

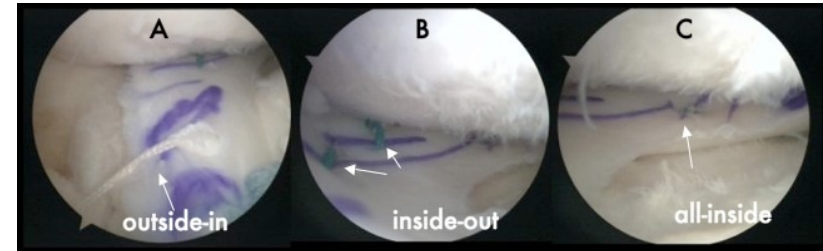


Meniscus Repair

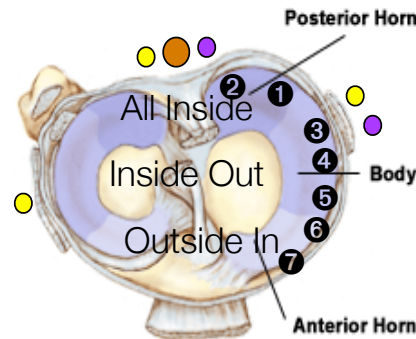
Technical Notes

Peter Verdonk, MD, PhD
from the Antwerp Orthopaedic Center, Monica Hospitals, Belgium.

Suture Types

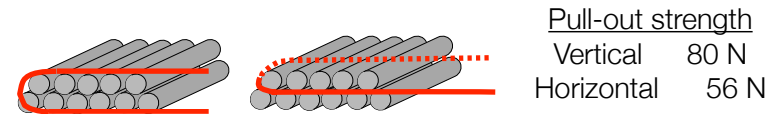


Which Technique Where?



LeadingMD.com © 2001

Suture Orientation



Pull-out strength
Vertical 80 N
Horizontal 56 N

Barber et al.: Arthroscopy 1999

longitudinal fiber orientation of menisci

Vertical suture = golden standard

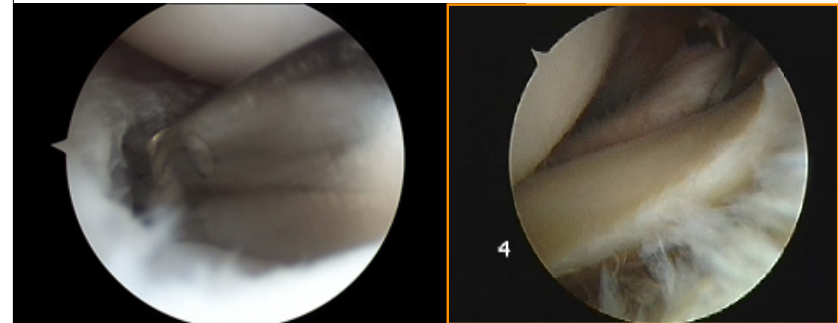
but i have to admit that I regularly use horizontal sutures.....

Surgical Repair Principles

- Preoperative planning
- Arthroscopic evaluation
- Freshen up the tear
- Stimulate healing
- Repair the meniscus
- Check stability

preparation is what counts!
the actual repair is easy...

