

Reading Hospital School of Health Sciences

Medical Imaging Program

Clinical Case Study-Finger/Thumb

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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: Finger will have 3 projections –PA, oblique, lateral and Thumb will have PA, oblique, lateral). 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 (THUMB – 3rd Image AP of 1st Digit)

1. Is orientation of the image correct?
 - No
 - a. If orientation is incorrect, explain why.
 - b. State how to modify the orientation. (flip, rotate, etc)
 - **This is supposed to be an AP view of the left hand. With this view that means digits 2-5 would be pointing towards the right, but they are facing left. Therefore, the image needs to be flipped.**
2. Is all necessary anatomy included?
 - Yes
 - a. Explain the anatomy required by evaluation criteria. And if it is all included in the image.
 - **Anatomy required is area from the distal tip of the thumb. Open IP and MCP joints, and bony trabecular detail and surrounding soft tissue.**
 - 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?
 - **Centering looks appropriate.**
 - a. Where should the central ray enter for this projection?
 - **It should enter at the MCP joint.**
 - b. If centering is incorrect, explain how you would move the central ray to achieve proper centering. (inferiorly, laterally, etc.) **NA**
4. Is the body part positioned accurately?
 - Yes
 - a. If the body part is not positioned accurately:
 - i. Explain what anatomy demonstrates inaccurate positioning (over or under-rotation etc). **NA**
 - ii. State the modification of positioning necessary to meet evaluation criteria.
 - **No change needed.**
5. Is the collimation and IR orientation as required?
 - Yes
 - a. State the proper collimation size to be used.
 - **Collimate about one inch outside of all anatomy, including about one inch proximal to the CMC joint.**

- b. State how the IR should be oriented to the patient.
 - **The IR should be parallel to the finger, laying in the same direction.**
6. Is the proper marker(s)/annotation(s) utilized on the image?
 - **No, they labeled PA when it should have been AP.**
 - a. State if the marker was placed in the proper location.
 - **Yes, it is in the right location.**
 - b. State if any additional marker(s)/annotation(s) are required.
 - **Just needs to be changed to the correct annotation of AP.**
7. Is the exposure within the appropriate EI range?
 - **Yes, it is in the ideal range.**
 - a. Identify the correct technique.
 - **The correct technique is 63 kVp @ 0.6 mAs (tabletop) and 40" SID.**
 - b. If not within the appropriate EI range, explain specifically how to adjust the technical factors to bring the EI into range. **NA**
8. Are there any artifacts present on the image?
 - **No artifacts.**
 - 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?
 - It can be acceptable and not acceptable.
 - a. State the reasons this image will require the patient to have a second exposure.
 - **If the patients ability allows them to pull their hands towards their body a little more I would try to repeat, but if it is all they can do I would leave it as acceptable and make a note.**
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.

- Burst Fracture
- Baseball (mallet) Fracture
- Bennett's 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