



Anterior Inferior Acetabular Horn Morphology: A Factor in Hip Instability

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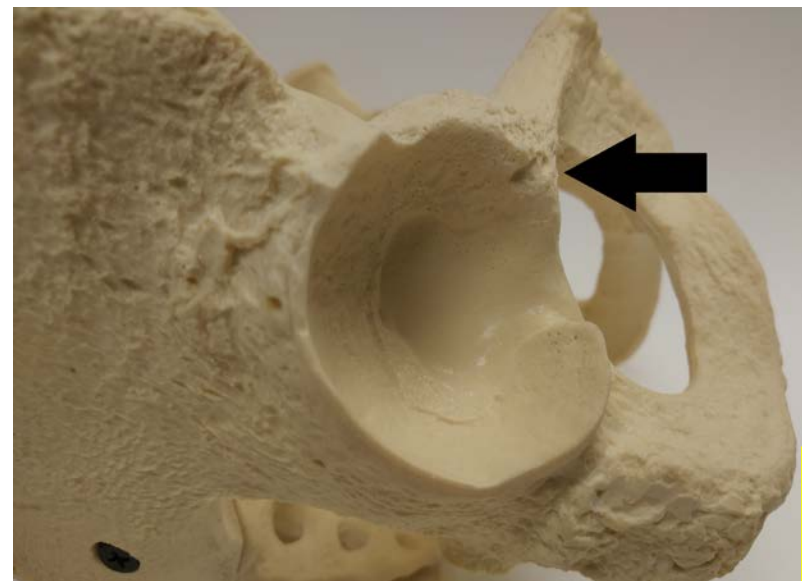
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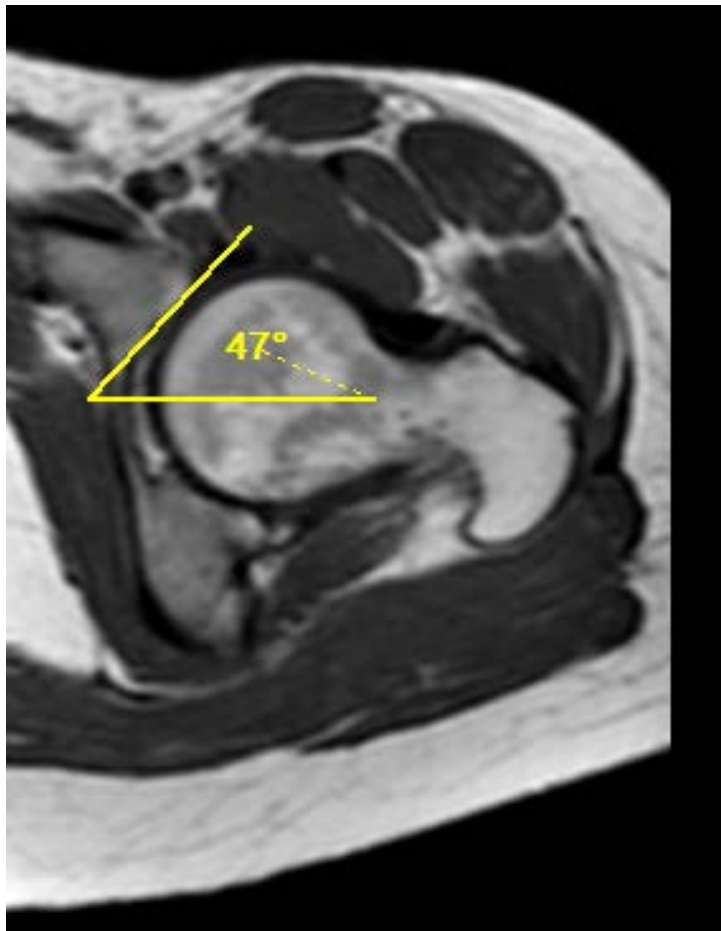


