

European Anterior Hip Meeting (EAHM)

Transitioning From the Posterior Approach to a Minimally Invasive Direct Anterior Approach Total Hip Arthroplasty: Early Radiographic Outcomes

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Introduction / Purpose

- The steep learning curve is a concern for those looking to adopt the DAA THA
 - More so with on-table MIS DAA
- Concern that accurate component placement may be compromised
 - Change in patient position from lateral to supine
 - Using table impedes leg length assessment
- The use of intra-operative fluoroscopy can help to minimise risk of malpositioning/LLD
- Purpose: Can surgeons trained in the posterior approach achieve accurate component positioning when transitioning to AMIS DAA with intraoperative fluoroscopy — even during their learning curve?



Methods

STUDY DESIGN

- Retrospective review of 200 consecutive primary THA
- Two PA-trained surgeons transitioning to AMIS-DAA
- 100 posterior → 100 anterior (consecutive)
- Calibrated post-op AP pelvic radiographs (TraumaCad)
- **Measured:**
 - leg length**
 - cup inclination**
 - cup anteversion**

Posterior (PA)

FAMILIAR APPROACH

- Lateral decubitus, standard table
- Conventional posterior approach
- Cup guided by transverse acetabular ligament + mechanical alignment guide
- Templated neck cut (lesser trochanter)
- On table leg length assessment

✗ No intraoperative imaging

Anterior (AMIS-DAA)

NEW APPROACH

- Supine on traction table
- Bikini / longitudinal incision DAA
- Fluoroscopy used to plan neck cut, ream, size implant, and component positioning
- Live image guidance for leg length

✓ Intraoperative fluoroscopy



Results

	DAA	PA	p-value
Mean Error [Sdev] (mm)	-1.1 [3.8]	0.6 [4.1]	0.002
Mean RMS Error [Sdev] (mm)	3.2 [2.4]	3.0 [2.7]	0.668
% < 5mm error	75%	78%	0.617
% >= 5mm error	25%	22%	0.617
% >= 10mm error	2%	4%	0.407

Leg Length

	DAA	PA	p-value
Mean Inclination [Sdev] (deg)	41.4 [6.3]	44.7 [5.0]	0.000
Mean RMS Error [Sdev] (deg)	5.0 [4.0]	5.8 [5.3]	0.208
% < 5deg error	59%	51%	0.256
% <= 35 deg	14%	4%	0.013
% <= 30 deg	3%	1%	0.621
% >= 45 deg	27%	45%	0.008
% >= 50 deg	8%	17%	0.050

Inclination

	DAA	PA	p-value
Mean Error [Sdev] (deg)	20.4 [5.4]	19.5 [7.1]	0.347
Mean RMS Error [Sdev] (deg)	4.0 [3.6]	5.6 [4.7]	0.007
% < 5deg error	75%	51%	0.000
% <= 10deg	1%	8%	0.017
% <= 15deg	11%	27%	0.004
% >= 25deg	18%	22%	0.480
% >= 30deg	6%	10%	0.287

Anteversion



Conclusion

Leg Length

- No difference between groups

Inclination

- DAA group closer to target with fewer outliers

Anteversion

- DAA group had reduced variation and fewer outliers towards retroversion

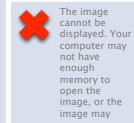
Component positioning and leg length accuracy can be maintained with fluoroscopic assistance during the transition from posterior approach to DAA!



Contact Details



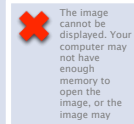
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