Freshen up the tear



Stimulate Healing

Uchio, Arthroscopy 2003



1. diamant rasp



2. Shaver

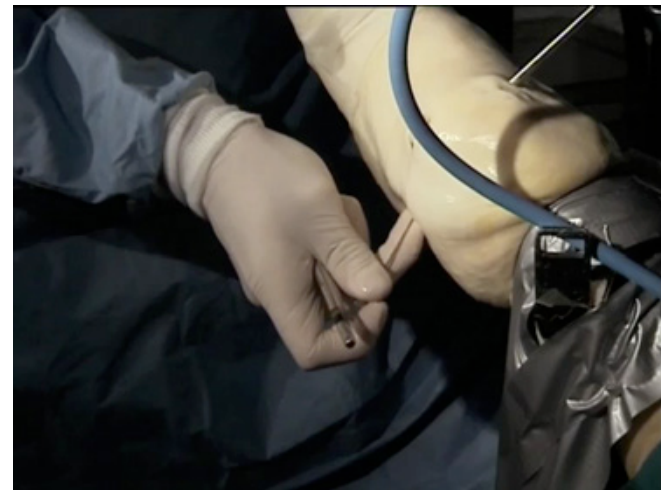


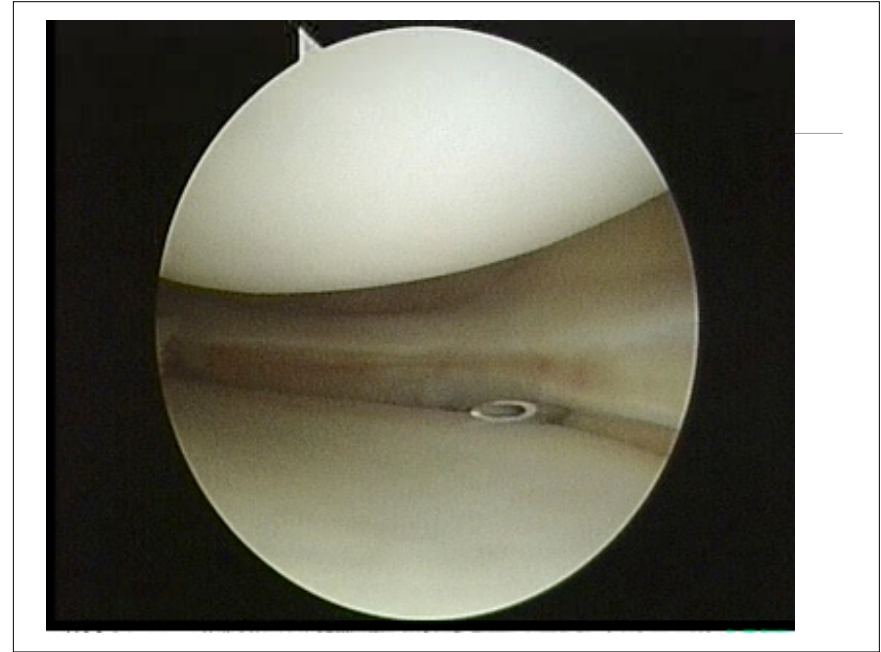
3. Needling (outside-in)



4. Steadman-Picks
(inside-out)

Opening up of tight medial compartment





Inside-out Sutures

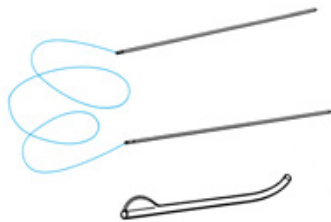
Equipment

- **Preloaded needles**

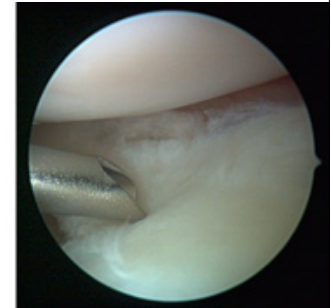
2.0 braided, non-absorbable

- **Specific cannulas
various flexion angles**

- **Retractor (spoon)**

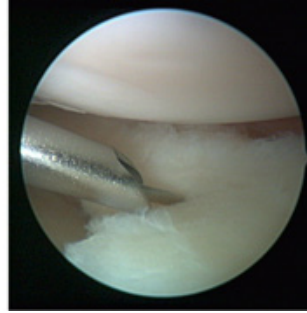
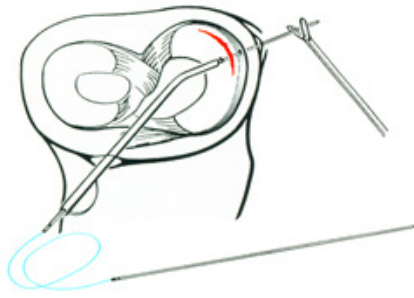


Inside out (1)



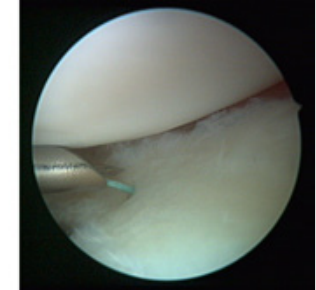
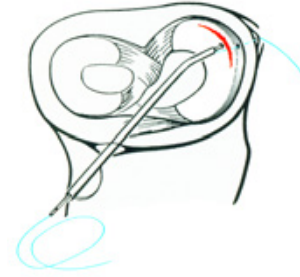
Introduction of curved cannula and reduction of the tear

Inside out (2)



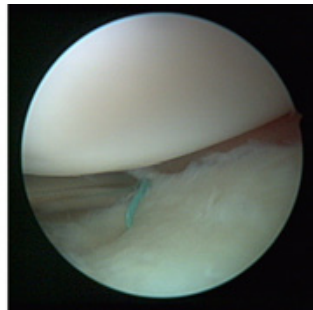
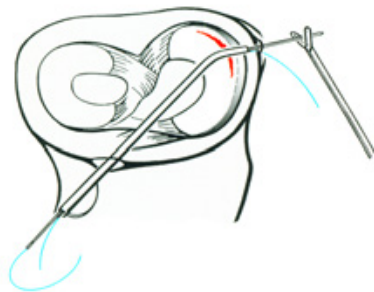
Passing a flexible needle through the cannula and retrieving outside the capsule

Inside out (3)



