Restoration Of Native Femoral Length And Deformity Correction With An Open-Wedge Proximal Femur Corrective Osteotomy

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INTRODUCTION:

This case report highlights the successful restoration of native lower limb length and correction of deformity of right supratrochanteric femur malunion through an open-wedge proximal femur corrective osteotomy combined with a long dynamic hip screw (DHS).

REPORT:

A 37-year-old gentleman with a history of childhood fracture over the proximal right femur, which was treated conservatively. This resulted in a right supratrochanteric malunion and femoral limb length discrepancy of 3 cm. He had functional difficulty due to shortening and deformity. Choice of treatment options discussed, including a Limb Reconstruction System (LRS). However, the patient refused for external devices modality. Thus, an open-wedge proximal femur osteotomy combined with a long DHS was performed. At 3 months postoperatively, well united of corrected deformity and gained of 2.5cm femoral lengthening was recorded.

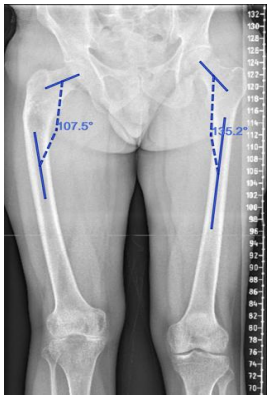

Figure 1: Preoperative radiograph revealed varus malunited femur with shortening.

Figure 2: Postoperative radiograph of corrected deformity and restoration of length with proximal femoral osteotomy using long DHS.

DISCUSSION:

The patient recorded of varus malunion of proximal femur of 107.5-degree femoral neck shaft angle (FNSA) and a shortening of 3 cm of right femur compared to left femur. An open-wedge proximal femur osteotomy done at center of rotation angulation (CORA) combined with a long DHS was performed to address the deformity and shortening. Postoperatively, we managed to correct the FNSA to 129.5 degree as well as gained 2.5 cm of femoral length.
The amount of length gained from performing an open-wedge osteotomy varies. The net increase in extremity length is greater when a more severe preoperative deformity is present. The increase in length ranges from 1.65 cm to 2.3 cm and 3.35 cm in open wedge osteotomies performed for deformities of 5 degrees, 15 degrees, and 25 degrees, respectively [1].

REFERENCES:

1.Mihalko, W.M., & Krackow, K.A. (2001). *Preoperative planning for lower extremity osteotomies. The Journal of Arthroplasty, 16(3),322–329.*