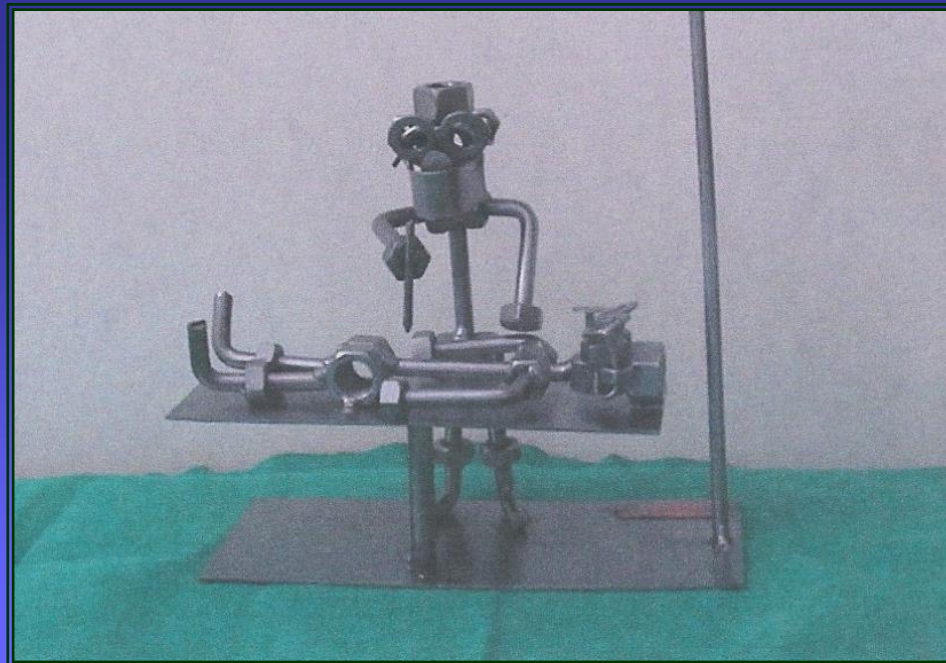


13th BALKAN MEETING OF ATHLETIC INJURIES DRAMA, MAY 2004



**ARTHROSCOPICALLY
ASSISTED
RECONSTRUCTION OF
PCL AND ACL
LIGAMENTS
IN ONE GO.**

*Dr Kostas VOUKALIS,
Orthopedic Surgeon
St. Luke's Hospital,
Thessaloniki, Greece.*

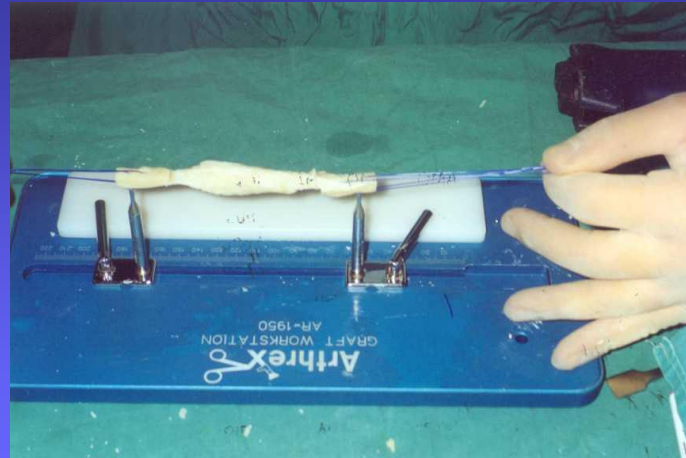


We all know why we treat ACL injuries

- ✓ to save the meniscus
- ✓ to avoid OA(7 years later if untreated)

We all know that to replace ACL we need a graft

- | | |
|------------------------|-------------------|
| ✓ Strength | 2160N |
| ✓ Length | 31-35mm |
| ✓ Cross-sectional area | 32mm ² |
| ✓ Stiffness | 242N |



All of us don't agree on
the choice of the graft

✓ 60% semitendinosous
and gracilis

✓ 30% patellar tendon

✓ 10% allograft



Why St and Gr graft is the first choice?

- ✓ patient's choice
- ✓ autograft
- ✓ strongest (4300N)
- ✓ low morbidity
- ✓ stiffness matches ACL
- ✓ cosmesis
- ✓ no extensor mechanism insult



Most of us now
how to do an
arthroscopically
assisted ACL
reconstruction



WHAT ABOUT PCL INJURIES?

