

Hip Preservation (Dysplasia)

@NAILEDITORTHO



Acetabular Dysplasia

Classic- results from insufficiency of anterosuperior acetabulum

3 types: anterosuperior, global, and posterosuperior

In a non dysplastic hip- acetabular labrum functions to seal hip joint rather than absorb direct load

In dysplastic hip- labrum and acetabular rim are subjected to direct load- leads to labrochondral pathology

Inc forces > labrum hypertrophy

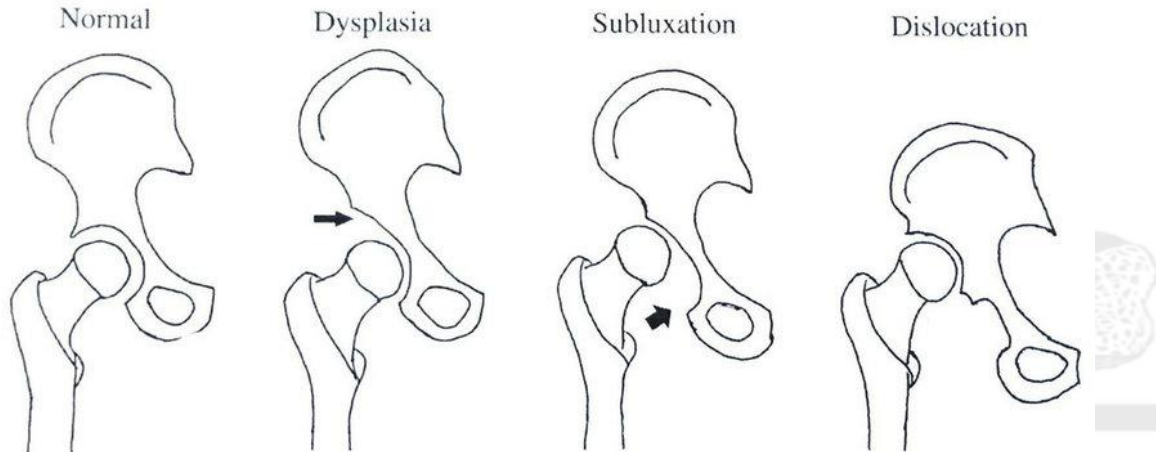


Acetabular Dysplasia

Natural History

Mostly based on lateral center edge angle -
less than 20 leads to early OA