INTRODUCTION

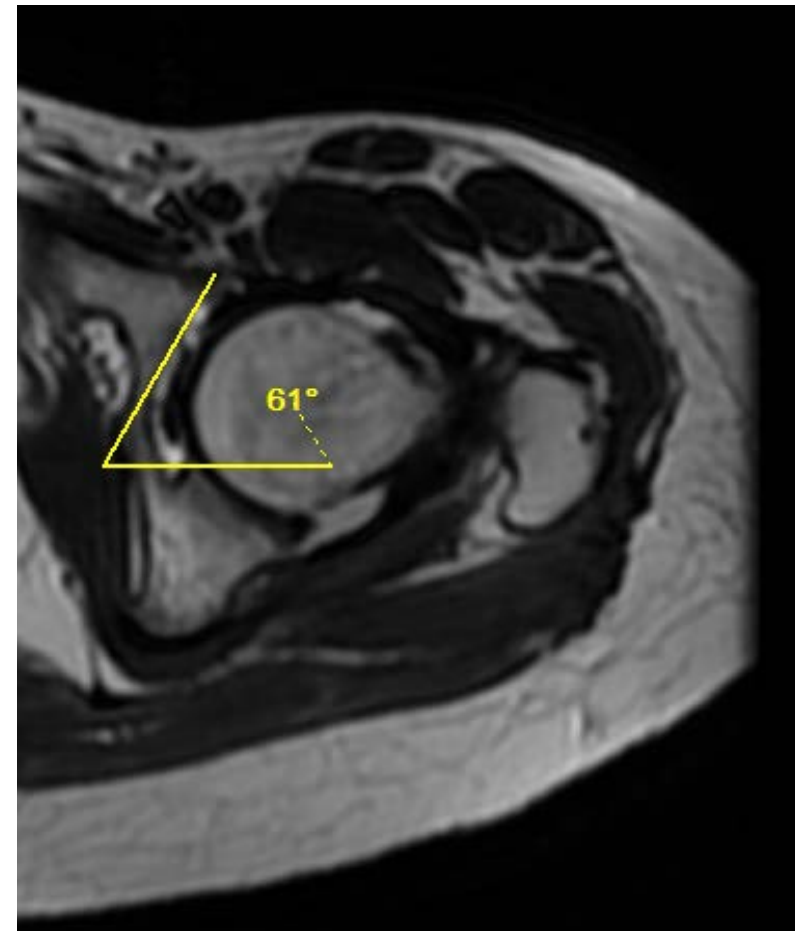
Anterior inferior acetabular insufficiency has been described as an osseous risk factor for hip instability. Previously, this type of insufficiency has been qualitatively described on AP radiograph and correlated with clinical and surgical findings. The shape of the anterior horn of the acetabulum can be examined and measured on magnetic resonance imaging (MRI). The purpose of this study is to determine the association between the angle of the anterior horn of the acetabulum and anterior inferior hip instability (AIHI).



Arrow: Right Anterior Horn



A. Normal AHA
B. Increased AHA



METHODS

A retrospective analysis of 200 consecutive hip arthroscopy cases was completed after informed consent and institutional review board approval were obtained. 42 hips were identified AIHI. Stability was determined intraoperatively with a dynamic test placing the hip in deep flexion, abduction, and external rotation. Hip subluxation during this maneuver indicated anterior inferior hip instability. A control group of 22 stable non-inferiorly dysplastic hips confirmed intraoperatively were used for comparison.

RESULTS

Inter/Intra-observer ICC's for the MRI measurement were between 0.907 and 0.953. A statistically significant difference in AHA was found between the stable ($59.5^\circ \pm 8.0^\circ$, range= 45° to 77°) and unstable ($52.9^\circ \pm 5.8^\circ$, range= 41° to 69°) groups. There were no differences in groups for Femoral Version or Acetabular Version.

SUMMARY

The study contributes to the understanding of atraumatic hip instability and the various pathomechanisms by which instability can develop. Understanding the contributing factors to hip instability will allow for better decision making in its diagnosis and treatment.

CONCLUSION

A significant difference in the AHA of patients with anterior inferior hip instability and those with stable hips was identified. Assessment of this angle on MRI can aid in identification of patients with AIHI.

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