

Using Point-of-Care Patient Photographs with Musculoskeletal Radiography to Identify Errors of Laterality in Emergency Department Imaging



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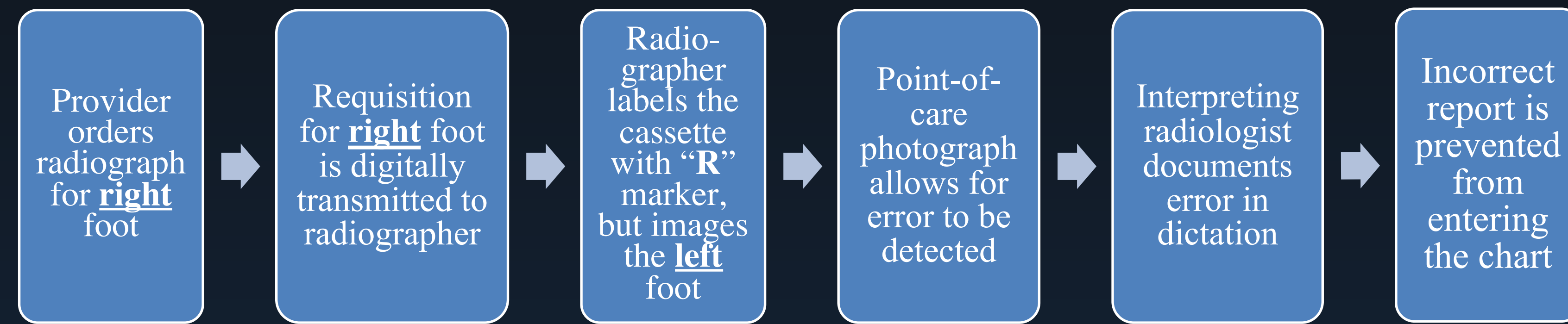
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PURPOSE

To reduce errors in laterality in musculoskeletal imaging by evaluating the utility of point-of-care extremity patient photographs accompanying musculoskeletal radiography.

Emergency radiography imaging workflow: An example of an error in laterality



RESULTS

Total of 347 consecutive MSK radiograph-photograph combinations from 253 unique patients.

- 129 upper extremity radiographs (shoulder, humerus, elbow, forearm, wrist and hand)
 - 218 lower extremity radiographs (hip, femur, knee, tibia/fibula, ankle and foot)
- ➔ 2 discrepancies in laterality were identified, Rate of 1/200 of the total sample.