LCEA <30 degrees- assoc w/ 3.3 risk of OA



Femoral Deformity

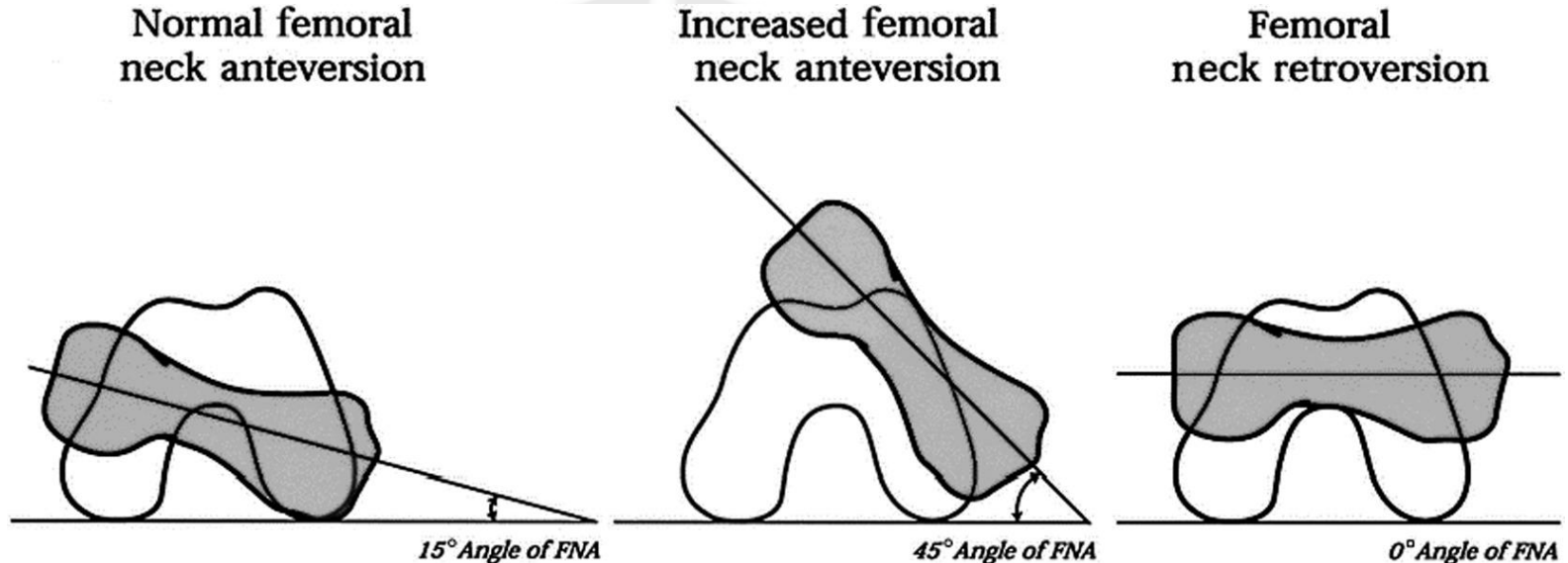
Usually less severe

Increased femoral anteversion- places additional stress on anterior hip stabilizers (normal is 5-15 degrees)



Femoral anteversion role

Combined acetab and femoral anteversion >40
or femoral anteversion >20 deg is a risk factor
for hip OA

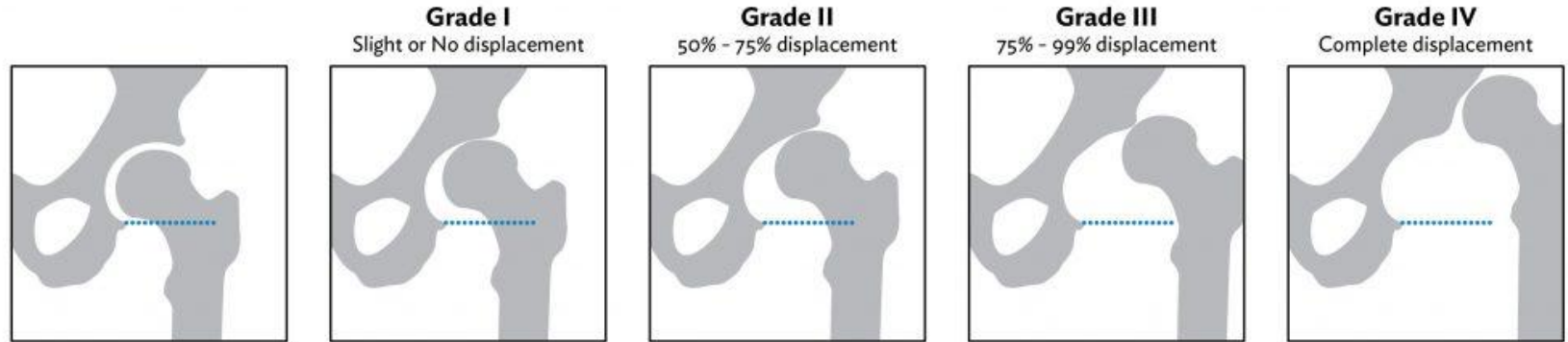


Classification

Crowe

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Crowe Classification of Dislocation Severity



History

Groin pain

20% w/ low back pain, lateral hip pain
(abductor overload)

