

Roundup³⁶⁰

Hip & Pelvis

X-ref For other Round-ups in this issue that cross-reference with Hip & Pelvis see: Research round-ups 2 & 3; Trauma round-up 2.

Spinopelvic characteristics normalize one year after total hip arthroplasty: a prospective, longitudinal, case-controlled study

There is a complex interaction between spinal, pelvic, and hip pathology. In recent years, spinopelvic considerations have become a hot topic in the arthroplasty literature, with over 170 PubMed publications noted since 2017. Despite the obvious ongoing interest in the hip-spine relationship, a lack of practical surgical and pre-operative considerations has been worked out. There is little guidance for the hip and spine surgeon striving to improve complex and dynamic pathology. The contribution of anatomical relationships like lumbar lordosis, pelvic tilt, and hip flexion contractions, which are commonly studied in the literature, are of course surrogate measures that have clinical importance, but uncertainty remains as to what degree they are useful. Authors from **Heidelberg (Germany)** sought to determine if there is evidence that these pathological spinopelvic characteristics in the seated and standing position normalize one year after total hip arthroplasty (THA).¹ Through investigation of dynamic spinopelvic parameters, which may be more aptly coined femoral-pelvic-spine relationships in this instance, these investigators demonstrated that hip flexion parameters equilibrate and normalize to similar values as the general population one year after THA. Even the 21% of subjects who met the criteria for spinopelvic hypermobility in this study demonstrated significant change to normalize to population-matched age controls. The



significance of this finding is twofold: first, it provides evidence to support use and guidance to surgeons to consider a new measure (hip user index), which considers another new anatomical term, pelvic moment, defined as the amount of pelvic extension during the dynamic standing to sitting motion. Second, these results add more fodder to the discussion regarding patients with both spinal and hip disease when considering the appropriate timing and sequence of surgical intervention. Through their demonstration of improved and even normalized hip flexion, pelvic tilt, and lumbar moments one year after THA, it is plausible that some subsequent spinal surgeries, such as decompression, could be avoided in patients presenting with non-fixed spinal deformities. Despite the clinical suggestion posited by this paper, questions remain regarding the optimal component positioning during the time of THA for individual patient anatomy and dynamic functional parameters like relative pelvic moment. Other studies, such as Nam et al's publication on "The impact of total hip arthroplasty on pelvic motion and functional component position is highly variable," suggest that there can be significant

increases or decreases in pelvic tilt from standing to seating after arthroplasty. Especially regarding the topic of spinopelvic relationships, it seems that in this topic the more we learn, the less we know.

Indication for proximal femoral replacement is associated with risk of failure

The use of proximal femoral replacement (PFR) is usually reserved for extreme cases: bone and soft-tissue tumours about the hip, multiply revised hip arthroplasty (with or without infection), or comminuted periprosthetic fracture. While the prostheses are excellent at dealing with absent bone stock, the extensive nature of the replacement increases the incidence of complications, and can compromise functional outcomes as the soft-tissue repairs can be challenging and prone to failure. Notwithstanding the complications, these prostheses do find indications in complex revision cases as well, and although there are papers describing the outcomes of these prostheses, there is not much looking at survival by indication for surgery. The authors of this interesting study from **Chicago (Illinois, USA)** noted a gap in the literature regarding mid-term survivorship of PFRs when used in cases of revision hip arthroplasty versus tumour, and set about providing the necessary evidence.² Although a relatively small series, this paper does have the advantage of being a 15-year contiguous series with the same surgical team. The authors reviewed all PFRs over a 15-year period with minimum two-year follow-up, and were therefore able to include 41 PFRs from prior failed total hip arthroplasty (THA) and 58 PFRs done for neoplasms. Their exploratory analyses found that there were no apparent differences between the groups in