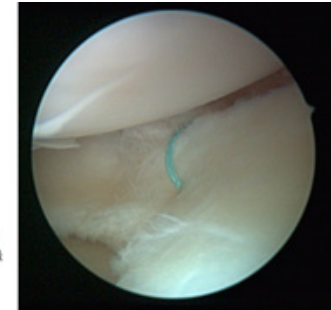
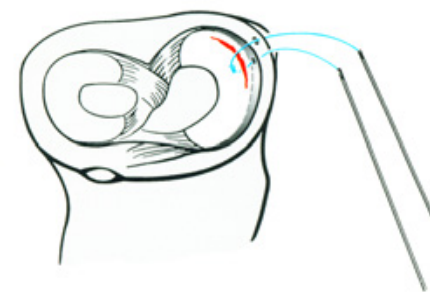
Passing another flexible needle through the cannula above the tear

Inside out (4)



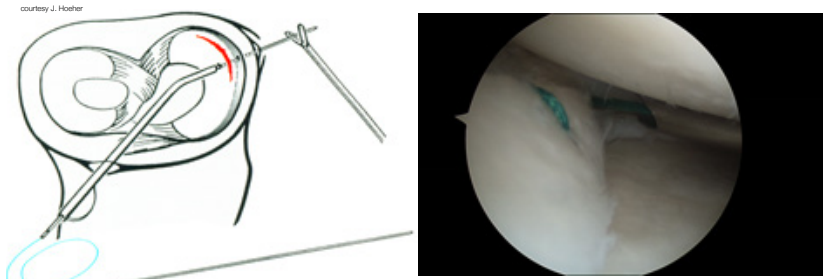
Needle is pushed forward until retrieved outside the capsule

Inside out (5)



Reduction of the lesion by pulling at both ends of the suture

Inside Out



Premounted flexible needle with ethibond 2/0 passed through the skin
I generally use a single cannulated system

Inside Out

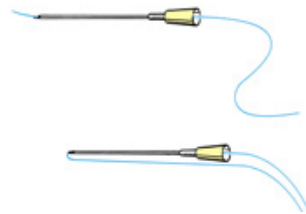
- I pass my sutures through the skin first
- I make my skin incision inbetween the sutures
- make large enough incision and dissect onto capsula
- tie down sutures on capsula



Outside-In

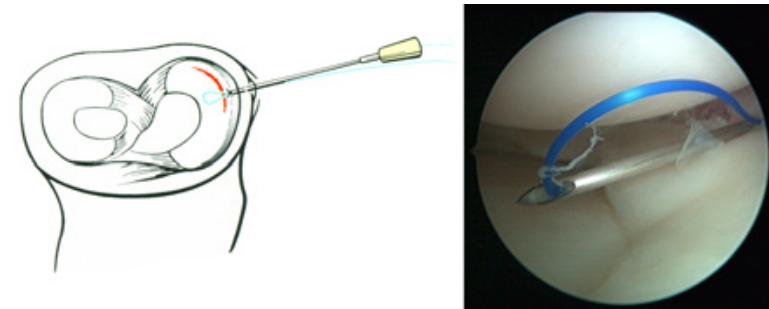
Equipment

- 2 spinal needles
#1
- Suture material
2.0 Ethibond
2.0/#0/ #1 PDS (absorb)
2.0 Prolene (non-absorb)
- Suture grasper



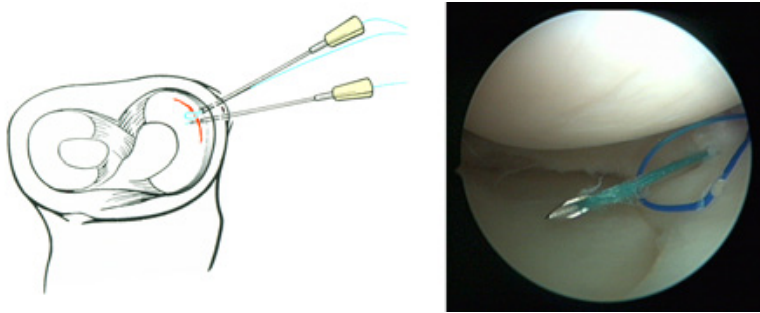
Outside-in (1)

First Needle loaded with shuttle suture
(2.0 ethilon) is passed through the capsule just above the
lesion



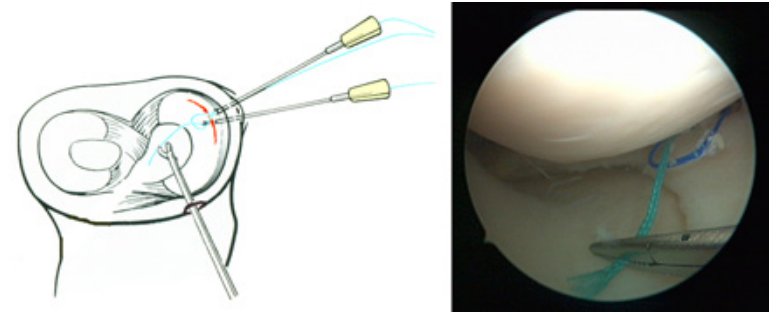
Outside-in (2)