Activity related pain w/ insidious onset and
gradual progression

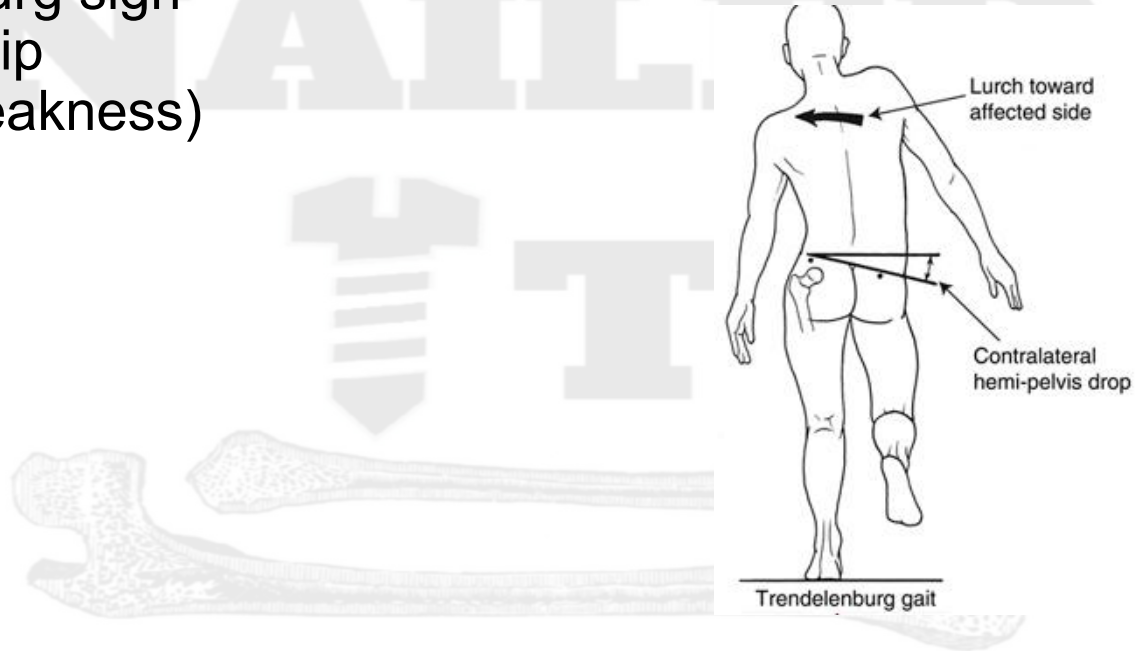
+FH of dysplasia

Female



Physical Exam

Trendelenburg sign
(assesses hip
abductor weakness)

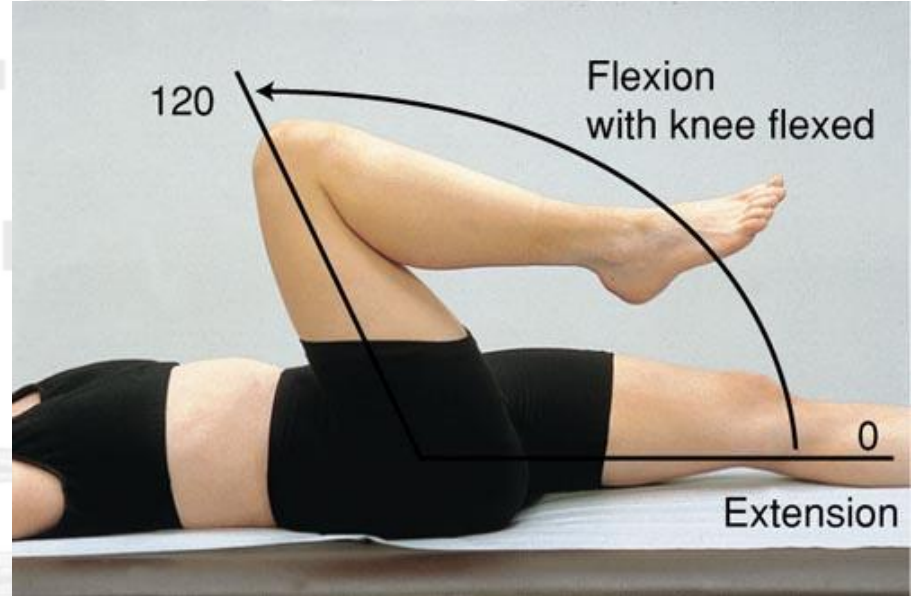


Physical Exam

Supine hip ROM (flexion, abduction, adduction, IRF, ERF)

Increased IRF- assoc w/ inc anteversion

decreased/ normal IRF- assoc w/ dysplastic hips



Physical Exam

Apprehension test (hip extension + ER)-
positive test assoc w/
instability

Prone IR/ER

Craig test

Diagnostic hip injection



Xray Evaluation

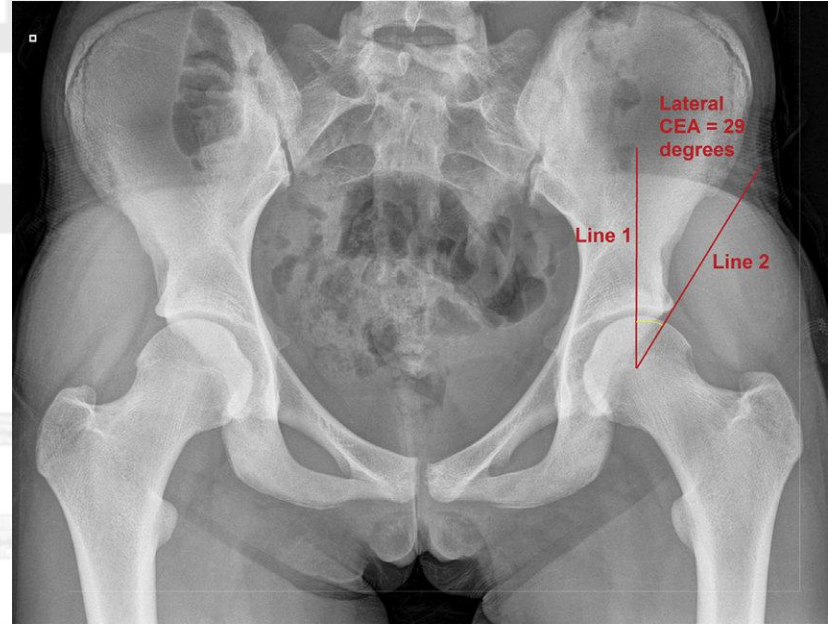
Lateral center edge angle (LCEA)

