

Presence of acetabular dysplasia increases risk for malpositioning of the acetabular component in primary hip arthroplasty

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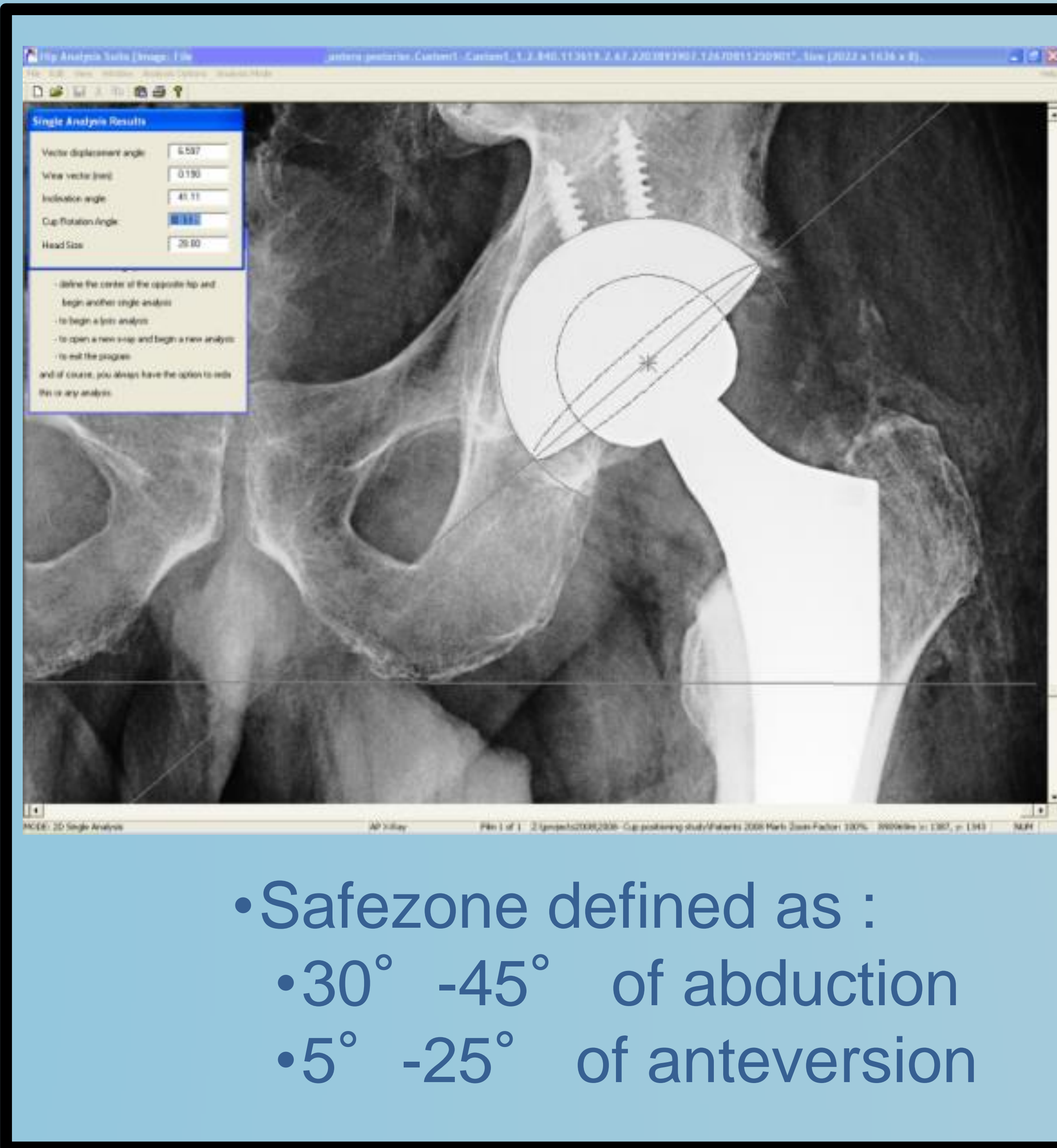
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Background

- Correct positioning of the acetabular cup is important for long term survival of primary THA
- Persistent acetabular dysplasia (AD) following PAO have been hypothesized to increase risk for malpositioning of the cup
- The aim of this study was to investigate if AD is an independent risk factor for malpositioning of the acetabular component in primary THA.