Second needle carrying repair suture is passed parallel to the shuttle suture through the capsule ideally passing the loop



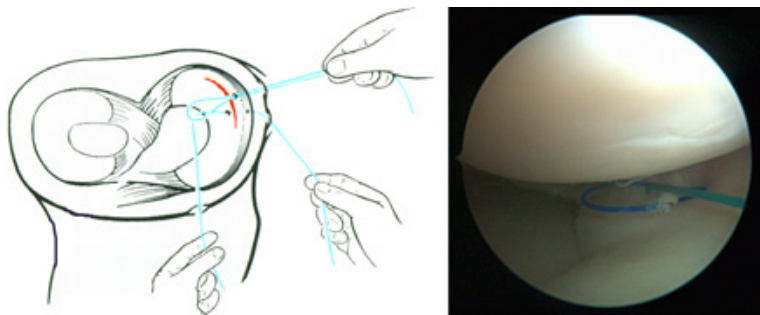
Outside-in (3)

End of suture is caught with a suture grasper and retrieved anteriorly



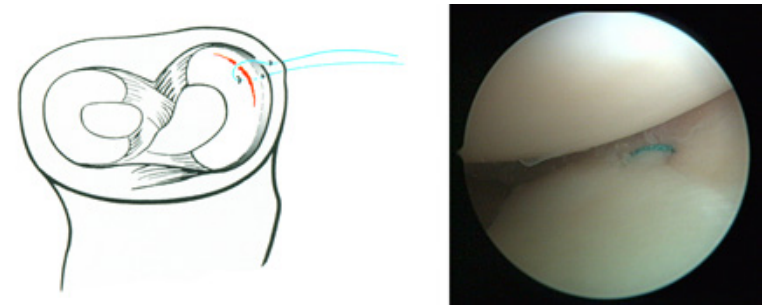
Outside-in (4)

Needles are removed and free end of repair suture is shuttled through the capsule

