Does penis radiological shadow indicate the side of hip fracture?

Sir,

Hip fractures are common injuries in the elderly. Standard radiographic evaluation of the hip includes an anteroposterior (AP) view of the pelvis. For this additional purpose, radiograph of the pelvis is one of the commonest prescribed radiographs in emergency departments. Usually we notice the fractured hip side and the type of fracture, whenever we are looking at an anteroposterior pelvis radiograph. But we do not question if this radiograph represents a true anteroposterior view.

We have noticed that the radiological shadow of the penis almost always turns to the side of the hip fracture in male patients and especially in displaced fractures. Many surgeons have tried to explain this observation.

So we would like to test the hypothesis that the radiological shadow of the penis indicates the side of the hip fracture [Figure 1].

In our retrospective study, 712 male patients with hip fracture were included. In order to test our hypothesis we studied their first pelvis radiograph on admission, before operation. Intertrochanteric hip fracture was noticed in 475 cases and subcapital hip fracture in 237 cases. All the patients had no history of previous hip fracture, hip osteoarthritis, spinal cord disorders, hernia or congenital penis disorders. The mean age of the patients was 78.6 (range 68-83) years. Statistical analysis was performed by chi-square analysis.

In 457 (96.2%) displaced intertrochanteric fractures and in 221 (93.2%) displaced subcapital fractures, radiological shadow of the penis was turned to the fractured side ($\chi^2 = 17.1, P<0.01$). Furthermore, in 18 (3.8%) undisplaced intertrochanteric and 16 (6.8%) undisposed subcapital fractures, the radiological shadow of the penis was in midline position. We concluded that the radiological shadow of the penis indicates the side of the fracture when a displaced hip fracture occurs.

The position of patients during the anteroposterior pelvis radiograph may explain this observation. Patients with a displaced hip fracture exhibit the classic presentation of a shortened and externally rotated extremity. We believe that the patients in order to avoid further external rotation of their leg, turn their pelvis and body to the fractured side, so as to immobilize the fracture and to reduce pain. This means that the penis follows the fracture because the pelvis turns to the fractured side.

So the anteroposterior view of the pelvis is in fact an oblique view, which shows the fracture and the penis shadow on the same side.

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Reference