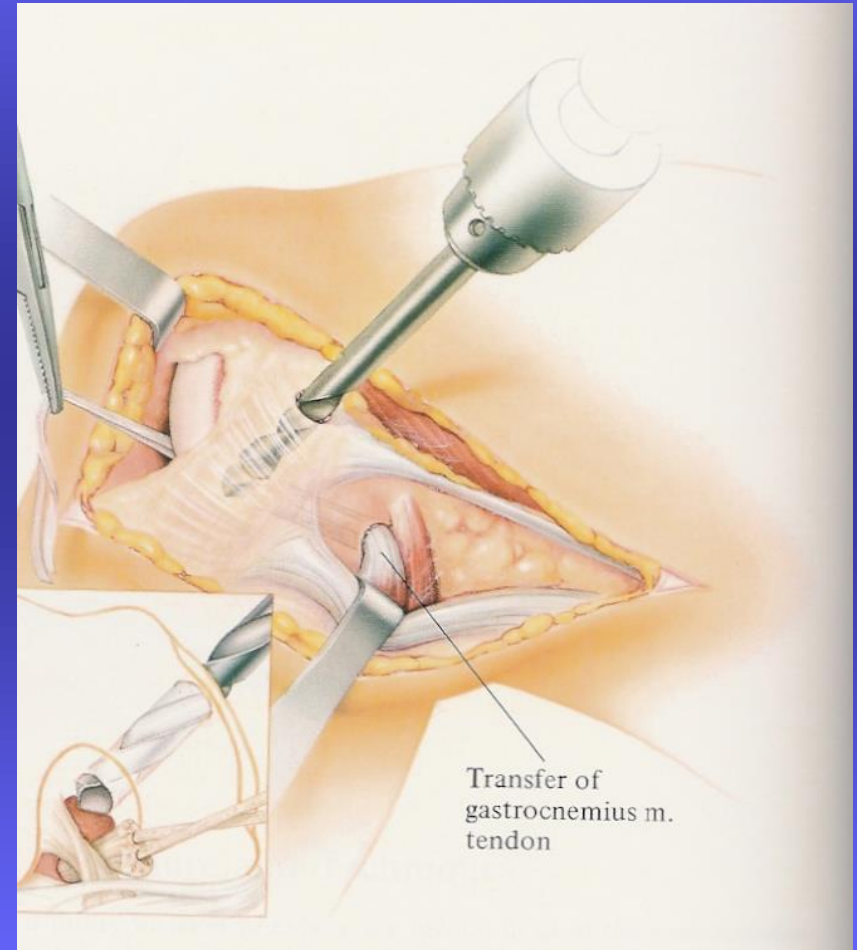
The relation of articles
in the literature is
 $PCL/ACL=1/30$



DO WE HAVE TO TREAT PCL INJURIES?

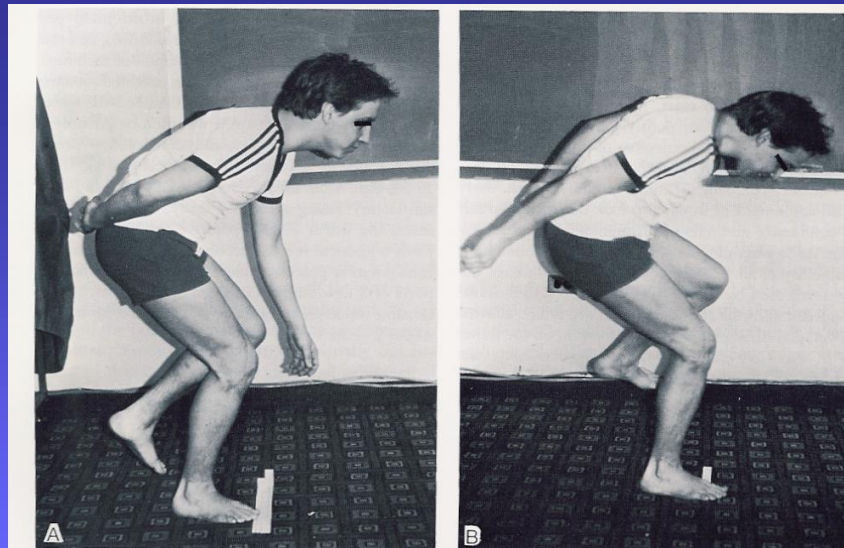
Maybe more than we used to do in the past.

- ✓ 1987, Dejour: 40 of 45 patients had pain at 15 yrs from instability.
- ✓ 1992, Dandy: 14 of 20 patients had pain at 7yrs from instability, and 9 troubled by giving way symptoms.
- ✓ 1993, Keller: 36 of 40 patients had pain at 6 yrs of instability, 17 had a limp.



WHAT HAPPENS IN PCL INJURIES?

- ✓ 1,5-18/12 “Functional adaptation”
- ✓ 1yr-20yrs “Functional tolerance”
- ✓ > 20 yrs OA



PCL STRUCTURE=38mm long, 13mm wide and 1,5 the size of ACL.