Center of femoral head to lateral extent of acetabular sourcil

<20 deg- acetabular dysplasia

15-20 deg- mild acetabular dysplasia

20-25 borderline dysplasia



Xray Evaluation

Acetabular inclination /
tonnis angle

>15 degrees = dysplasia,
10-15 borderline

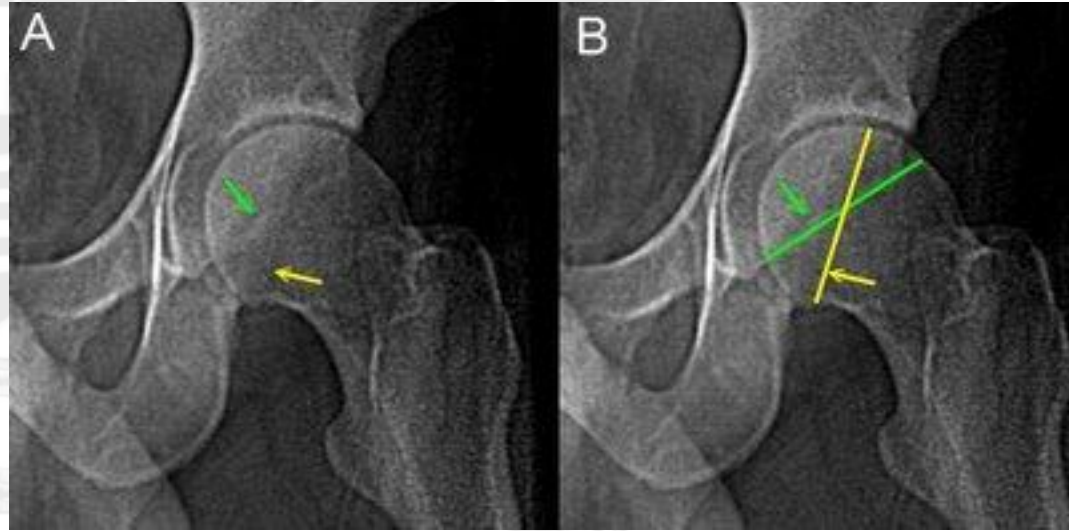


Xray Evaluation

Acetabular version

Pelvic rotation

Pelvic tilt



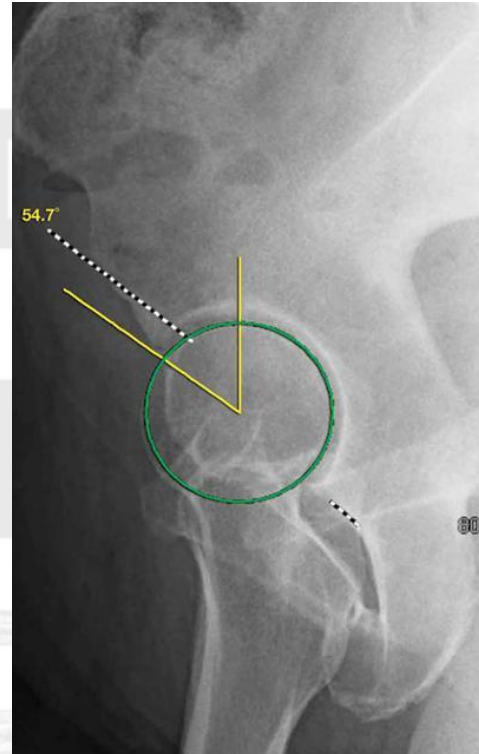
Xray evaluation

False profile radiograph-
measures anterior
acetabulum coverage

65 degrees of pelvic rotation

Anterior center edge angle

<20 indicates dysplasia



Xray Evaluation

45 degree dunn , frog
lateral

Alpha angle, head neck
offset ratio



Advanced Imaging

MRA-identify morphology of acetabular labrum + degree of hypertrophy



Managing hip dysplasia

LCEA <20deg

Correction of acetabular dysplasia through acetabular reorientation

Ganz- 2988- a new bernese POA- cuts the ischium, pubis, ilium, + posterior column

