A consecutive prospective evaluation of 150 primary total hips employing intraoperative digital radiography (DR) was carried out. An anteroposterior (AP) pelvic radiograph with the patient in the lateral decubitus position was obtained for all hips (Fig. 2). The orientation of the intraoperative film was matched to that of the preoperative AP pelvic radiograph (Fig. 1). The image was taken after traditional placement of the acetabular component and best estimate of femoral trial size, position, and head and neck length (Fig. 3).

The DR system produced an image within 6 seconds of exposure. This trial radiograph was then used to make adjustments. Given that the cassette does not have to be moved for image processing, a precise AP film was obtained by simply adjusting the operating table. 2-3 minutes were allotted for each film.

Corrections to stem size, cup position, screw length and position, limb length, and offset were made based on this intraoperative AP pelvic radiograph. The final intraoperative image was compared to a postoperative standard radiograph in supine position at 2 weeks after total hip arthroplasty to verify the validity of using intraoperative digital radiography (Fig. 4). Abduction angle, limb length, offset, and canal fit and fill were assessed for confirmation of the validity of the intraoperative imaging technique.

Intraoperative digital imaging is a reliable tool for achieving the desired radiographic results in THA. The technique is efficient and affordable. The high rate of success in this series suggests that this technology should contribute to a paradigm shift in the standard of care in THA.

REFERENCES

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