COMPONENTS OF PCL

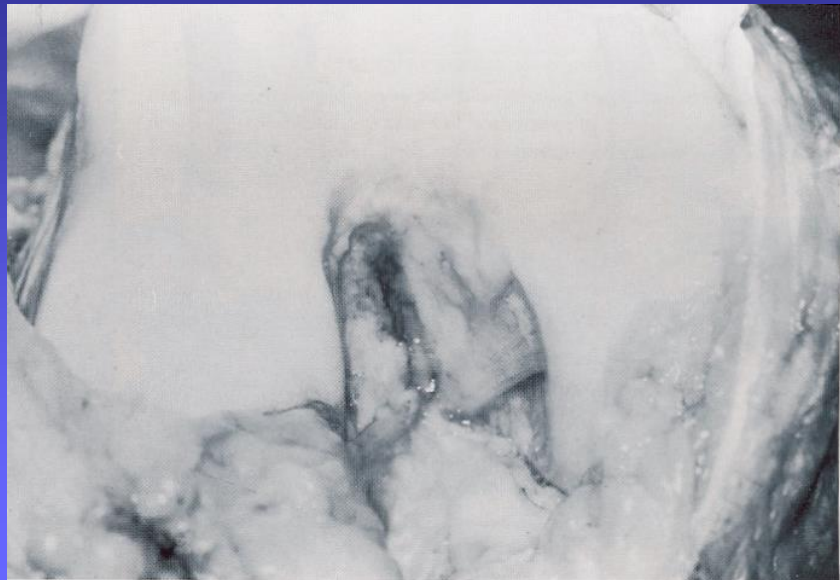
AL, anterolateral bundle:3 times stronger and 3 times stiffer than PM bundle.

PM, posteromedial bundle.

MFL, meniscal femoral ligaments of Humphry and Wrisberg.

AL bundle is tight in flexion

PM bundle is tight in extension



PCL INJURIES

✓ 20% Isolated cases

✓ 80% Combined

* 50% athletic * 40% RTA * 10% OTHER

MRI is not reliable for PCL diagnosis.

Ramos and Thomas (1998) give accuracy of 59%.



POLICY FOR PCL SURGERY

All of us agree that PCL should be treated surgically in complex cases specially if the posterolateral corner is involved.

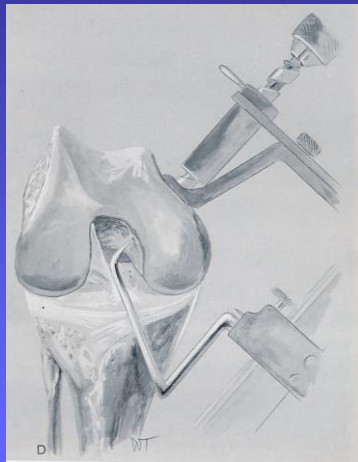
Our policy treating PCL injuries:

- ✓ in combined injuries (acute or chronic)
- ✓ in bone avulsion fracture cases
- ✓ in isolated cases (specially young patients)

