ABC’s in the OR: Patient Set-up, Positioning, Central and Peripheral Compartment Access and Portal Placement.

Michael Banffy, MD
Kerlan Jobe Orthopaedic Clinic
Hip Arthroscopy – “Learning Curve”

- Hip Capsule (Y Ligament of Bigalow)
  - Tough
  - Limits Movement

- Narrow Joint Space
  - Difficult entry of scope and instruments
  - Potential for iatrogenic injury to intra-articular structures

- OR Setup
  - Complicated Set Up
  - Traction, X-ray, 70 degree arthroscope
Hip Arthroscopy – Essential Instruments

- Hip Arthroscopy Distraction Table/Fracture Table
  - Supine or Lateral Setup
Hip Arthroscopy – Essential Instruments

- 70 degree scope
- Banana Blade
- 50 degree heat ablation
- Hip Arthroscopy Instrument Tray
- Cannulated Obturator System
Hip Arthroscopy – Essential Instruments

- Arthroscopic Pump
- Hip Length Shavers
- Hip Length Cannulas
Hip Arthroscopy – OR Setup

- **Anesthesia**
  - General Anesthesia
  - Regional Anesthesia
    - Fascia Iliaca Nerve Block
    - Lumbar Plexus Block

- **Padding is Key**
Hip Arthroscopy – Patient Positioning

- Patient positioned supine
- Lateralized perineal post >12cm diameter
  - Adds slight transverse component to the traction vector
Hip Arthroscopy – Leg Positions

- Contralateral leg is abducted to provide adequate room for C Arm and counter traction is applied

- Operative leg is positioned in slight flexion (20 degrees) and internal rotation, neutral adduction
  - Relaxes anterior capsule, makes femoral neck parallel to floor
  - Remember sciatic nerve
Hip Arthroscopy – Applying Traction

- Venting hip greatly facilitates obtaining proper traction on the hip
- Prefer obtaining traction prior to prepping/draping incase manipulation is required
Hip Arthroscopy – Venting Technique

- Alcohol Prep
- 20 Guage Spinal Needle
- Anterolateral Portal Site
- Introduce Air into joint to release negative pressure seal
- Confirm fluroscopically
- Apply minimum of 10mm traction
- Limit traction time <2hrs
Hip Arthroscopy - Draping
Hip Arthroscopy - Portal Placement

ASIS
AL
ANT
PL
DALA
MA
FL
Hip Arthroscopy - Portal Placement

- ASIS
- AL
- ANT MA
- DALA
- PL
- MA
- FL
- DALA
- AL
- FL
Hip Arthroscopy - Portal Placement

- ASIS
- AL
- ANT MA
- PL
- DALA
- MA
- AL
- FL
Hip Arthroscopy- Portal Placement
Anterolateral Portal

- **Spinal Needle**
  - 6 inch 17g
  - Use fluro to confirm
  - Tactile Feel Paramount
  - +/- Fluid for further distension

- **Cannulated Wire**
- **5.0mm canulla**

- **Placement of 70 degree scope**
  - Visualize "Anterior Triangle"

- **Establish Mid-Anterior Portal via direct visualization**
Anterolateral Portal

- Penetrates the gluteus medius prior to entering the capsule
- Superior gluteal nerve lies at an average of 4.4 cm superior to this portal
Anterior/Midanterior Portal

- Anterior portal penetrates the muscle belly of the sartorius and rectus femoris
- Midanterior is generally lateral to the sartorius and through the rectus
- Lateral Femoral Cutaneous Nerve is at risk
- Superficial Incision with blunt dissection
Posterolateral Portal

- Penetrates both the gluteus medius and gluteus minimus
- Superior and anterior to piriformis
- 2.9cm away from sciatic
Interportal Capsulotomy

- Once anterolateral and midanterior portals are established, place banana blade through the canula to perform a capsulotomy
- Can extend anteriorly and posteriorly if needed
- Continue with radiofrequency ablation to complete capsulotomy
Diagnostic Arthroscopy

- Maintain Portals
  - Sleds/Switching Sticks

- In muscular patients where traction is difficult, can begin in the peripheral compartment
Systematic Arthroscopic Exam of the Hip

- Anterolateral Portal
  - Acetabular Fossa
  - Posteromedial acetabulum/labrum
  - Anterior Triangle
  - Anterior Labrum
  - Posterolateral Labrum
  - Posterior Capsule
  - Femoral Head

- Anterior Portal
  - Ligamentum Teres
  - Posterior Transverse Ligament
  - Anterior Transverse Ligament
  - Superior Acetabulum
  - Lateral Labrum
  - Posterolateral Capsule
Systematic Arthroscopic Exam of the Hip

- Posterolateral Portal
  - Posterior gutter
  - Weight-bearing acetabulum
  - Anterolateral labrum
  - Femoral Head

- Peripheral Compartment
  - Medial femoral neck
  - Medial femoral head
  - Anterior femoral head
  - Lateral femoral head
  - Lateral femoral neck
  - Anterior femoral neck
Sequence of Events

- Apply Traction
- Establish two portals
- Capsulotomy
- Diagnostic Arthroscopy
- Elevate capsule anteriorly and laterally
- Expose labral Tear
- Debride as needed
- Acetabuloplasty
- Labral repair
- Traction down
- Peripheral compartment
  - Verify suction seal
- Femoral osteoplasty
Thank You