CONCLUSIONS

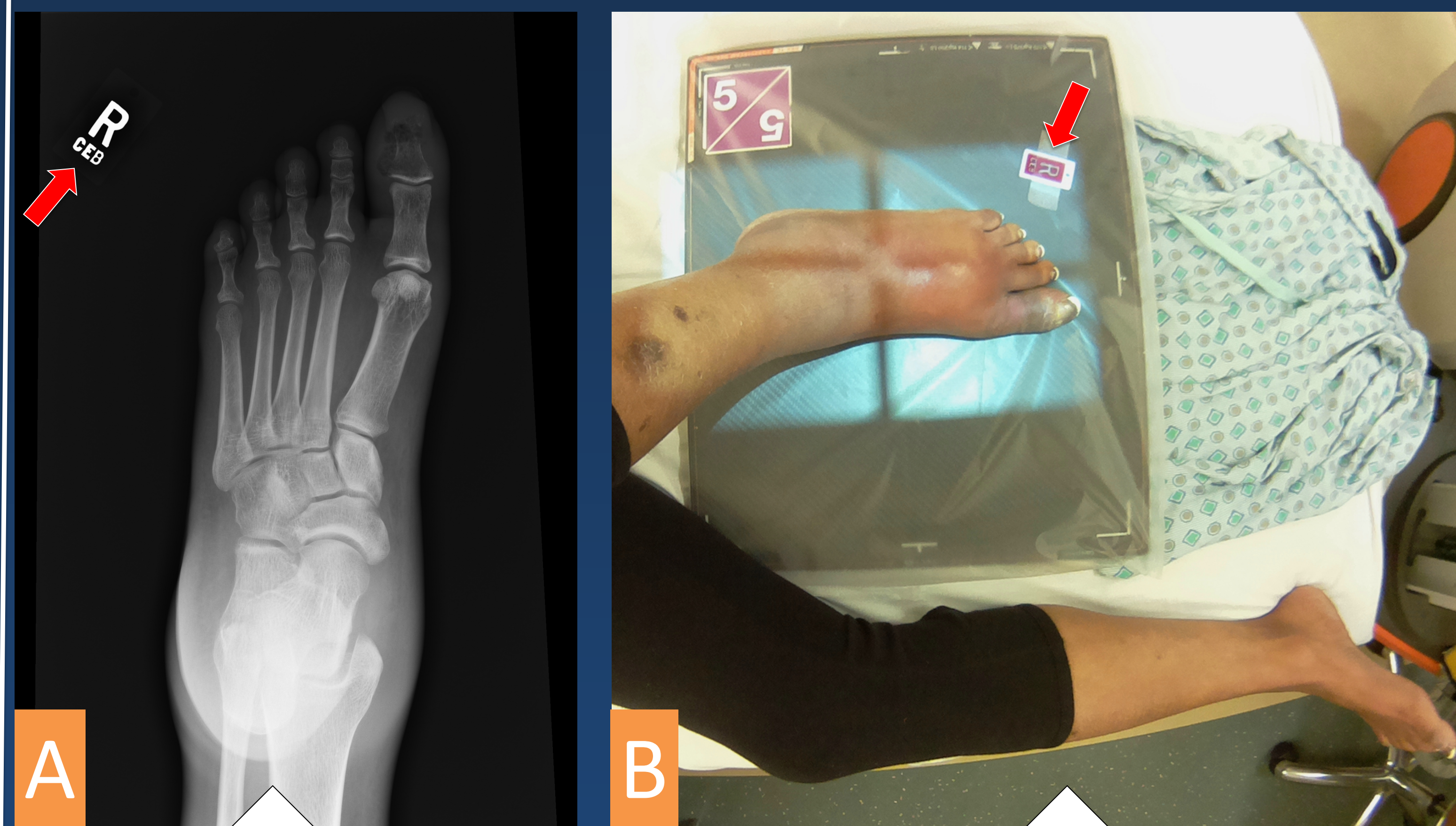
1. Patient photographs obtained concurrently with MSK radiographs can provide a valuable quality tool in identifying errors of laterality.
2. These findings suggest that using point of-care photography in standard practice will reduce errors in laterality.

MATERIALS & METHODS

347 consecutive musculoskeletal (MSK) radiograph-photograph combinations and corresponding radiography provider orders between October 1, 2018, and January 31, 2019, were retrospectively reviewed. Photographs were obtained simultaneously with the radiographs using the PatCam System (Camerad Technologies, Decatur, GA). In each case, laterality was recorded for all photographs, radiographs (based on lead side markers), and radiography orders. Any laterality discrepancy among these variables was recorded. The side indicated on the provider order was taken as the gold standard.

CASE 1: RADIOGRAPH LABELING ERROR

Radiograph in (A) appeared on PACS with “R” side marker on the film (arrow). Contemporaneous point-of-care photograph reveals that, in fact, the **left** foot was radiographed (note “R” marker, arrow). The error is confidently established based on the photograph.