Surgery

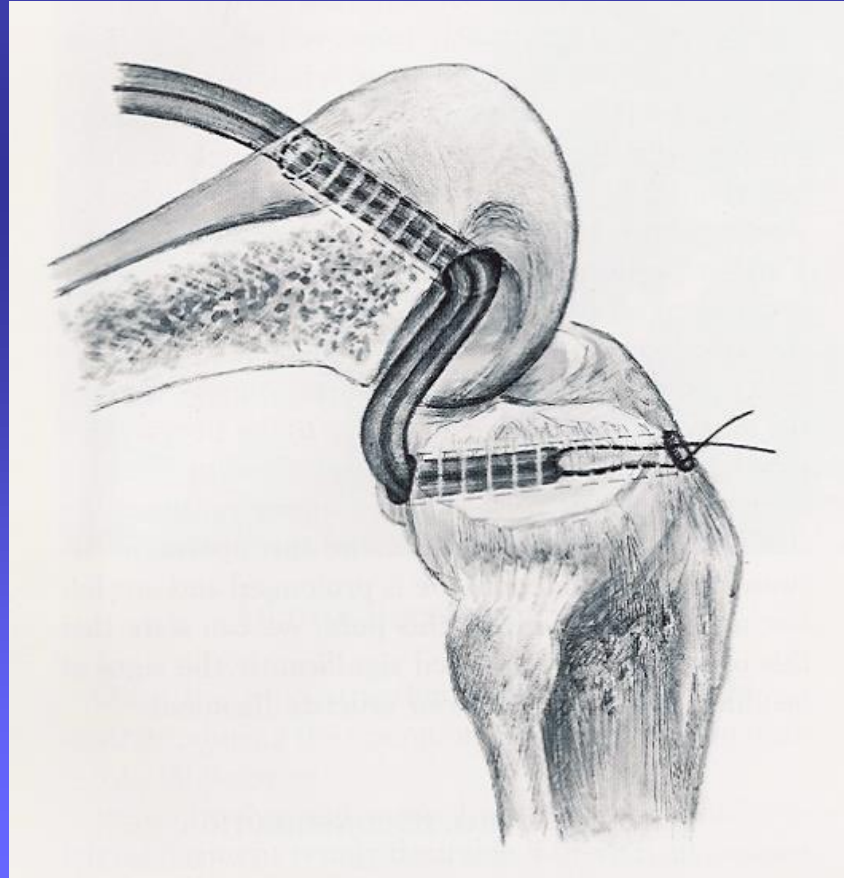
Surgery

Surgery



PRINCIPLES FOR PCL SURGERY

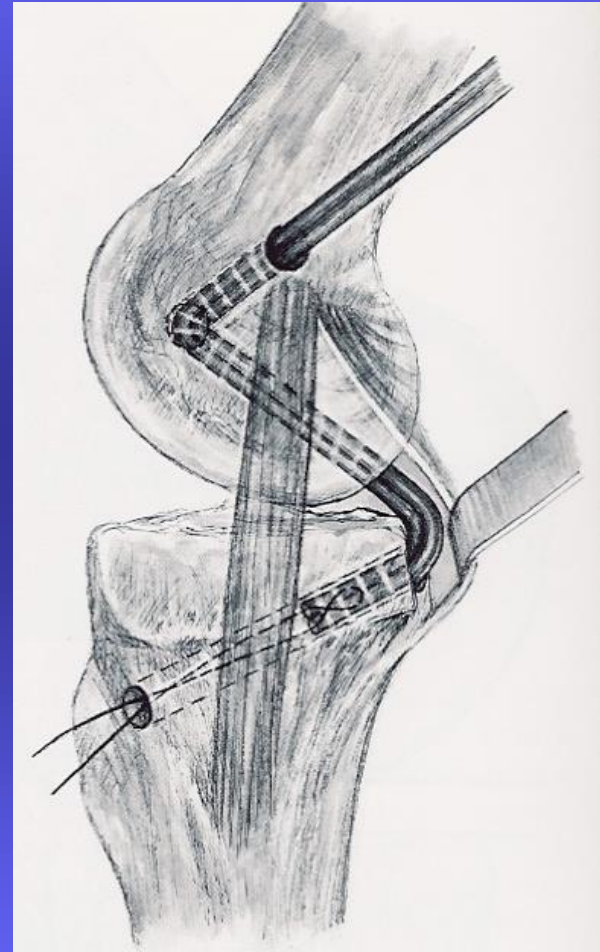
- ✓ reproduction the anatomy
- ✓ reproduce the biomechanics
- ✓ repair all other injuries



GRAFT CHOICE FOR PCL SURGERY

If available, our policy
is to use fresh frozen
Achilles Tendon
allograft.

In chronic cases we can
use the double tunnel
technique, to imitate the
two bundles of PCL.



IN COMBINED PCL AND ACL INJURIES TREATED ARTHROSCOPICALLY WE RECONSTRUCT THE PCL FIRST AND THEN THE ACL.

Using the 70 degree arthroscope we do only two portals.

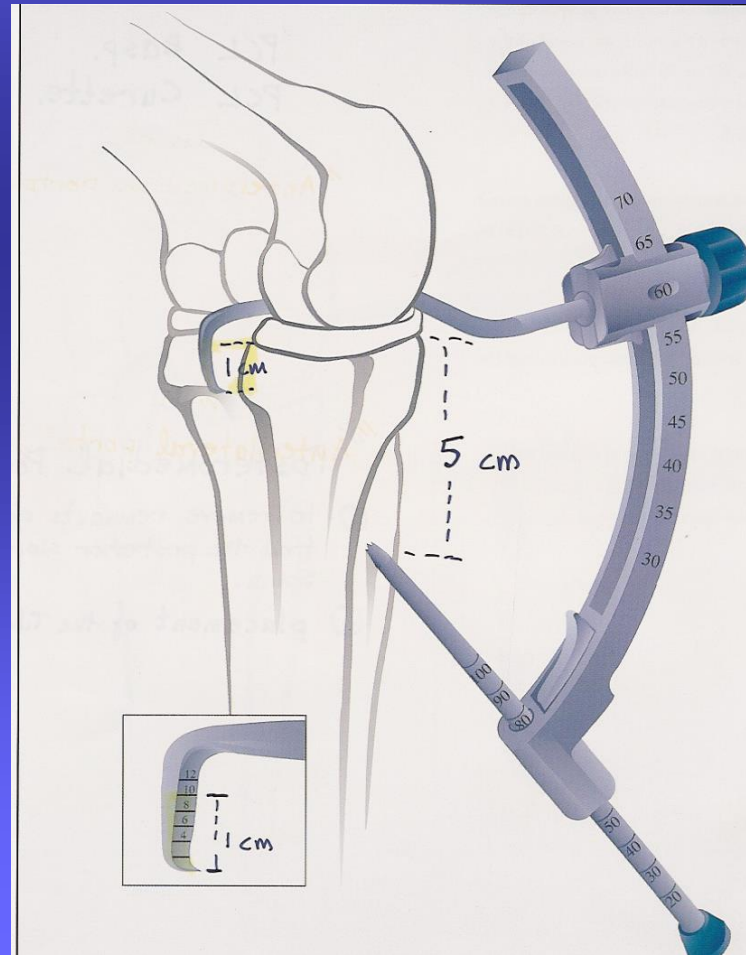
In a difficult case you can use a posteromedial portal

