AB221. 154. Accuracy of positioning of scaling ball in pre-operative imaging for total hip arthroplasty

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Background: Accurate preoperative planning improves surgical outcomes. Positioning of an external calibrator marker (ECM) used in digital templating can be complicated by many factors. Previous papers have evaluated the accuracy of different types of markers and X-ray quality, this audit aims to evaluate how the variability of the SB position effects templating.

Methods: Anterior posterior pelvic radiographs of 101 patients who underwent primary uncemented THA were reviewed. Revision cases were excluded. The position of the SB used for calculating the magnification factor of the X-rays was plotted using anatomical landmarks and borders. Pre-operative templating measurements of the acetabular component and femoral component were recorded and compared to the theatre logbook of implants used. Microsoft Excel 2016 and Statistical Package for the Social Sciences were used for data analysis.

Results: Accuracy of positioning of the SB in the correct position was 40.5%. In two cases the SB were placed on the abdomen and required additional X-rays. Cup size was measured correctly (within one size error) in 26.7% of the patients, with a range from –10 to +8 mm. 71.5% of stem size was measured correctly pre-operatively (within one size error), with a range of sizes from –4 to +3.

Conclusions: While high variability of ECM positioning still exists, studies have found greater accuracy obtained for ECM placed at the greater trochanter. The importance of proper positioning needs to be established with radiographer education and protocol guidance.

Keywords: Orthopaedics scaling ball; total hip arthroplasty

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