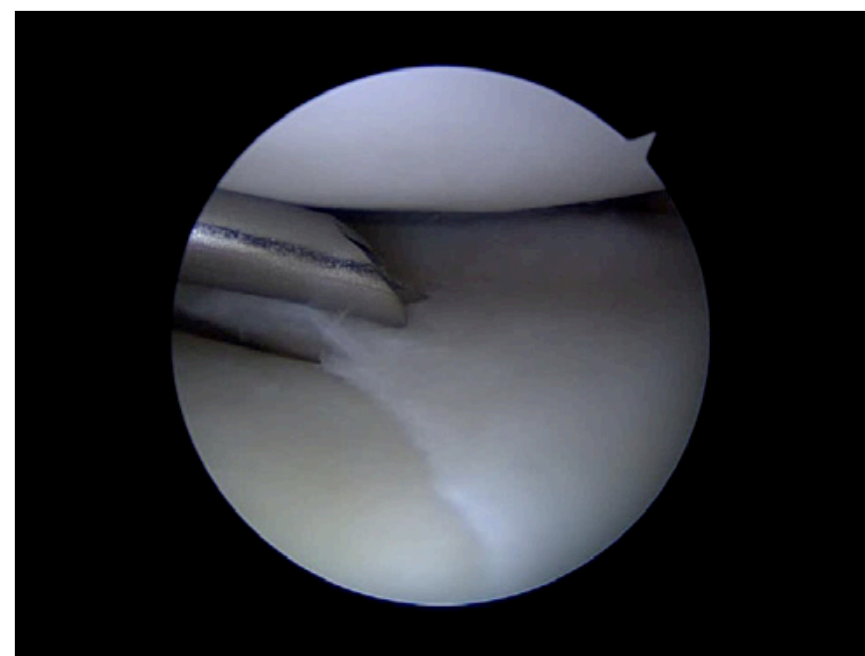
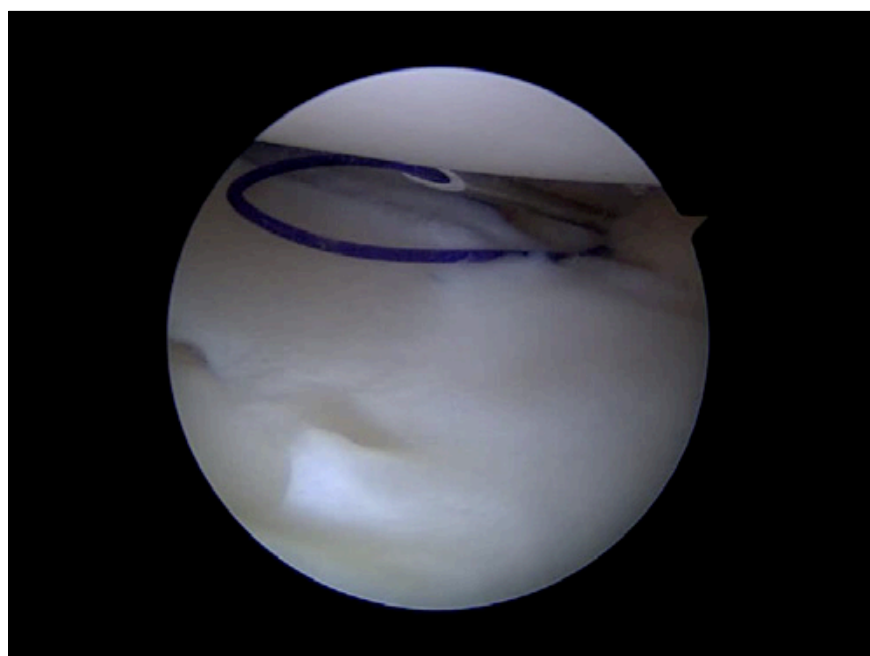
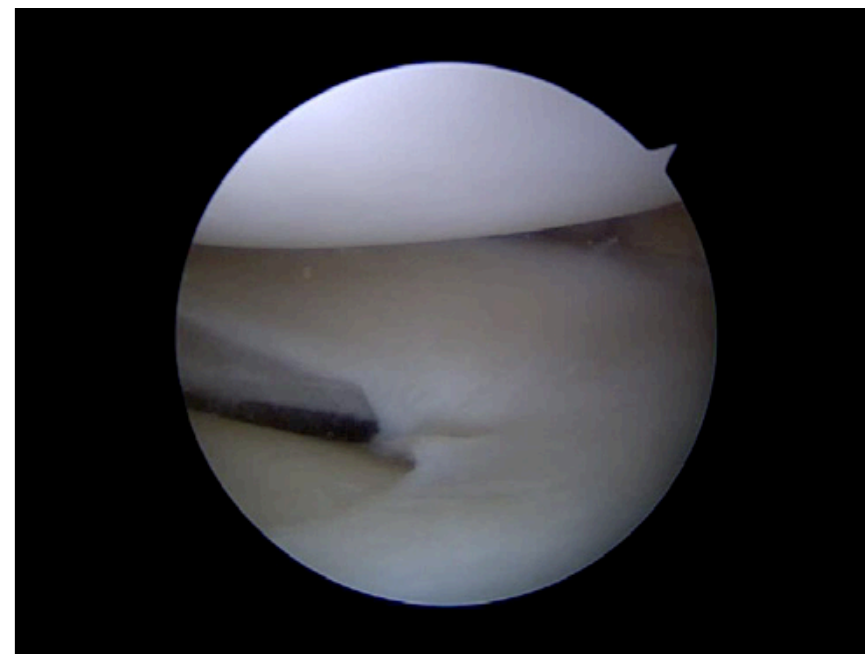
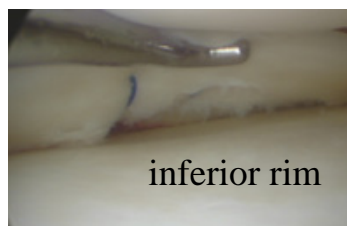