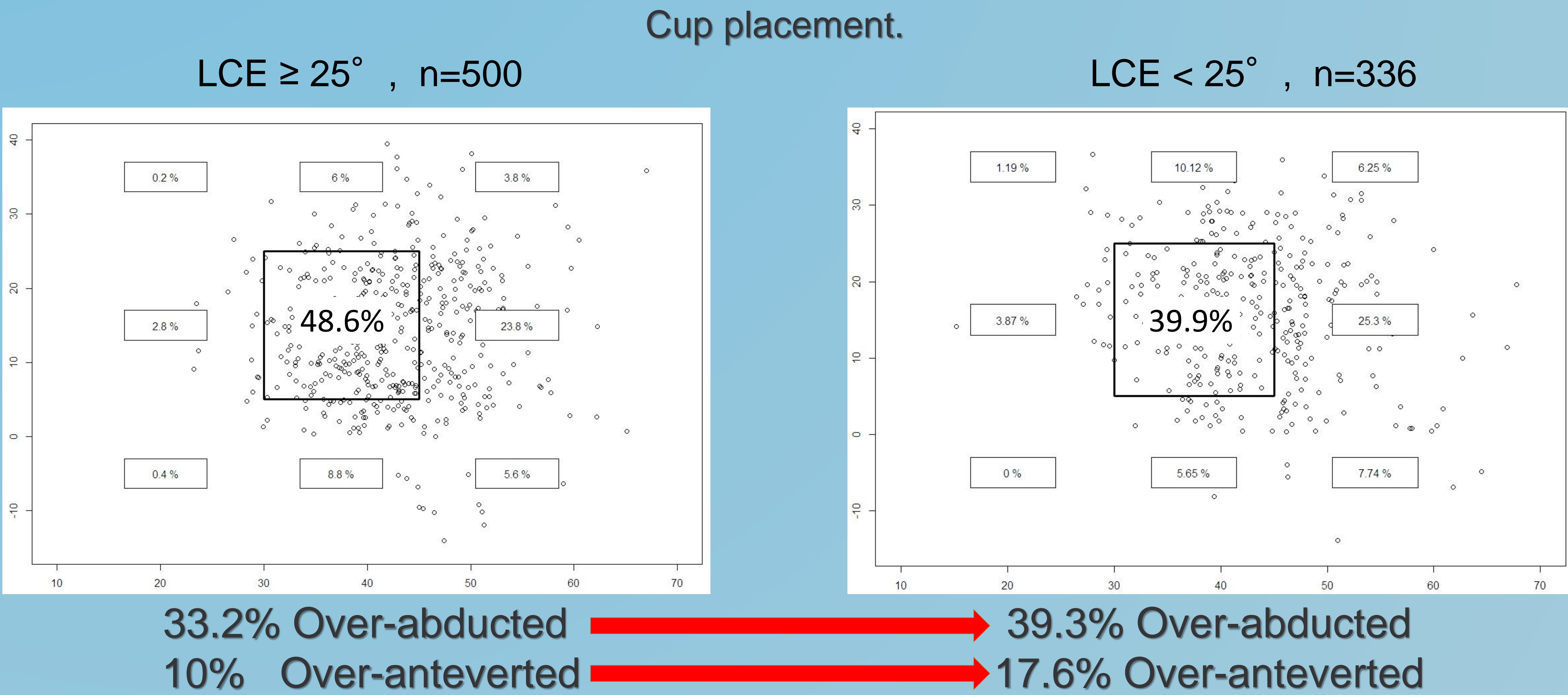
Material and Methods

- Multicenter study. 17 centers across US, Europe and Mexico
- 836 patients with primary THA with pre- and post operative AP pelvis images
- Registers parameters included: age, gender, BMI, approach, cup size, liner type and Joint Space Width (JSW) and LCE Angle.
- AD defined as LCE<25°
- Cup position determined using Martell



- Safezone defined as :
 - 30° -45° of abduction
 - 5° -25° of anteversion

Results



| | | Adjusted OR (95%CI) |
|----------------|-----------------------------------|---------------------|
| Approach | Anterolateral versus Anterior | 2.32 (1.29 - 4.17) |
| | Direct Lateral versus Anterior | 4.13 (2.19 - 7.82) |
| | Posterior Lateral versus Anterior | 2.07 (1.25 - 3.42) |
| AD (LCE angle) | LCE < 25° versus LCE >= 25° | 1.49 (1.11 - 1.99) |
| OA (JSW) | JSW > 0 versus JSW = 0 | 1.51 (1.09 - 2.1) |

Conclusion

AD, defined as LCE angle < 25° is an independent risk factor for malpositioning of the acetabular cup during primary THA. JSW>0 and surgical approach other than anterior are also risk factors for malpositioning of the acetabular cup during primary THA.

Discussion

LCE angle is easily measured on preoperative radiographs. Surgeons should be aware of risk factors for malpositioning of the acetabular cup in primary THA, and take special care when inserting the cup in patients with AD.

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