The Dancers Hip: The Hyperflexible Athlete: Anatomy & Arthroscopic Clinical Outcomes

Christopher M Larson MD, James R Ross MD, M Russell Giveans PhD, Rebecca M Stone MS, ATC, Nicole M Ramos BS, and Asheesh Bedi MD
Disclosures

Christopher M Larson, MD
I have financial relationships with the following companies:
   Editorial Board: Arthroscopy
   Consultant: Smith & Nephew and A3 surgical
   Stock Options: A3 Surgical

Asheesh Bedi, MD
I have financial relationships with the following companies:
   Consultant: Smith & Nephew
   Stock Options: A3 Surgical
   Editorial Board: Journal of Shoulder and Elbow Surgery
   Board member/committee appointments for a society: AOSSM

M Russell Giveans PhD
I have financial relationships with the following companies
   Consultant: Ortholink Pty Ltd

James R Ross MD, Rebecca M Stone MS, ATC, Nicole M Ramos BS,
I have no financial relationships to disclose.
Introduction

• Hip pain in dancers can be very challenging secondary to the complex demands placed on their hips

• Very little literature regarding outcomes after hip arthroscopy in dancers
Methods

• Retrospectively reviewed 77 hips in 63 competitive dancers who underwent hip arthroscopy by the senior author (CML)
  – Mean age of 21.0 years (range 14 - 58 years)

• Types of Dance
  – 54 Studio dance (Ballet, Jazz, Tap, Lyrical, Contemporary)
  – 42 High kick dance (Dance line)

• Pre/post-operative function were evaluated prospectively
  – Modified Harris Hip Score (MHHS)
  – SF-12 scoring
  – and pain on a Visual Analog Score (VAS)
Pre-operative Morphology

- Cam-type FAI (99%) (Mostly distal offset / sclerosis)
- Pincer-type FAI (51%)
- Subspine impingement (86%)
- Borderline dysplasia (9%) and Dysplasia (10%)
- Normal (5%)

- Mean pre-operative LCE angle: 29.9 deg
- Mean alpha angle: 56.8 deg (AP) / 65.3 deg (Lateral)
- Mean offset ratio was 0.16

- Positive Cross-over (COS)/Posterior Wall (PW) sign present in 60% of hips
- Mean Tonnis angle: 3.2 deg
Results

• Mean follow-up: 20.0 months
• Mean outcome improvements
  – **MHHS: 23 points**; improved from a mean 60.5 points, preoperatively, to 83.4 points at most recent f/u (p<0.01)
  – **SF-12: 10.3 points**
  – **VAS: 3.7 points** (p<.01 for each)
• Mean lateral alpha angle improved from 65.3 deg to 43.0 deg (p<0.01)
• Mean offset ratio improved from .16 to .20 after cam decompression (p<0.01).
• A positive COS was present in 22% of hips post-operatively compared to 60% preoperatively.
• No significant changes post-operatively for Tonnis angle, AP alpha angle, and prevalence of a PW sign.
Results

• 89% returned to Dance
  – 67% returned to pre-injury level of competitive Dance

• 10% were unable to return or retired from competitive dance
Procedures Performed

- 87% labral repairs
- 10% labral debridements
- 100% femoral resections (distal decompression)
- 57% rim resections
- 86% subspine decompressions
- 67% capsular plications
- 4% psoas tenotomies (early on)

- No significant differences in outcomes based on diagnosis or procedures performed in this cohort (p>0.05).
Conclusions

- Hip pain in dancers can be challenging secondary to extreme hip ROM driven impingement / instability with resultant high demands placed on the hips.

- An arthroscopic approach addressing hip joint pathology including subtle morphologic and physiologic cam and pincer impingement (Femoral resections extending to the Greater Trochanter) and highly prevalent subspine impingement and capsular laxity led to significantly improved outcomes for competitive dancers.