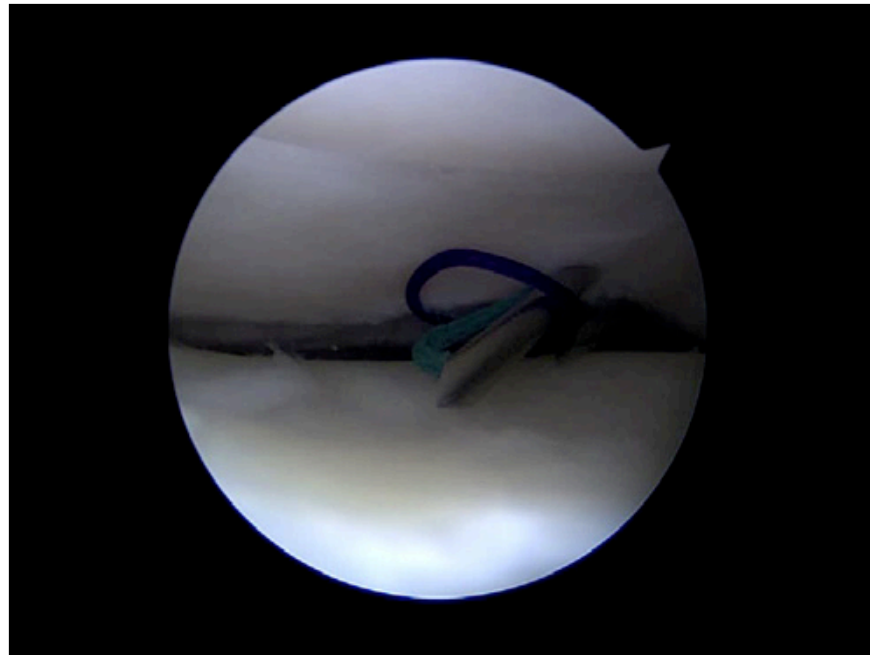
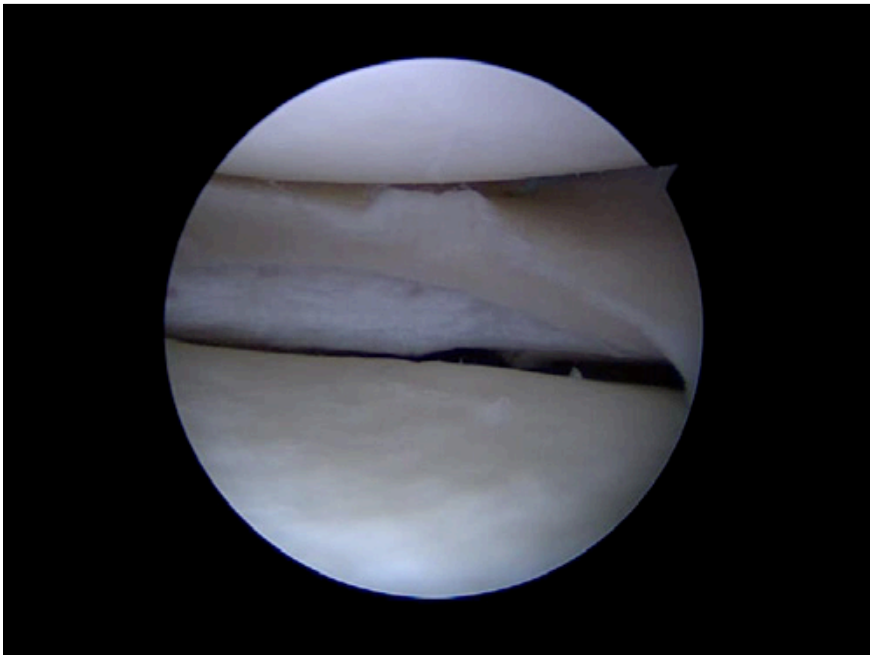
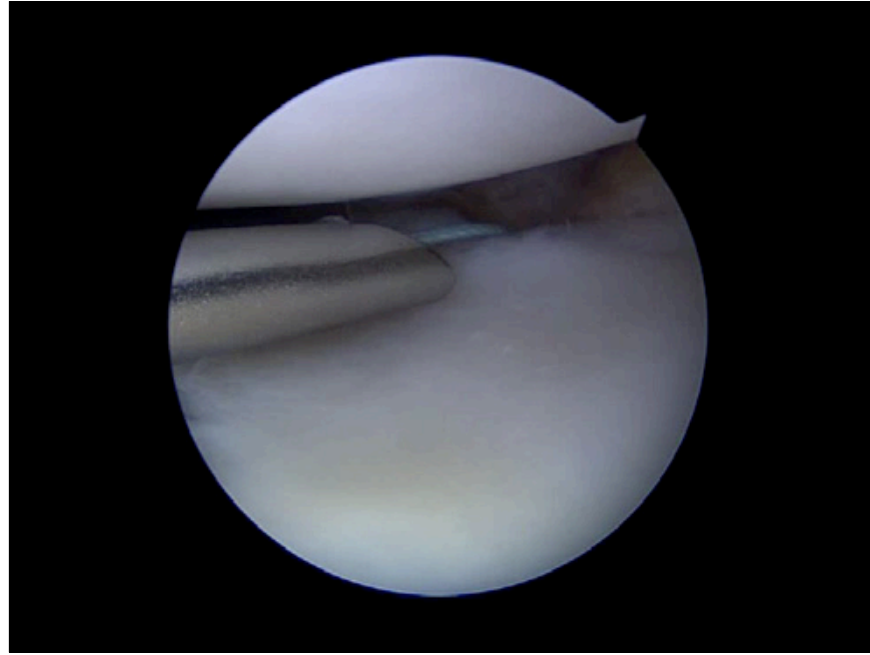
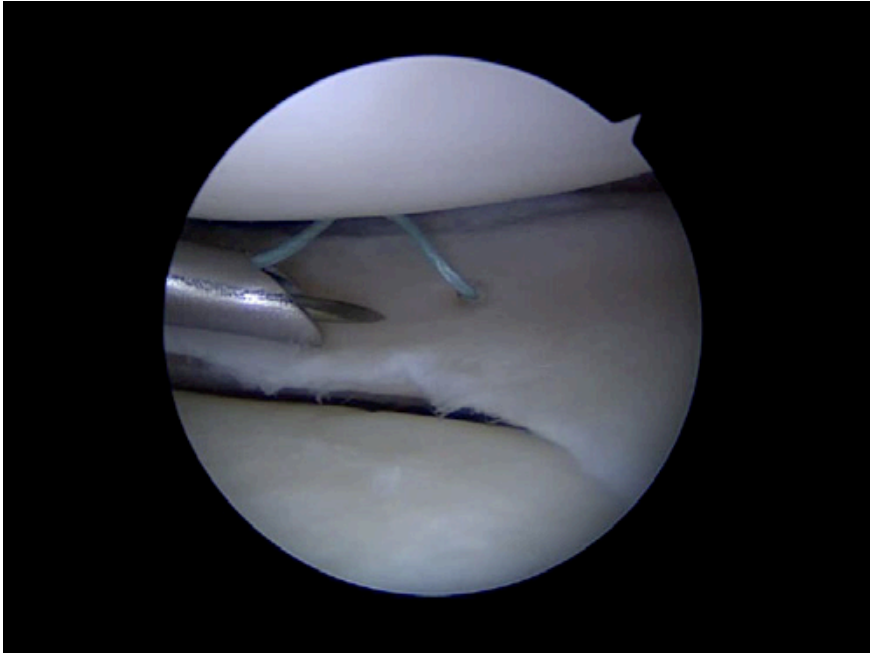
Outside-in (5)

