THE CRITICAL CORNER OF CAM FEMOROACETABULAR IMPINGEMENT: AN ARTHROSCOPIC PILOT STUDY
Emerging basic science evidence supports pathologic femoroacetabular impingement occurring medial to the classic anterolateral quadrant of cam deformities with early acetabular rim abutment and decreased hip internal rotation on anterior impingement testing. To date, no clinical studies have been performed to support or refute this concept.
The addition of anteromedial femoroplasty will improve hip internal rotation beyond that achieved with classic anterolateral femoroplasty.
ANTEROMEDIAL FEMOROPLASTY TO INCREASE FLEXED HIP INTERNAL ROTATION
In patients meeting the inclusion criteria of cam femoroacetabular impingement that underwent arthroscopic femoroplasty, we performed goniometric measurements of intra-operative hip internal rotation (HIR) in 90 degrees hip flexion and 0 degrees adduction after anterolateral femoroplasty. Those patients exhibiting HIR <40 degrees underwent further anteromedial femoroplasty with subsequent repeat measurement of HIR. Nonparametric statistical analysis was performed.
Of 44 patients, 30 patients (14 male) of mean age 37.8 years (15-59) met the intra-operative inclusion criteria comprising the substance of this study. Pre-operative HIR averaged 20.8 degrees (10-30, intra-operative HIR averaged 29.5 degrees (18-39) following anterolateral (AL) femoroplasty and 42.7 degrees (32-61) after additional anteromedial (AM) femoroplasty. The gain in HIR after AL femoroplasty was 8.7 degrees (2-23) (P<0.0001). The further gain in HIR after AM femoroplasty was 13.2 degrees (2-22) (P<0.0001). The overall gain in HIR after AL and AM femoroplasty was 21.9 degrees (13-38) (P<0.0001).
This pilot study provides clinical intraoperative evidence suggesting arthroscopic anteromedial femoroplasty may provide further cam decompression with resultant gains in hip internal rotation in patients with a cam component of femoroacetabular impingement. The resident’s ridge of the hip is described as an arthroscopic landmark which may benefit from anteromedial cam decompression.
CONCLUSION

- Femoroplasty of the anteromedial “critical corner” improves internal rotation of the flexed hip and supports the emerging concept of cam impingement extending beyond the classic anterolateral quadrant of the proximal femur.
REFERENCES

- Botser IB, Ozoude GC, Martin DE, Siddiqi AJ, Kuppuswami S, Domb BG. Femoral anteversion in the hip: Comparison of measurement by computed tomography, magnetic resonance imaging, and physical examination. Arthroscopy 2012 (Epub ahead of print)