- ✓ to remove remnants of PCL from the posterior slope of Tibial spine
- ✓ for better placement of the Tibial tunnel.

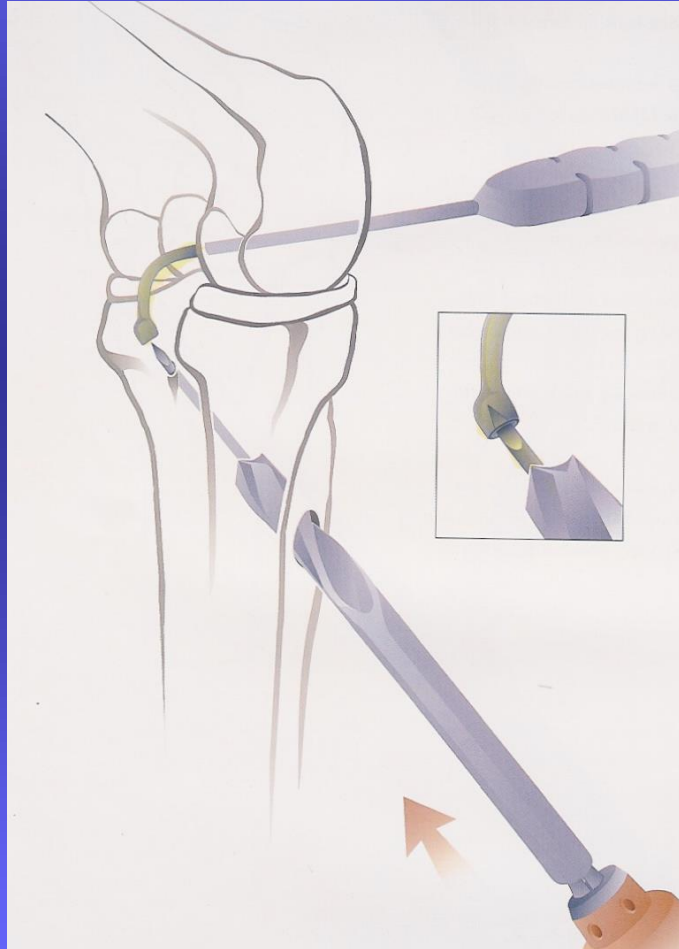
TRANSTIBIAL PCL RECONSTRUCTION

BY ARTHREX IS OUR METHOD OF CHOICE.

ANATOMICAL TIBIAL GUIDE PIN ORIENTATION.

