Medical Image Analysis Report

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Patient Name: Vishma Pasayat

Okay, I will analyze the provided image according to the specified structure.

1. Image Type & Region

- The image appears to be a grayscale X-ray.

- It shows the bones of a hand, including the fingers, metacarpals, and carpal bones near the wrist.

- The image quality is decent; the bony structures are clearly visible, although there's some slight blurring.

2. Key Visual Findings

- The bones (phalanges, metacarpals, carpals) are visible with varying densities.

- The shapes of the bones appear generally elongated, with defined joints.

- The carpal bones at the wrist show a more clustered arrangement.

- There are no obvious fractures or dislocations immediately apparent.

- The image shows clear differentiation between the bones and surrounding soft tissues due to the difference in density.

3. General Visual Assessment

- The image presents a view of the hand's skeletal structure.

- The bone alignment looks typical. Nothing immediately stands out as particularly unusual in terms of bone shape or positioning.

4. Patient-Friendly Explanation

- This is like a picture taken with X-rays to see the bones in your hand.

- You can see the long bones in your fingers and the back of your hand, and some smaller bones near your wrist.

- Everything looks like it's in its normal place, like a skeleton hand model.

5. Research Context

1. Image Type & Region

- The image is a grayscale X-ray.

- It shows the bones of a human hand, including the carpals, metacarpals, and phalanges.

- The image quality seems acceptable, providing reasonable contrast between the bone and

surrounding tissues.

2. Key Visual Findings

- The carpal bones are visible at the wrist, arranged in two rows.

- Five metacarpals extend from the carpals into the palm.

- Each finger (except the thumb) has three phalanges: proximal, middle, and distal. The thumb has two.

- The bones appear to have smooth surfaces and relatively uniform density, with expected variations at the joints.

- All bones appear intact without obvious breaks or deformities.

3. General Visual Assessment

- The arrangement and appearance of the bones are consistent with typical hand anatomy as seen on an X-ray.

- There are no visually prominent unusual features.

4. Patient-Friendly Explanation

- This is an X-ray picture of a hand.

- We can see all the bones in your hand, from your wrist to your fingertips.

- Everything appears to be in the right place and the bones look normal.

5. Research Context

- **Radiology of the Hands: Review and Self-Assessment Module | AJR:** This article provides a review of hand radiology, describing normal anatomy and common pathologies. This helps in understanding what a normal hand X-ray should look like.

https://www.ajronline.org/doi/10.2214/ajr.184.6_supplement.0184s157

- **Assessment of Skeletal Age Using Hand-Wrist Radiographs:** This study highlights the use of hand-wrist radiographs as an indicator for skeletal age assessment.

https://pmc.ncbi.nlm.nih.gov/articles/PMC6280566/