




COMMENTARY

Comment on “The Influence of Femoral Proximal Medullary Morphology on Subtrochanteric Osteotomy in Total Hip Arthroplasty for Unilateral High Dislocated Hips”

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We read the article by Zhou Y-G and his colleagues entitled “The Influence of Femoral Proximal Medullary Morphology on Subtrochanteric Osteotomy in Total Hip Arthroplasty for Unilateral High Dislocated Hips”¹ with great interest. In this study, the authors concluded the diaphyseal canal flare index (DCFI) and Canal flare index (CFI) may be potent indicators in predicting the use of subtrochanteric osteotomy (STO) during total hip arthroplasty (THA) in unilateral Crowe IV developmental dysplasia of the hip (DDH). We congratulate the authors for their efforts. However, we would like to offer the following points for your consideration and would welcome the authors' response.

First, the authors analyzed the predictive value of proximal femoral morphology for STO in patients with Crowe IV DDH. According to our knowledge, the following three factors may be more important predictors for the use of STO, including leg length discrepancy (LLD) and height of the rotation center, and surgery history of the ipsilateral hip. LLD is the key factor to be considered before surgery for Crowe IV DDH. The neurovascular injury must be avoided when correcting a proximally displaced femur. Lengthening of >4 cm can result in sciatic or femoral nerve palsy². When patients with dislocation >4 cm, STO is an effective method of avoiding neurological complications³. The author's previous study also revealed that indicators of dislocation height were useful in predicting the use of STO during THA for Crowe type IV DDH⁴. The height of the rotation center also affects the length of extension required for femoral repositioning. When reconstructed in the high hip center of the false acetabular position during THA, equivalent limb length can often be obtained without STO^{5, 6}. Adequate

release of the periarticular tissues of the hip joint ensures successful joint reduction. The periarticular soft tissue scarring and adhesions caused by surgery history for DDH could increase the difficulty of soft tissue release, so we speculate that the surgical history may influence the use of STO in THA. In addition, Li *et al.* pointed at changes in the pelvic and spinal caused by chronic dislocation of the hip need to be taken into consideration when planning THA, in order to obtain equal leg lengths post-operatively in Crowe type IV DDH⁷. Given the above, we suggest that the authors take these factors into account, and then perform a comprehensive analysis that may explore more meaningful results.

Second, the main parameters of proximal femoral morphology in this study were CFI, metaphyseal canal flare index (MCFI), DCFI, and Intertrochanteric Distance. The authors found that CFI, DCFI, and Intertrochanteric Distance were statistically different between the two groups by one-way analysis of variance (ANOVA). Because of the possible multicollinearity among these factors, we suggest further binary logistic regression analysis to exclude potentially repeated and nonsignificant factors.

We appreciate that Zhou Y-G has provided us with a clinically meaningful study. We would welcome the authors' response as this would help to further support the findings of this study.

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