Safety of Hip Anchor Insertion from the Mid-Anterior and Distal Anterolateral Portals with a Straight Drill Guide – A Cadaveric Study

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Disclosures

- **Ryan Degen, MD**
  - **I have no financial relationships to disclose**

Intro

- **Background:**
  - During arthroscopic labral refixation, suture anchors are typically inserted from either the mid-anterior (MA) portal or the distal anterolateral (DALA) portal, however, no studies have previously compared these techniques

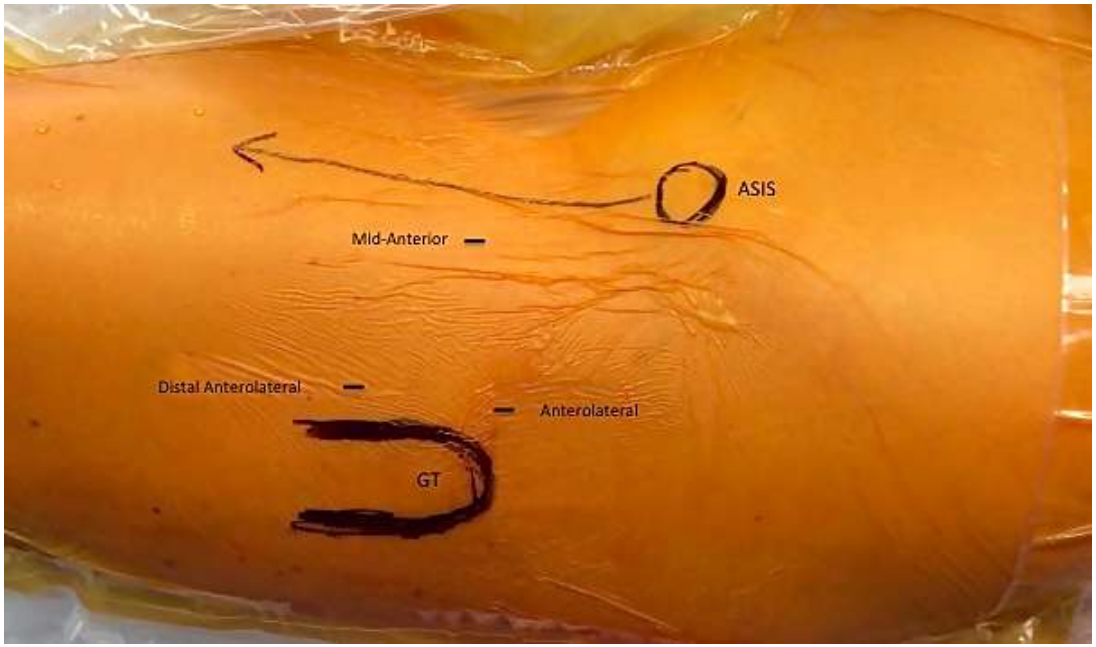


Figure 1. Arthroscopic Portal Locations

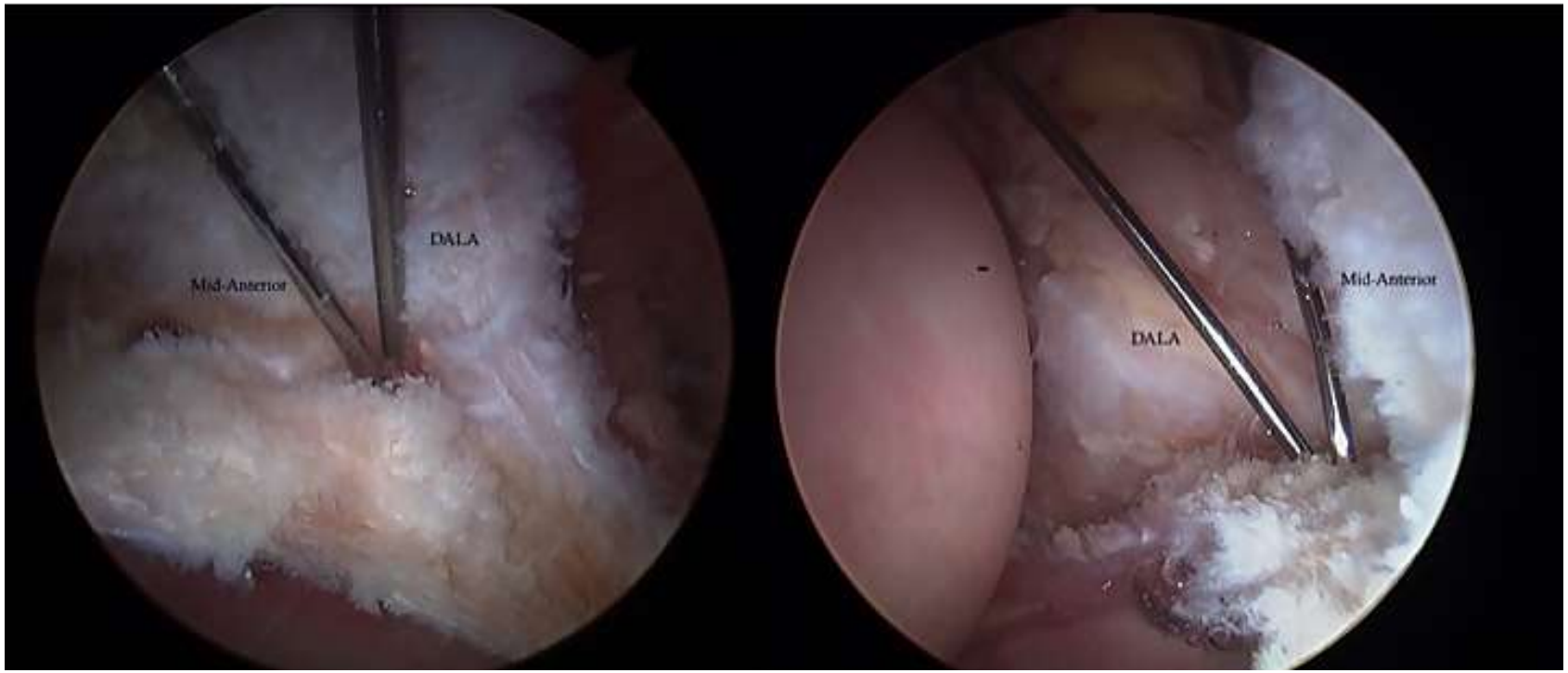
Intro

- **Purpose:**
  - To compare acetabular rim accessibility and associated complication rates of anchor insertion from these portals
- **Hypothesis:**
  - Rim access will be better from the DALA portal
  - Articular surface perforation will occur more commonly from the MA portal, while psoas tunnel perforation will occur more commonly from the DALA portal

Methods

- **Procedure**
  - Sixteen pelvic cadaver specimens (32 hips) were obtained and arthroscopy performed in the supine position
  - Anchors inserted at 9, 11, 12, 1, 2, 3 and 4 o'clock positions along the acetabular rim
    - Nomenclature based on right hip, where 9 o'clock is posterior, 3 o'clock is anterior
    - All anchors inserted from single portal per side
  - Allocation ensured an equal distribution of laterality between groups
- **Data Collection**
  - Following anchor insertion, specimens underwent CT scan and dissection for further evaluation

Results



12 o’clock

2 o’clock

Figure 2. Representative arthroscopic images demonstrating divergence in anchor trajectories at 12 and 2 o’clock from the Mid-Anterior and DALA portals

Results

- **Rim Accessibility**
