Rad Tech 4912 MRI Registry Review

**Questions:**

The decreased myelination found in brains of children under one year old results in a lack of image contrast. Consequently, in comparison to scanning adults, to achieve T2 weighted images during pediatric brain imaging often requires:

a: Longer TI
b: Higher flip angle
c: Longer TR
d: Longer TE
Questions:
The decreased myelination found in brains of children under one year old results in a lack of image contrast. Consequently, in comparison to scanning adults, to achieve T2 weighted images during pediatric brain imaging often requires:
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Questions:
With history of seizures, the patient can be imaged using cardiac gating:
a: To avoid talking to the patient throughout the study.  
b: To make vessels appear black.  
c: To monitor the patient for potential seizures.  
d: To minimize pulsatile flow motion artifact in the temporal lobes.
Questions:
When patients arrive at the imaging center with a cranial scar, the technologist can
a: Ignore the scar.
b: Cover the head with a sterile drape.
c: Screen the patients, their doctor, and/or family to find out what type of surgery they have had.
d: Immediately perform the MRI scan to find out what surgery they underwent.
Questions:
When scanning patients to rule out brain tumors, the weighted images acquired to evaluate the extent of the lesion, after injection of gadolinium, are:

a: Proton density  
b: Gradient echo  
c: T2  
d: T1

Questions:
When imaging a patient with decreased consciousness an area of high signal intensity is noted on both the T1 and T2 weighted images. This type of lesion is likely to be:

a: A hemorrhage  
b: A neurofibroma  
c: An abscess  
d: A metastatic lesion

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Questions:

When imaging a patient with suspected pituitary microadenoma, contrast is injected and imaging is performed:

a: With delayed imaging because lesions enhance slowly and pituitary gland does not enhance.
b: With no specific timing considerations.
c: Rapidly because lesions appear as low signal intensity compared to enhanced pituitary gland.
d: Rapidly because lesions enhance early.
Questions:

When the brain of a child under one year old is imaged with MRI, the best visualization of gray and white matter differences (whereby white matter is higher signal intensity than gray matter) is from images obtained by:

a: Spoiled gradient echo  
b: Inversion recovery  
c: T2 weighted spin echo  
d: T1 weighted spin echo
Questions:
The ACR guidelines for brain imaging suggest that the minimum imaging procedure should include:
a: T2 weighted coronal and axial images.
b: Gradient echo imaging.
c: T1 weighted pre-and post-contrast enhancement axial images.
d: T1 weighted sagittal and spin density and T2 weighted axial images.
Questions:

In patients that have undergone surgery for a herniated disk in the lumbar spine, contrast enhancement can be used to distinguish recurrent disk from post-operative scar because:

a: Disk enhances more slowly than post-operative scar.

b: Neither scar nor disk enhance

c: Post-operative scar enhances and recurrent disk does not.

d: Post-operative scar never enhances and recurrent disk does enhance.
Questions:

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a: Disk enhances more slowly than post-operative scar.
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Questions:

In complete spine imaging, to rule out metastatic lesions of the spinal cord, contrast enhancement can be used with T1 weighted images because:

a: Scar enhances and disk does not.
b: CSF is bright and cord is dark.
c: Metastatic lesions enhance and normal cord does not.
d: Normal cord enhances and metastatic lesions do not.
Questions:

In complete spine imaging, to rule out metastatic lesions of the spinal cord, contrast enhancement can be used with T1 weighted images because:

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Questions:

The FDA approved oral contrast agent used for MRI makes bowel appear:

a: Bright on T1/dark on T2 weighted images.
b: Dark on T1/bright on T2 weighted images.
c: Dark on T1/dark on T2 weighted images.
d: Bright on T1/bright on T2 weighted images.
Questions:

Due to its size and orientation within the body, the entire pancreas can possibly be visualized on one imaging section if it is acquired:

a: Axially with thin imaging sections.
b: Obliquely with thick slice thickness.
c: Sagittally with thin imaging sections
d: Coronal with thin imaging sections.
Questions:
When imaging the hip, avascular necrosis can be visualized by exploiting the chemical shift artifact (to make fat-water interfaces more striking) using:

a: Fat suppression
b: In-phase imaging
c: Swan technique
d: a and b
e: Out-of-phase imaging
Questions:
To better evaluate the anterior cruciate ligament, positioning for knee imaging may require:

a: Flexion
b: Extension
c: 15 degree internal rotation
d: Neutral position
e: 15 degree external rotation
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