

Femoral Rotational Osteotomy for Posterior Hip Impingement in Young Adults with Increased Femoral Version

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INTRODUCTION: Posterior femoro-acetabular impingement in patients with increased femoral version can result in significant hip pain, chondro-labral injury, and limited range of motion. Femoral rotational osteotomy may address these issues by correcting excessive femoral ante-version.

METHODS: This retrospective case series included 25 adolescents (mean age 14.8 years) with symptomatic increased femoral version ($>35^\circ$) treated between 2015 and 2022. Inclusion required hip pain, limited range of motion, and increased femoral version confirmed on CT. Patients underwent femoral external rotational osteotomy targeting a post-operative femoral version of $\sim 15^\circ$. Outcomes assessed included femoral version, hip range of motion, and Harris Hip Score pre-operatively, at 6 months, and at 2 years post-operatively.

RESULTS: Mean femoral version improved significantly from $39^\circ \pm 3^\circ$ pre-operatively to $19^\circ \pm 7^\circ$ post-operatively ($P < 0.001$). Internal rotation decreased from $54^\circ \pm 9^\circ$ to $32^\circ \pm 8^\circ$, while external rotation increased from $38^\circ \pm 4^\circ$ to $44^\circ \pm 5^\circ$ ($P < 0.001$). Mean Harris Hip Score improved from 62.5 ± 10.3 to 86.1 ± 6.4 at 6 months, with sustained results at 2-year follow-up.

DISCUSSION AND CONCLUSION: Femoral rotational osteotomy effectively reduces femoral anteversion, improves external rotation, and significantly enhances hip function in adolescents with posterior hip impingement due to increased femoral version.