense it well bad effect to on image and also a film it’s a big and not solve a post processing problems in image commonly thin slices taken in coronal plaining if density problem not solve then kvp must be managed proper managed the window width and window level and also house filed unit of tissues . hemorrge tumours arteries etc. the coronal planning is also use in angiography and many other modalities axial and coronal are both come in many and commonly use in every diagnostic imaging and examination the coronal planning have most and impressive knowledge given it .The angiography brain and cervical done by modern multislice computed tomography the motion artefact which cause commonly breathing in during Angio dimensional minimaxing the brain study complete in axial plaining the brain parts depend upon the how the radiographer maintained the white and grey matter sulci and gyrus ventricles Dural sub Dural’s layers and and also a haemorrhage abnormality cerebral spinal fluid its important these are all important point to diffentiate and also be careful to keep and made it the coronal examination .

Every point must me recognize the radiographer must be maintain and carefully and do a proper results of a patient examination.

.Q 6 describe the appearance of intracranial haemorrhage on the CT image?

Ans The recently done intracranial is haemorrhage Hyper dense while with the passage of time it may convert there the hypo dense because the red blood cells can mixed with the cerebral spinal fluids and then become hypo dense and with passage of time it become isodense three to ten days is hyper dense and after it decrease the density of hematoma and after theses days to six month it become isodense the technologist must recognize the technologist to differentiate the abnormality and haemorrhage .without contrast media scan is very important for a patient if a patient having any history af fall down motorcycle accident etc. because if a patient effect the brain and occurred the intra bleeding while we do or pass the contrast media to a patient .The will must be die because the human brain is very sensitive .If any abnormality occurred in a patient brain then CT scan can pick the recent abnormality computed tomography can pick smallest haemorrhage or any abnormality detect it there are different haemorrhage are have subdural haemorrhage intrapheranchymal haemorrhage and subarachnoid blood. Computed tomography is easily point of the any abnormal anatomy size shape and also noticed their structure .the magnetic resonance imaging does not pick the recent abnormal changes computed tomography is just only one modality of radiology department which detect the early abnormality and haemorrhage . while occurred then doctors preferred to computed tomography because its least time taken and do better results as compare to magnetic resonance imaging . The magnetic imaging is expensive and not available everywhere the computed tomography is just one modality to diagnose the early haemorrhage and and also do first and clear results. The other blood test is clear when intra cranial haemorrhage detect in computed tomography intra cranial haemorrhage may sow the changes of anatomy and u easily differentiate the normal and abnormal anatomy.