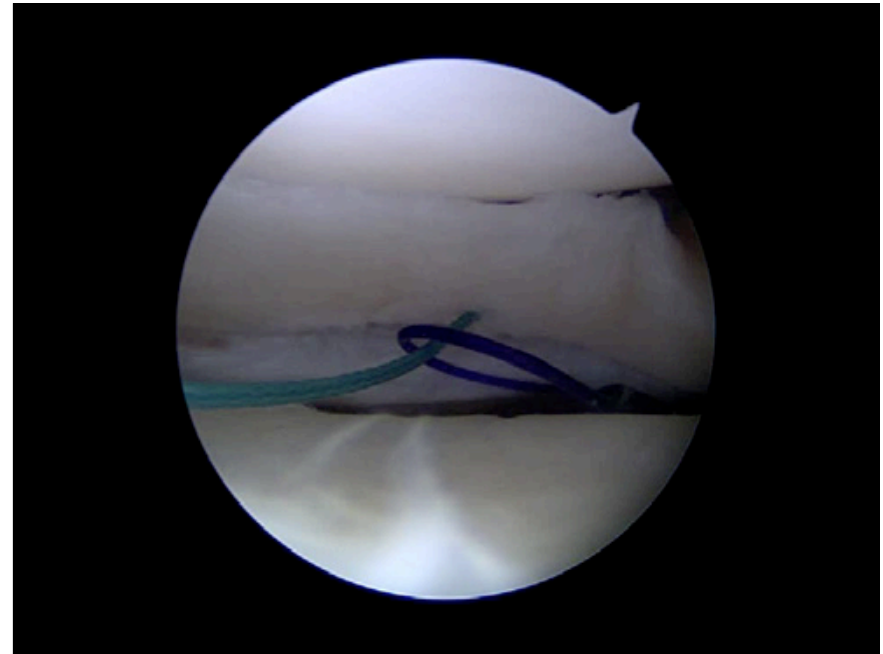
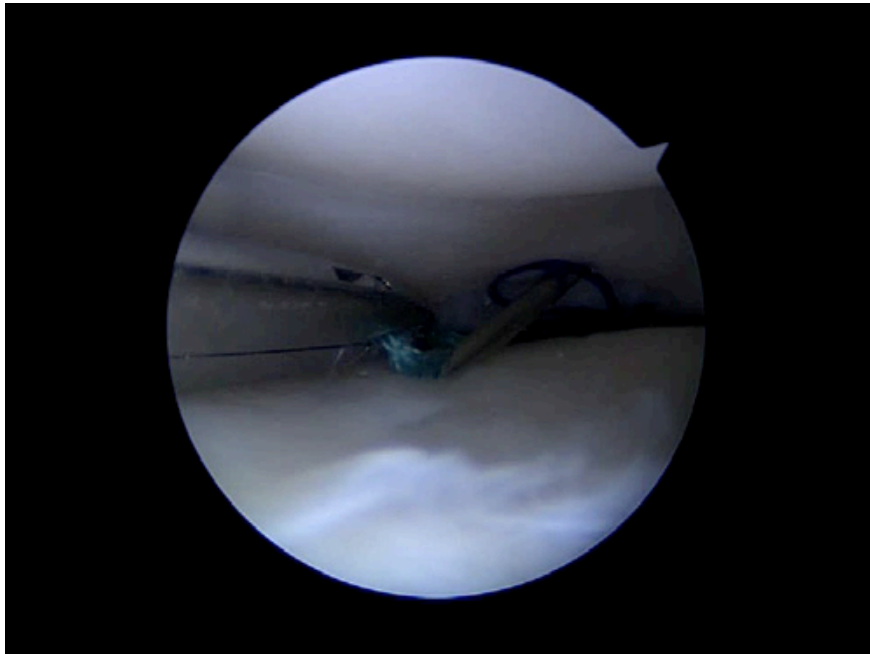
Reduction of the lesion by pulling at both ends of the suture outside the joint



Outside in Sutures (vertical)

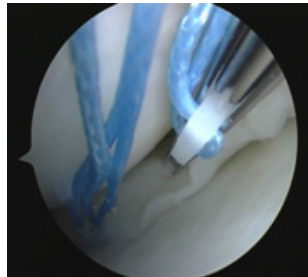
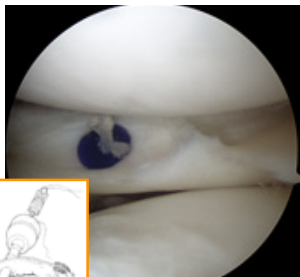






Suture techniques

ultra-fast rapid steady quick max fix....