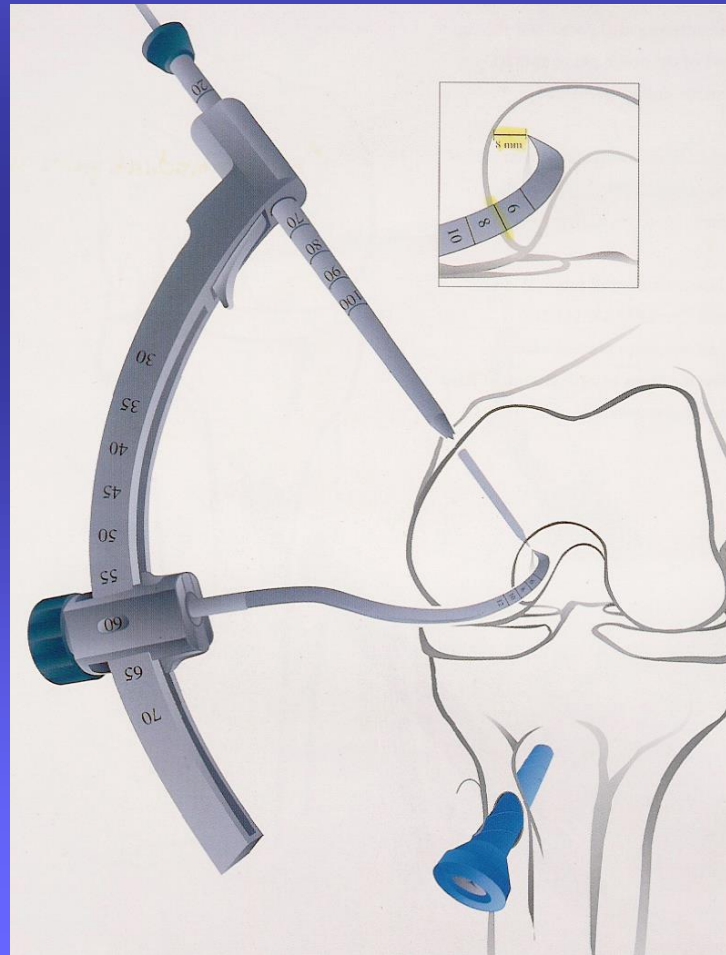


SAFE TUNNEL DRILLING



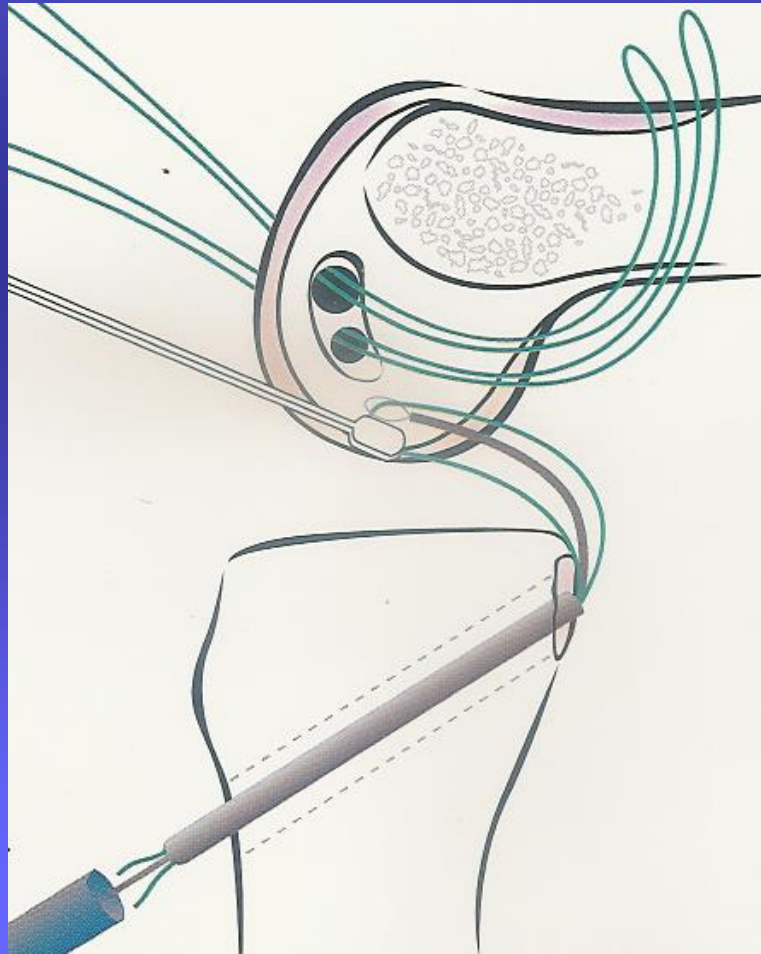
ANATOMICAL FEMORAL TUNNEL PLACEMENT

Midway between the medial femoral epicondyle and articular margin of the femoral sulcus pointing posteriorly.

