

Reading Hospital School of Health Sciences

Medical Imaging Program

Clinical Case Study-Hand/Wrist

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Due Date: 10/30/2020

Each student will be assigned clinical a seminar case study for each procedure taught within the semester. Case study review will allow demonstration of knowledge, practice of image critique skills, anatomical structure identification and pathology identification. Submit answers to the below questions for each projection within the case study in a Word.doc (Each projection assigned must have the below answers completed: Hand procedure & Wrist procedure). Within the attached PPT, identify the required anatomy by sliding the corresponding arrow/letter to the anatomy requested. Completed answers to the questions below and anatomical structure labeling within the PowerPoint must be uploaded into the Edvance 360 dropbox under that designated body section. Please be sure to fully answer each line item identified within the assignment below.

Answer #1-#10 for each assigned projection: (Lateral View of the Wrist)

1. Is orientation of the image correct?
 - **Yes, it is oriented correctly**
 - a. If orientation is incorrect, explain why. **NA**
 - b. State how to modify the orientation. (flip, rotate, etc) **NA**
2. Is all necessary anatomy included?
 - **Yes, all anatomy is included.**
 - a. Explain the anatomy required by evaluation criteria. And if it is all included in the image.
 - **The anatomy required is distal radius, and ulna, carpals, and proximal half of metacarpals. Superimposed distal radius and ulna, and metacarpals. Bony trabecular detail and surrounding soft tissues. Yes, it is all included.**
 - b. Drag the arrows with letters on the Case Study slides to identify anatomical structures within each slide.
 - **In PowerPoint**
3. Is the body part centered appropriately?
 - **No**
 - a. Where should the central ray enter for this projection?
 - **It should be perpendicular to the radiocarpal (wrist) joint.**
 - b. If centering is incorrect, explain how you would move the central ray to achieve proper centering. (inferiorly, laterally, etc.)
 - **Centering needs to be moved more distally.**
4. Is the body part positioned accurately?
 - **No**
 - a. If the body part is not positioned accurately:
 - i. Explain what anatomy demonstrates inaccurate positioning (over or under-rotation etc).
 - **It is underrotated, the metacarpals as well as the radius and ulna should be fully superimposed, and they are not.**
 - ii. State the modification of positioning necessary to meet evaluation criteria.
 - **Adjust the hand by moving it more laterally that way it is in a true lateral position.**
5. Is the collimation and IR orientation as required?
 - **Collimation box is not aligned to IR or the anatomy of interest.**
 - a. State the proper collimation size to be used.
 - **It should be 2.5" proximally and distally and then 1" on the sides of the wrist.**

- b. State how the IR should be oriented to the patient.
 - **It should be parallel to the patient.**
6. Is the proper marker(s)/annotation(s) utilized on the image?
 - **Yes, the right marker was used.**
 - a. State if the marker was placed in the proper location.
 - **Yes, it is in the proper location, it could have been placed closer to anatomy, but it works.**
 - b. State if any additional marker(s)/annotation(s) are required.
 - **No additional markers needed.**
7. Is the exposure within the appropriate EI range?
 - **No, it is not. It is overexposed.**
 - a. Identify the correct technique.
 - **70 kVp @ 1.1 mAs (tabletop) 40" SID**
 - b. If not within the appropriate EI range, explain specifically how to adjust the technical factors to bring the EI into range.
 - **Decrease kVp by 15 percent or halve the mAs**
8. Are there any artifacts present on the image?
 - **No artifacts in image.**
 - a. If an artifact is present, list which artifact(s) would make the image not acceptable and an additional exposure to the patient necessary. **NA**
9. Overall, is this image ACCEPTABLE or NOT ACCEPTABLE?
 - **Not acceptable**
 - a. State the reasons this image will require the patient to have a second exposure.
 - **It needs a second exposure because it is not in a true lateral position. This positioning is under rotated. They should align the collimator box to the patient/IR. Adjust the centering and the technique. The collimation is insufficient.**
10. Select **ONE** of the following pathologies that are identified below to research and answer the following questions. Then insert an image which best demonstrates the selected pathology into the Case Study PowerPoint.
 - Boxer's Fracture
 - Rheumatoid Arthritis
 - Chip Fracture
 - Carpal Tunnel Syndrome
 - Scaphoid (Navicular) Fracture
 - a. Define the pathology.
 - b. Identify if the pathology is subtractive, additive, or neither.
 - i. Explain if the technique would need be modified.
 - c. Identify symptoms that a patient would have with this pathology.
 - d. Identify the type of imaging that is obtained for best visualization of this pathology.
 - i. State if there are any other additional non-radiographic studies associated with diagnosis of this pathology