Management of Meniscal Cysts
Indications and Techniques

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Val d’Isere 2014

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Australians

- Speak English Badly
- Talk too quickly
- Use jargon, slang and vernacular
- Weird accent
- Need interpreters

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Meniscal Cysts

- Background/Incidence
- Cause/Pathomechanics
- Imaging
- Arthroscopic management
- When to perform open surgery
- Unusual case

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Meniscal Cysts-Differential

- Not all joint line swelling is a meniscal cyst
- Potential other causes of joint line swelling
  - Proximal tibiofibular ganglion
  - Meniscal fragments
  - True knee joint ganglion
  - Soft tissue tumours
  - Benign-Synovial chondromatosus
  - Malignant-synovial sarcoma
- MRI mandatory
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MRI mandatory

Meniscal Cysts-Incidence

Campbell et al AJR 2001-2572 Knee MRI

1402 meniscal tears—66% medial
109 meniscal cysts—66% medial

* Incidence of cyst with medial meniscal tear—7.8%
* Incidence of cyst with lateral meniscal tear—7.7%
* 98% had demonstrable connection to tear
* 90% horizontal cleavage

Meniscal Cysts-Aetiology

Three Theories

- Synovial cells congenitally or traumatically displaced
- Cystic degeneration after infection, trauma, haemorrhage
- Extrusion of synovial fluid thru meniscal tear—Barrie 1979

Meniscal Cysts-Aetiology

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Meniscal Cysts-Aetiology

Many reports and series of cystic menisci without tears

Cystic degeneration can be responsible-similar to wrist ganglion

Alters management

Meniscal Cysts-Pathomechanics

Barrie Pump Theory

- Meniscal tear-typically horizontal component
- Small amount of fluid trapped
- Normal knee kinematics pump

Meniscal Cysts-Pathomechanics

- Roll back pumps fluid
- Passes through weakest connecting fibres
- Cyst wall develops
- Tense with activity

Meniscal Cysts-Pathomechanics

- Bellows

Meniscal Cysts-Pathomechanics

- Is there a valve?
- I've never seen one like this
- Soft tissue that could partially trap fluid
- Normal kinematics pumps in
- No forces to pump fluid back to knee
- Resorption of water
Clinical Features
- Cystic swelling
- Size varies
- Undetectable to huge
- On or near joint line
- MRI usually shows connection

Arthroscopic Management
- Standard arthroscopic portals
- Systematically view the knee
- Probe the meniscus

Arthroscopic Management
- Debride meniscal tear
- Remove top and bottom leaves of horizontal cleavage tear
- Excise the pump—often all that needs to be done
- Probe and empty cyst palpable
- Patient concerns

MRI joint line ganglion and no meniscal tear
- Ultra Sound guided aspiration and corticosteroid injection
Arthroscopic Management - no meniscal tear
Fail to resolve with CS injection

- Can’t see obvious meniscal tear
- Needle cyst enter joint
- Probe in area of needle
- No meniscal tear - explore and excise swelling

Meniscal Cysts

Open Surgery
- No meniscal tear - ganglion
- Large cysts - cyst wall
- Big opening between cyst and joint - requires closure

Meniscal Cysts

Summary
- Usually but not always associated with meniscal tear
- Horizontal cleavage - pump
- MRI to confirm and rule out other causes
- Usually arthroscopy alone to treat
- Remove bellows
- Open surgery - huge cysts - true ganglia

Unusual Pump

- 69 year old male
- Rheumatoid arthritis
- 6 years post porous TKR
- Screwed base plate
- Large posteromedial swelling developed in past 3 months

Unusual Pump

- CT showed cyst
- Around tip of screw
- Likely joint fluid
- Pumped by polyethylene against base plate
- Screw track pathway
* Medial screws removed
* Unable to milk cyst into joint
* Curedetd screw pathway
* Holes filled low viscosity PMM
* Cyst left in situ
* Poly exchange

Unusual Pump

Clinical appearance at 6 weeks
Message-meniscal cysts
Remove the pump
Don’t always need to empty or excise cyst

Unusual Pump

Post op radiograph
Blocked connection

Unusual Pump

Thank You