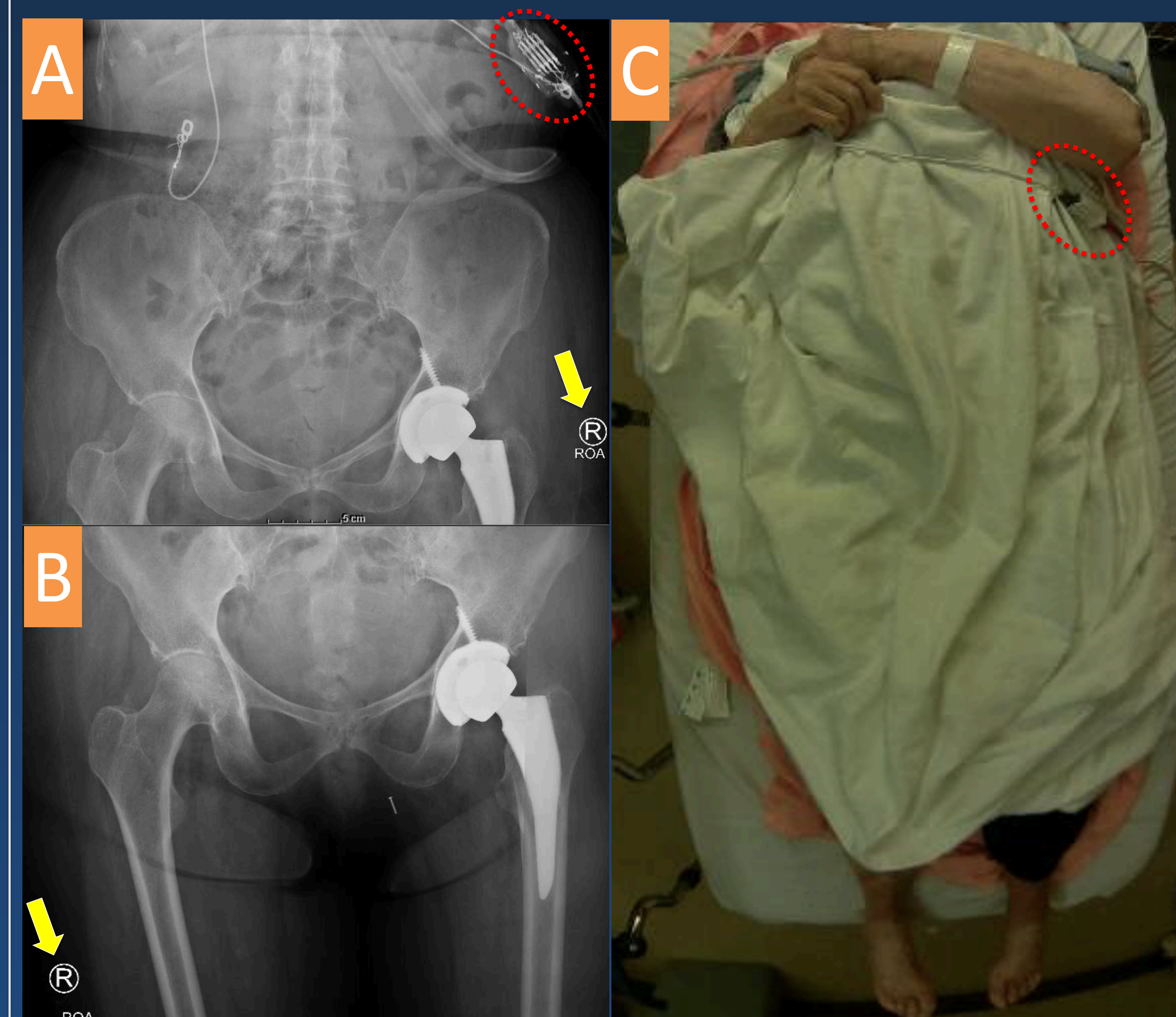


WRONG SIDE!

DETECTED!

CASE 2: OPPOSING LATERALITY ERROR

Two pelvic radiographs were sent to PACS, both with “R” marker, but marker applied to different sides (arrows, A & B). Which is correct? Is (A) correctly labeled, but flipped? Or is it (B)? The answer is in the photograph!



(A) is mislabeled! On the photo, a monitoring device is present below the patient's left arm (dashed line), which is visible on radiograph in (A), confirming that (B) is the correctly labeled radiograph.

