

**Bilateral in Toeing Gait with Femoral Retroversion and Internal Tibial Torsion**

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**INTRODUCTION:**

Hypophostaeic rickets is a hereditary disorder of defective bone mineralization that can cause short stature and lower limb deformity. Dr Stanley James described malalignment syndrome presentation are femoral anteversion and external tibial torsion. Our patient presented with femoral retroversion and internal tibial torsion.

**REPORT:**

A 16 years-old boy has underlying of Fanconi-Bickel syndrome with combination of hypophostaeic rickets and proximal tubular acidosis.

He presented with bilateral knock-knees and had done bilateral distal femur hemiepiphysiodesis in December 2020. However, his bilateral genu valgum has remained static. Otherwise, he has no active complain.

On clinical examination, he has short stature with bilateral genu valgum. He has bilateral femoral external rotation and internal tibia torsion.



**Figure 1:** Appearance of lower limb upon standing

Rotational profile shows limited hip internal rotation of 5 degree and excessive external rotation of 80 degree bilaterally. Thigh foot angle is 15 degree internal bilaterally.

Plain radiograph shows closed physis, widening of metaphysis and bowing of bilateral femur and tibia.



**Figure 2:** Pre and post operative plain radiograph. Shanz pin as guide to correct rotational deformity.

He went for removal of 8-plate, derotation osteotomy and plating of right femur and closing wedge osteotomy and plating of right tibia with fibulectomy.

Intraoperatively, we used temporary monorail external fixator to stabilize femur derotation osteotomy prior to definitive fixation with locking plate. Correction was performed close to centre of rotation of angulation (CORA).

Post operative, the malalignment and malrotation were restored. We are planning to do the same procedure on the left lower limb once right lower limb recovered.

It is reported 12% of population that have femoral anteversion and external tibia torsion. None of the study report prevalence of miserable malalignment syndrome with femoral retroversion and internal tibial torsion.

**CONCLUSION:**

Corrective surgery is indicated to correct rotational deformity especially in severe condition.

**REFERENCES:**

1. Stiebel M, Farr J, Paley D. Lower Limb Rotational Malalignment: Derotational Osteotomies of the Femur and Tibia in the Setting of Recurrent Patellar Instability. Operative Techniques in Sports Medicine 2023;31:4(151038)