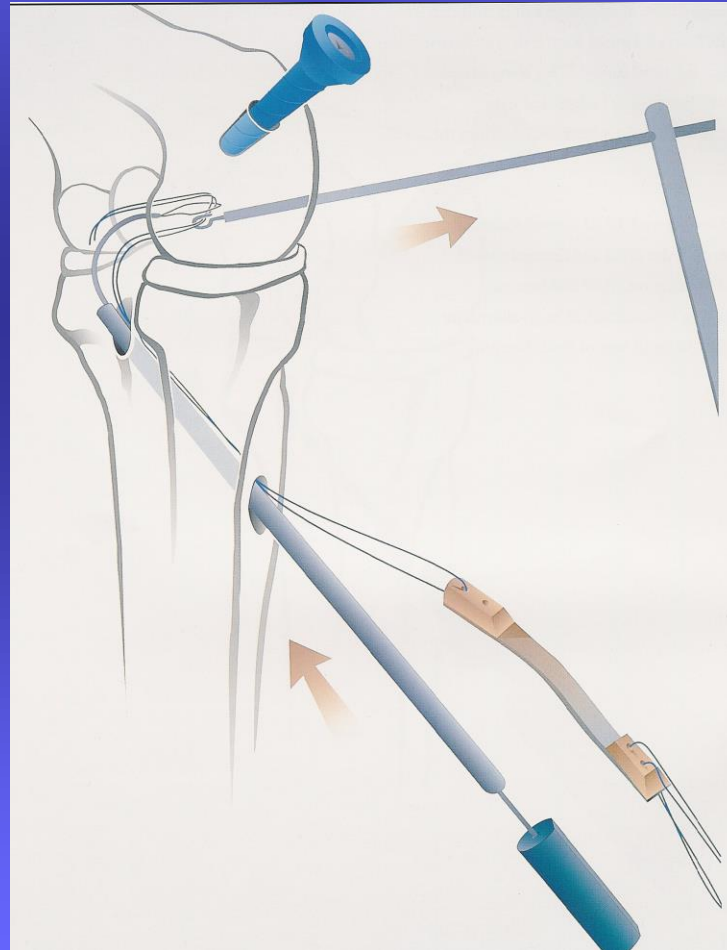


FEMORAL TUNNEL PREPARATION

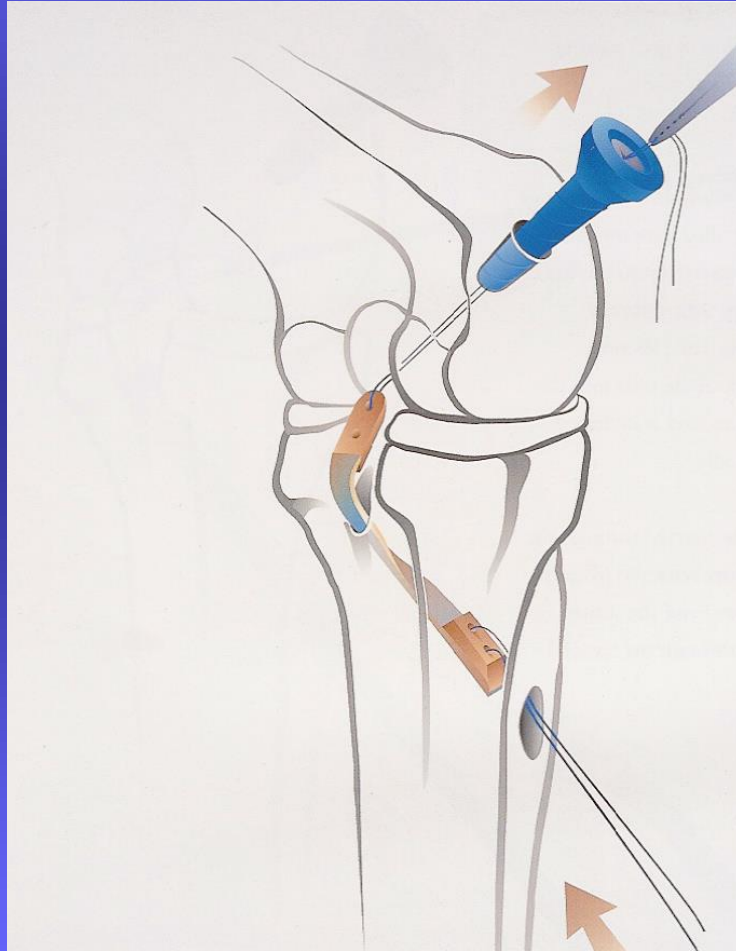
Instrumentation for double tunnel technique is available by ARTHREX.



“WORM” ASSISTED GRAFT SUTURE PASSING



PASSING THE GRAFT



GRAFT FIXATION ARTHROSCOPICALLY ASSISTED OR NOT.

Fix the femoral side only and leave the tibial side for the end.

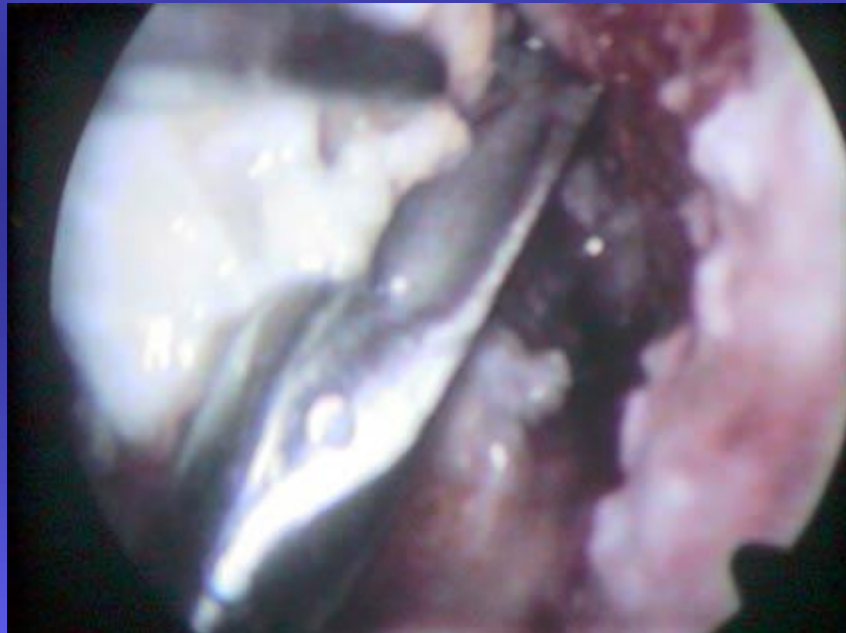
TRANSFIX TECHNIQUE FOR ACL RECONSTRUCTION ANATOMICAL GUIDE TIBIAL PIN ORIENTATION