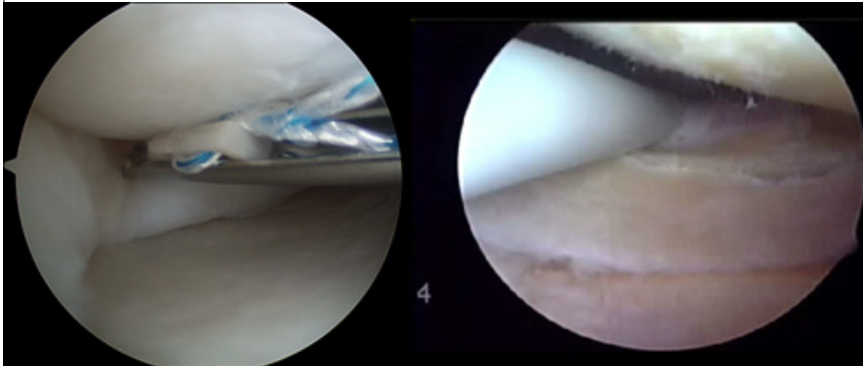


All-Inside technique
golden standard for posterior horn lesions

© Peter Verdonk

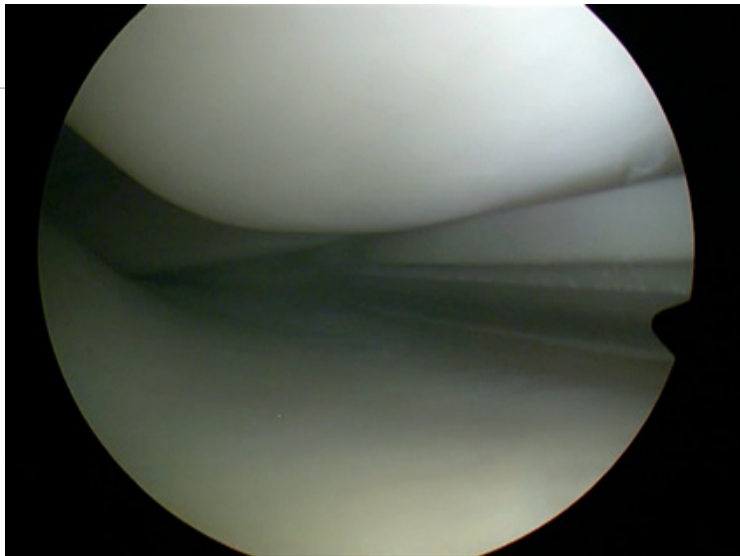
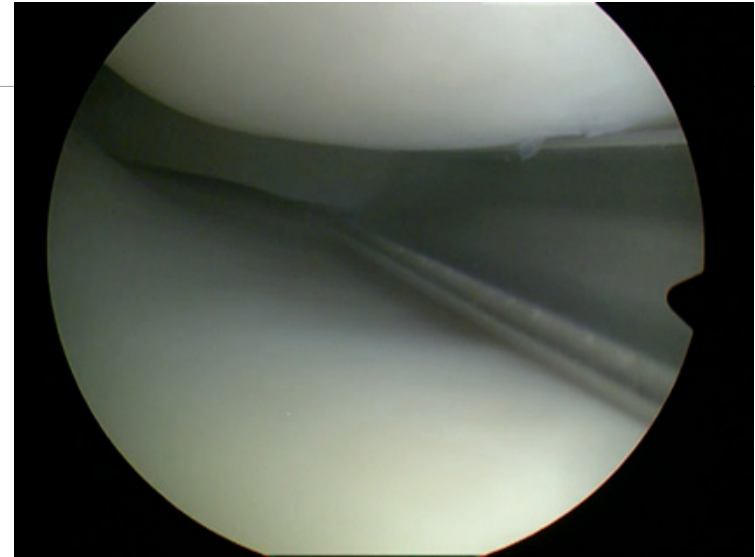


All Inside



In large bucket handles
start in the posteromedial or
posterolateral corner

You can use your fastfix as a joystick



Antwerp Orthopaedic Center
knee department



Meniscus Repair

Technical Notes

Peter Verdonk, MD, PhD
from the Antwerp Orthopaedic Center, Monica Hospitals, Belgium.