## Paper #46

## Does Severity of Dysplasia Influence Clinical Outcomes Following the Periacetabular Osteotomy (PAO)? A Case Control Study

George Grammatopoulos, MD, Cecilia Pascual Garrido, MD, Jeffrey J. Nepple, MD, **Paul E. Beaulé, MD**, Anchor Group, John C. Clohisy, MD

Introduction: Factors that improve chances of PAO success include: young age at surgery, absence of intra-articular disease and joint congruency. The aims of this case-control study from were to assess whether the severity of acetabular dysplasia has an effect on outcome following PAO and/or the ability to achieve desired acetabular correction.

**Methods:** This is an IRB-approved query of a prospective, multicentre, longitudinal cohort of consecutive PAOs. Of the available 381 cases, 61 hips had pre-PAO radiographic features of mild-dysplasia (Al<15° and LCEA>15°) and comprised the cases. The cases were matched for age (p=0.7), gender (p=1), BMI (p=0.9), Tönnis grade pre-PAO (p=0.6) and joint congruency (p=0.9) with a group of controls (n=183) obtained from the remainder of the cohort. Clinical outcomes and complications were compared between the groups. Lastly, the post-PAO LCEA/Al were compared between study cases and controls; optimum correction was LCEA:22°-37° and Al:-5°-+10°.

**Results:** At a mean follow-up of  $4(\pm 1.5)$  years, the mean improvement in HHS and HOOS were  $23(\pm 20)$  and  $28(\pm 23)$  respectively. 3 hips had undergone a THA and 13 had undergone further procedures. There were 21 major complications. Mildly dysplastic hips had slightly inferior HOOS compared to controls, both pre- (52Vs.59) and post-operatively (73Vs.78); however, similar improvements in HHS and HOOS were seen between the groups. No difference in ability to adequately correct acetabulum was seen (67Vs73%, p=0.4). There was no difference in the complication rate between groups (p=0.5). More major complications were seen in the controls (p=0.01); 19/21 major complications occurred in the controls [excision of HO(3), nerve injury(4), non-union(6), stress fracture(3)].

**Conclusion:** Functional improvement post-PAO and the ability to achieve optimum fragment correction are independent of preoperative severity of dysplasia. The lack of major nerve injuries, non-unions or ischial stressfractures in the mildly dysplastics may be related to the smaller degree of fragment mobilization required.