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FLORIDA ORTHOPAEDIC INSTITUTE

Femoral Head Center: A Reliable Landmark For Restoring Leg Lengths?

Ibrahim DA, Jones T, Madurawe C, Miranda M

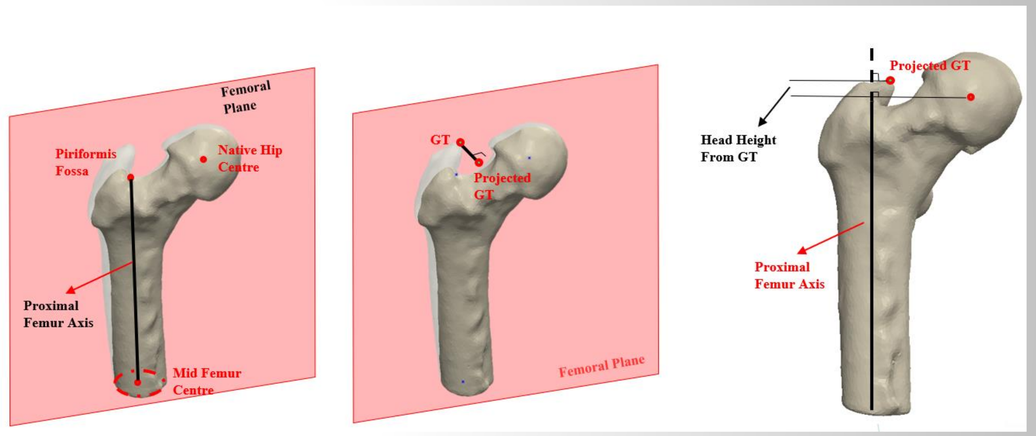
INTRODUCTION

- The relationship between the femoral Head Center (HC) and the Greater Trochanter (GT) is a commonly utilized parameter to assess leg length in total hip arthroplasty (THA)[1].
- This study attempted to assess the validity of the assumption that the tip of the GT is a reliable landmark to match with the femoral HC, with the ultimate goal of restoring leg lengths.

METHODS

- As part of our routine protocol, 56 patients (59% females and 41% males) with unilateral hip osteoarthritis had preoperative CT scans with 3D reformats performed as part of the planning for THA.
- Using the imaging obtained, the height of the contralateral, non-arthritic, femoral HC was measured and its relationship to the GT reported. Negative numbers were assigned when the HC was below the level of the GT
- Patients were excluded if the contralateral hip had already undergone a THA, or demonstrated any femoral head abnormalities.

METHODS



RESULTS

- A wide range of variability existed when measuring the relationship of the femoral head center to the GT.
- Our values ranged from -14mm to +8mm.
- The mean height was recorded as -6.1mm.
- There was no difference in mean values recorded between males and females

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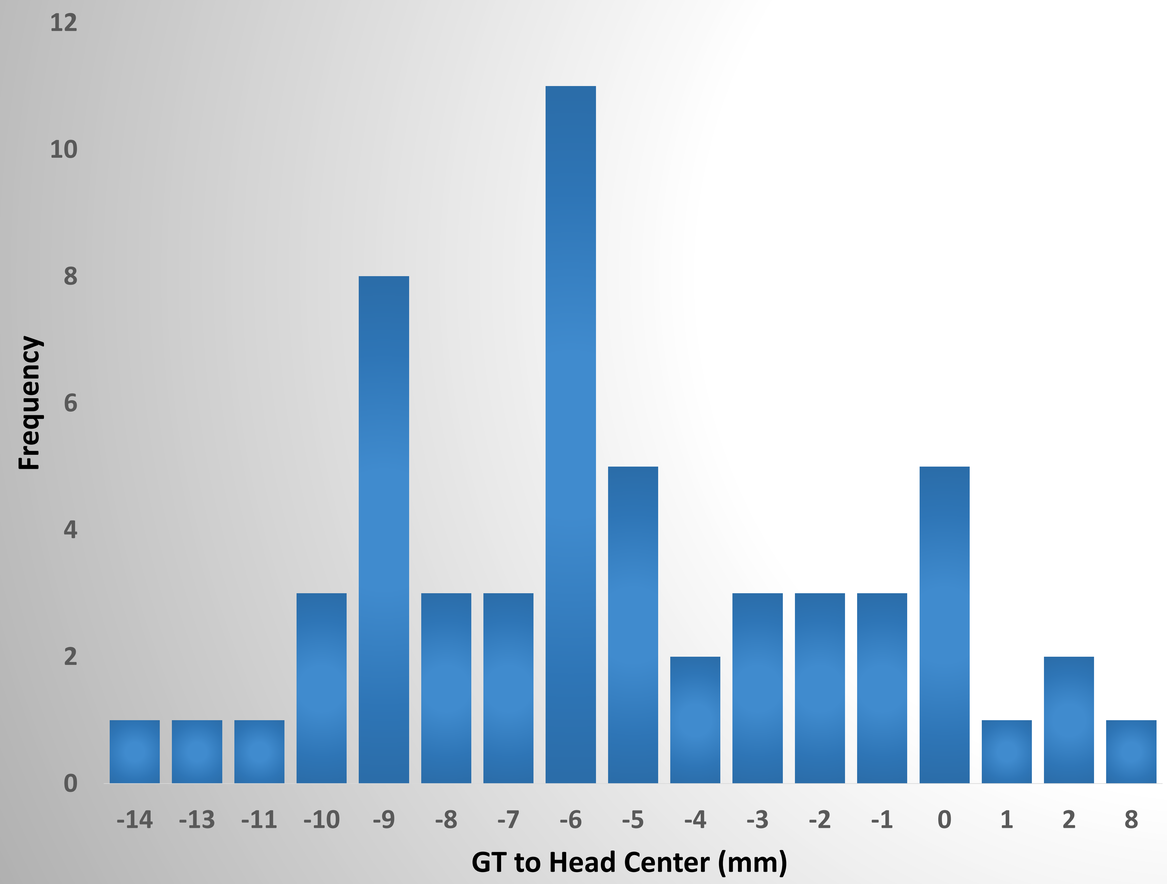

Distribution of femoral head center relative to the superior tip of the GT

CONCLUSION

- The position of the femoral head center relative to the GT is highly variable.
- Our data suggests the breadth of variability extends over approximately 22mm in a THA ready population and rarely sits at the same level.
- Surgeons should exercise caution when using the relationship between these two parameters to make leg length decisions.

REFERENCES

1. Memon AR Butler J, Guerin S, Galbraith J, Flanagan O, Harty J. Proximal femoral anatomy in total hip arthroplasty. A tri-planar computed tomographic assessment. Acta Orthop Belg. 2011 Aug, 77 (4): 488-493.

DISCLOSURES

One or more of the authors are paid employees of the Corin Group