Safe Angle for Suture Anchor Insertion During Acetabular Labral Repair

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PURPOSE OF THE STUDY

- To identify the safe angle range for anchor insertion that will facilitate bony anchor placement without penetration into the hip joint with the labral insertion as the starting anchor insertion point.

MATERIALS AND METHODS

- Nine human cadaveric acetabulae were used to obtain angle measurements using Arthrex 3.0mm SutureTak, Arthrex 3.5mm PushLock, and S&N 3.7mm BioRaptor.
- The minimal angle was identified that avoided violating articular cartilage; the maximal angle avoided penetration of the acetabular wall.
- Angles were measured perpendicular to the acetabular face (line through the labral insertions at the anterior and posterior acetabulum).

RESULTS

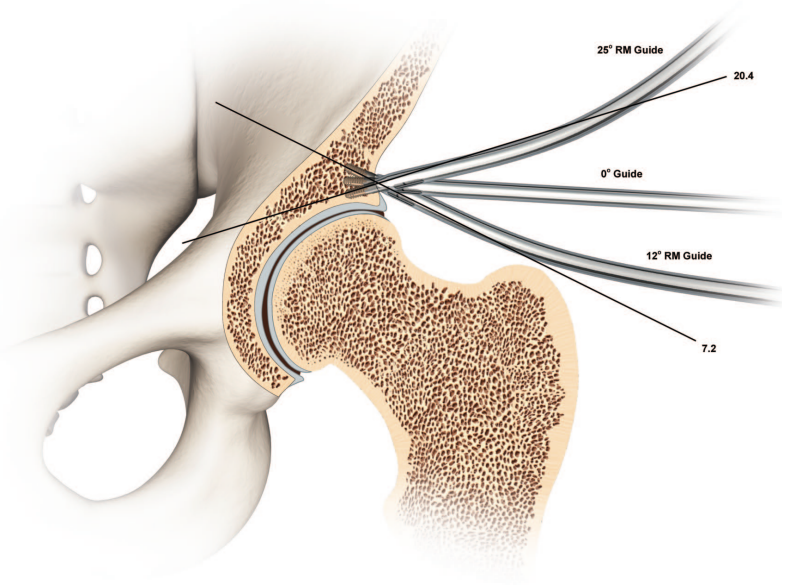
- The average maximal angle (to avoid violating articular cartilage) was 20.4°. The average minimal angle (to avoid penetration of the wall) was -7.2°.
- The smaller the anchor, the greater the safe angle window (the greater the room for error). "Safe angle" in this article is the size of the safe angle window (20.4 +7.2 = 27.6). It has nothing to do with the angle of drill insertion.

CONCLUSIONS

- Recommended target angle: 10°.

KEY TAKE-AWAYS

- In the final paragraph the authors state: "Our measured angles, obtained in vitro, may be difficult to appreciate and use intra-operatively, given the soft tissue and bony restrictions inherent in hip arthroscopy." Similarly, Byrd has stated that the constrained ball-and-socket structure and dense surrounding soft-tissue make the hip especially susceptible to iatrogenic injury during arthroscopy. [1] **As the figure shows, the FLEX System can help the surgeon overcome these obstacles in order to more easily achieve a safe angle of insertion and have more leeway within that safe angle for arthroscopic acetabular labral repair.**



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References:

1. Byrd, JWT, Surgical Techniques: Hip Arthroscopy. JAAOS, 13:433-444, 2006.

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