Meniscal Pathology: New Treatment Options

Roy Majors, MD
As a board member it is my duty to inform you.

It is time for **ALL** athletic trainers in the state of NC to renew their licenses for 2011.

Please find us on line at [www.ncbate.org](http://www.ncbate.org) to renew.

---

Save healthy tissue
- It makes sense
- It can be done
- It is best for the patient

---

**Fairbank** 1948
**Tapper** 1969
**McGinty** 1977
**Weiss** 1989
**Heckman** 1994
**Burks** 1997
**Roos** 2000
**Messner** 2001

---

**History**
- Patient age
- Traumatic verses atraumatic
- Previous surgery

---

**History**
- Patient age
- Traumatic verses atraumatic
- Previous surgery
ALIGNMENT

- Varus
- Valgus
- Most important with Meniscal Transplants

X-RAYS

- Help to assess degree of arthritis
- Standing AP and PA 45% views

MRI

- Tear pattern can be assessed
- Presence of large Grade II signal correlates to poor vascularity

ANATOMY

- Vascularity
- Histology
- Biomechanics

VASCULARITY

- Red zone
- Gray zone
- White zone

HISTOLOGY

- Majority of fibers run in a radial (circular) pattern
- Best fixation is a vertical loop around radial fibers
REPAIR TECHNIQUE CHOISES
- Rigid implants
- Inside out suture repair
- Outside in suture repair
- All inside suture repair

RIGID IMPLANTS
- Quick and easy
- Can reach posterior horn
- Can have high complication rate
- Most require ideal tissue
- Fixation via buttress or barbed friction

BUTTRESS WITH SEMI SUTURE-LOOP
- Not as quick as barbed but quick
- Superior Strength
- Vertical or Horizontal
- Nothing rigid on articular surface
- Can tighten

SEMI SUTURE-LOOP
- Vertical or Horizontal
- Capsular or Central
- Strong on loop side
- Unproven on buttress side

LETS REPAIR

MENISCAL TEAR
- Mobile fragment
- Red/grey zone
- Healthy tissue
- Tight knee
INFERIOR SUTURE
- Inferior suture gives best anatomic reduction
- Vertical suture
- Central semi suture-loop
- Top suture can help expose under surface

TIGHTEN SUTURE
- Vertical suture
- Central semi suture-loop
- Counter tension to inferior suture

REPAIR COMPLETE
- Superior & inferior for counter tension
- Vertical for best grip
- Inferior sutures most important

REPAIR 18 MONTHS OUT
- Learn exposure to posterior joint line
- Not all repairs heal
- Know pt Hx & Exam
- Know several techniques
- Suture-loop is best

MENISCAL TRANSPLANT
- **Who?**
  - S/P subtotal menisectomy
  - Need neutral alignment
  - Need stable knee

MENISCAL TRANSPLANT
- **Why?**
  - To decrease symptoms of pain & swelling
  - To decrease/prevent progression of arthritis
MENISCAL TRANSPLANT

- **When?**
  - Before significant degenerative changes occur
  - Grade II or small areas of grade III changes ok

TECHNIQUE

- Bone trough
- Bone plugs
- Free graft

PREPERATION

- Remove remaining meniscus
- Can leave anterior horn
- Drill posterior tunnel

IMPLANTATION

- Pass posterior horn to posterior tunnel
- Pass anterior horn of graft under residual anterior horn of pt

FIXATION

- Barbed fixation poor in thin capsule
- Buttress fixation works in capsule
- Suture-loop is best

1 YEAR POST OP

- Long term studies show
  - Return to full activities
  - Decreased pain
  - Decreased progression of Arthritis compared to menisectomy
POST OP REHAB

- Similar to ACL
- Wt baring to toleration
- Push for full extension early

POST OP REHAB

- Full flexion OK but not Wt baring flex beyond 90 degrees
- Closed chain Quad PREs 0 to 60 degrees
- Aggressive sports in 4 to 5 months

REMEMBER

- Who ever said ‘for every action there is an equal an opposite reaction’ never had to see an orthopedist