PAO- multiple techniques- rectus sparing techniques
Lateral overcoverage > can lead to FAI + ROM limitations



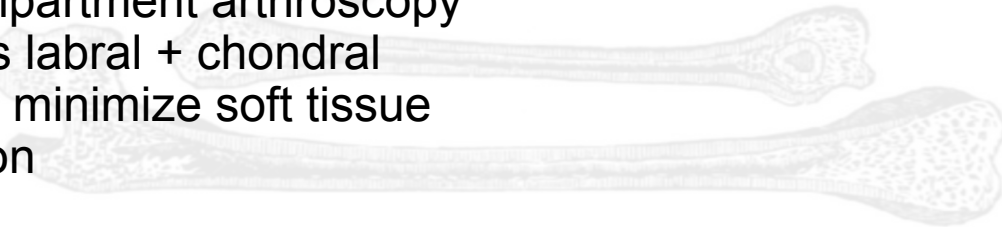
Managing hip dysplasia

Hip arthroscopy

w/ labral repair and capsular plication- can lead to failure rate of 18%

Hip arthroscopy + PAO- may optimize outcome of PAO if hip pathology present

Central compartment arthroscopy can address labral + chondral pathology + minimize soft tissue extravasation



Inferior outcomes after PAO

Advanced articular cartilage damage

Post PAO LCEA <30 degrees or >40 degrees assoc w/ worse outcomes

Post- pao FAI

Post PAO ROM of 90deg hip flexion + 15 degree IRF is satisfactory



Managing Borderline dysplasia

LCEA - 20-25 degrees

Borderline dysplasia is very common, 3x as common as true acetab dysplasia

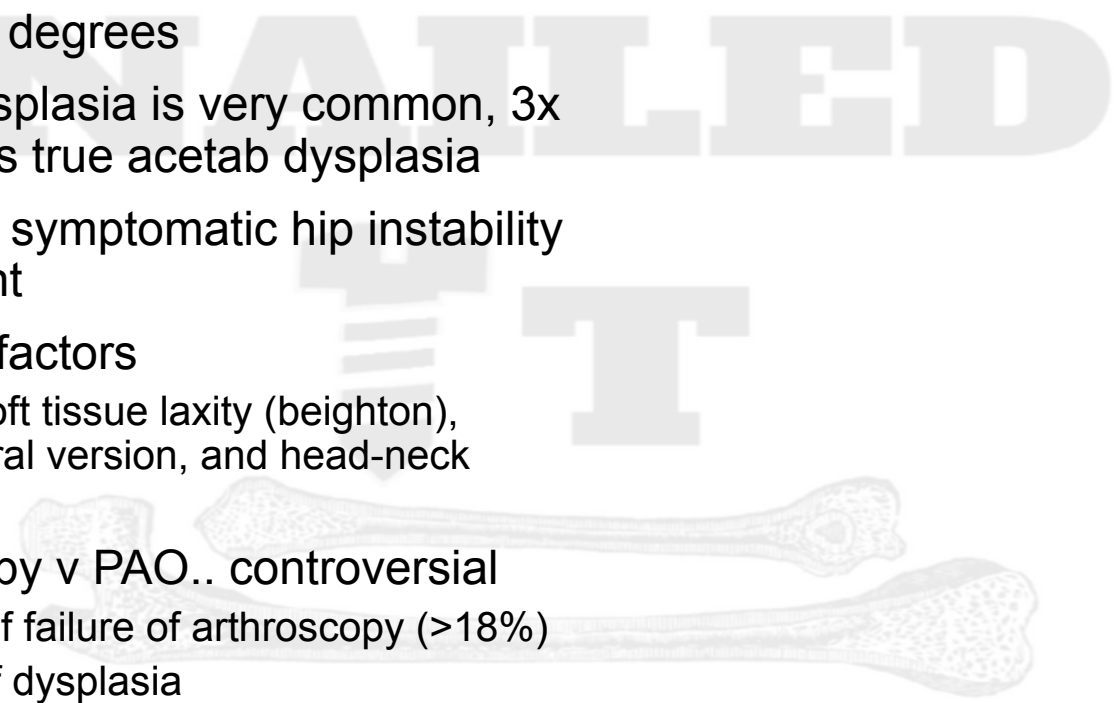
Pts may have symptomatic hip instability + impingement

Should know factors

Sex, age, soft tissue laxity (beighton), ROM, femoral version, and head-neck morphology

Hip arthroscopy v PAO.. controversial

High rates of failure of arthroscopy (>18%) in setting of dysplasia



Atraumatic hip instability

Tx: arthroscopic capsular plication

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Thank you Dr. Al' Khafaji !

Sources:

