

Prevalence of Chondral Defects in Patients with Borderline Dysplasia versus to Non-Dysplastic Patients

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DISCLOSURES

- ◆ **Dr. Marc J. Philippon disclosures are:**
 - **Smith & Nephew^{a,b}, ArthroSurface^b, HIPCO^b, MIS^b, ConMed Linvatec^a, Bledsoe^a, Slack^a, Elsevier^a, DonJoy^a, Ossur^b, Arthrex^b, Siemens^b, Vail Valley Surgery Center^c, SPRI^c, ASIAM^c, Vail Health Services^c, ISHA^c**
 - A. Consulting/Royalty**
 - B. Research Support**
 - C. Board Member**

The rest of the authors do not have anything to disclose.

Background

- Borderline dysplasia is characterized by a lateral center edge angle (LCEA) between 20° - 25° in the anteroposterior(AP) pelvic radiograph.
- Borderline dysplastic patients undergoing hip arthroscopy to address femoroacetabular impingement (FAI), often present cartilage lesions on the femoral head and/or the acetabulum.

Purpose

- To compare the prevalence and the size of cartilage lesions (Outerbridge grades III and IV) on the femoral head and acetabulum surface between borderline dysplastic and normal subjects who underwent primary hip arthroscopy to address femoroacetabular impingement pathology.

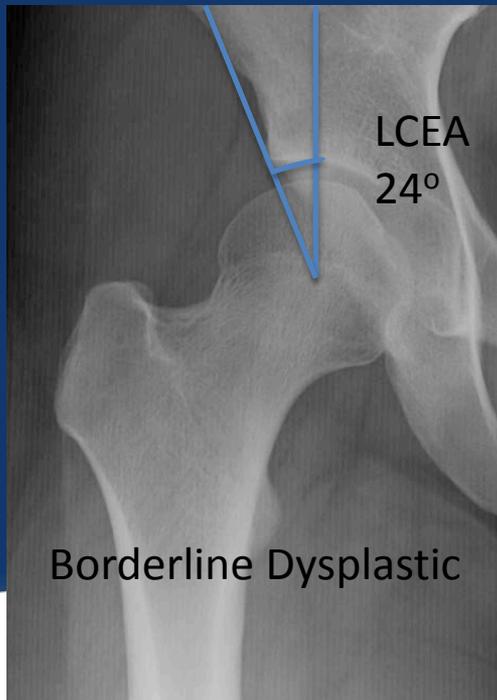


Methods

- Patients who underwent primary hip arthroscopy with correction of FAI (labral repair or labral reconstruction) from November 2005 to April 2016 were included.
- Patients were excluded if they had previous open hip surgery had a LCEA measuring less than 20° or had incomplete surgical data.

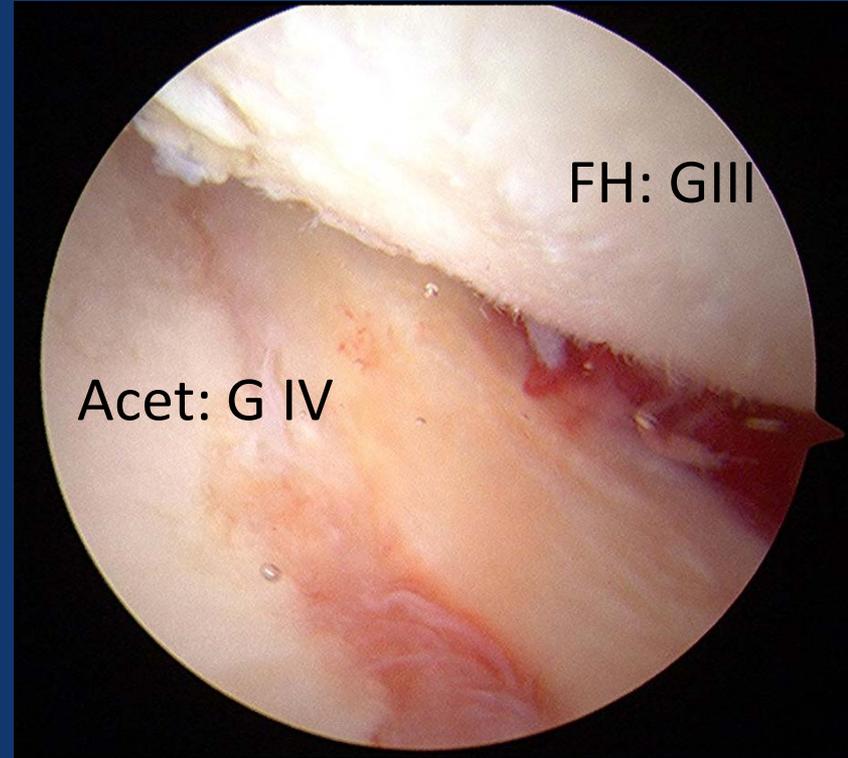
Methods

- Patients were divided into two groups based on their LCEA measurement on the AP pelvic radiograph. Borderline dysplastic patients (Group 1) had LCEA measurements between 20° - 25° . Non-dysplastic patients (Group 2) patients had LCEA measurements between 25° - 40° .



Methods

- The prevalence and the size of chondral lesions on the femoral head and acetabulum were recorded for both groups during hip arthroscopy. This was a retrospective comparative study of prospectively collected data.



Results - Demographics

- Two thousand five hundred and forty six patients met the inclusion criteria and were included in this study. Group 1 (borderline dysplastic) consisted of 324 patients with an average LCEA of 23.2° . In the second group, 2222 patients were included with an average LCEA of 34.6° .
- Both cohorts were comparable regarding demographic characteristics such as age, gender, alpha angle, anterior joint space and fovea joint space. Statistically significant difference was found between both groups regarding the weight bearing surface angle, Sharp Angle and Lateral Joint Space.

Demographic Characteristics

	Borderline	Non Borderline	P Value
Number	324	2222	
Age (years)	33.9	33.7	0.905
Gender	162 M, 161 F	1227 M, 994 F	0.086
Average CE	23.2°	34.6°	<0.001
Alpha Angle	63.1°	61.6°	0.531
WBS Angle	10.4°	6.5°	<0.001
Sharp Angle	42.0°	38.8°	<0.001
Lateral Joint Space	3.8mm	4.0mm	0.004
Anterior Joint Space	3.7mm	3.7mm	0.369
Joint Space	3.8mm	3.8mm	0.676

Prevalence Size Cartilage Defects

	Borderline Dysplastic	Non Borderline Dysplastic	P Value
Grade III IV Acetabulum	150 (46.2%)	953 (42%)	0.255
Size	165 mm ²	111 mm ²	0.011
Grade III IV Femoral Head	156 (48.1%)	260 (11.7%)	<0.001
Size	160.4 mm ²	135 mm ²	0.039

Results - Cartilage Damage

- Borderline dysplastic patients were **EIGHT** times more likely to have grade III and IV chondral defects on the femoral head surface compared to the non-dysplastic group ($p < 0,001$). On the acetabular side, no difference in the prevalence was found between the two groups ($p = 0.588$). Regarding the chondral damage size, the borderline dysplastic group had significantly larger damage than the non dysplastic group in the acetabulum and the femoral head ($p = 0.039$ and $p = 0.011$, respectively).

Conclusions

- Patients with FAI and borderline dysplasia are more likely to have grade III and IV Outerbridge chondral damage only in the femoral head than non-dysplastic patients. Borderline dysplastic patients had significantly larger chondral damage in the femoral head and acetabulum.



Thank you!

Keeping people active.