  - Rim accessibility was similar between groups, although access to the 9 o'clock position was slightly more difficult from the MA portal, while access to the 4 o'clock position was more difficult from the DALA portal
  - However, rates of successful anchor insertion did not significantly differ at each location ($p \geq 0.1012$).

Results

- **Articular Perforation**
  - Articular surface perforation occurred in 4.47% of all anchor insertion attempts, most commonly at the 3 o'clock position (p=0.0242).
  - From the MA portal, 4% (4/100) perforated the joint, compared to 4.95% (5/101) from the DALA portal (p=1.0).
  - Further, there were no significant differences in perforation rates at each location between techniques (p=1.0)

Results

- **Psoas Tunnel Perforation**
  - Psoas tunnel perforation occurred in 7.7% of all anchor insertion attempts between 2 and 4 o'clock, with equal rates at each location ($p \geq 0.6606$).
  - From the MA portal, 4.16% (2/48) perforated the psoas tunnel compared with 11.67% (5/43) from the DALA portal ($p \geq 0.2486$).
  - Further, there were no significant differences at each location between techniques ($p \geq 0.4839$).

Discussion

- **Conclusion**
  - Anchor insertion from either the MA or DALA portal appears to confer similar rim access and articular surface or psoas tunnel perforation rates, with a cumulative rate of 4.47% and 7.7%, respectively.
  - Rates of perforation did not differ between portals and were not associated with acetabular or femoral version or LCEA.

Discussion

- **Clinical Relevance**
  - Caution should be employed when inserting anchors for labral refixation, particularly in anterior and medial locations (2-4 o'clock), as articular and psoas tunnel perforation may occur at a rate higher than previously anticipated.
  - Portal selection does not appear to influence these outcomes.

Thank You