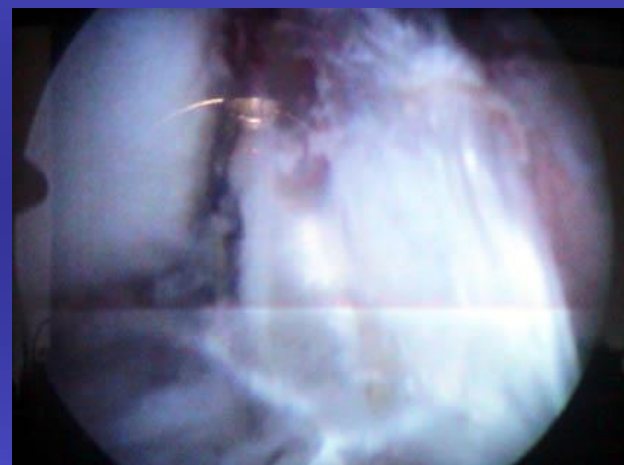
TIBIAL TUNNEL DRILLING



ANATOMICAL FEMORAL SOCKET POSITIONING AND DRILLING

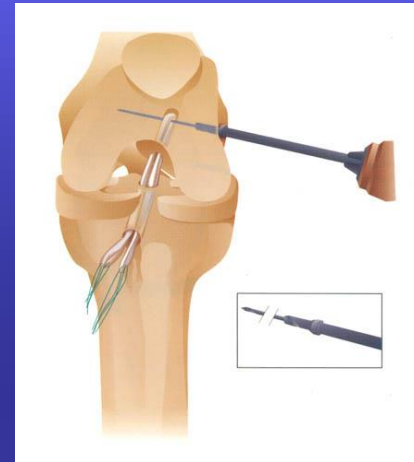


PASSING THE GRAFT

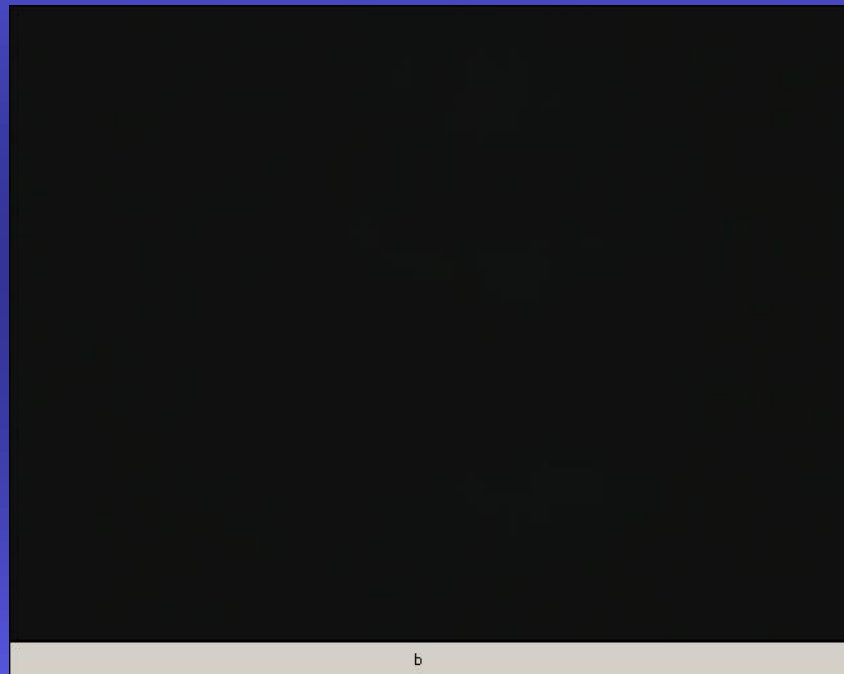


GRAFT FIXATION

Our policy in the last two years is to use absorbable material only.



VIDEO



POST OF CARE

- ✓ Discharge the following day
- ✓ Knee brace for 2 wks in extension
- ✓ Full weight bearing

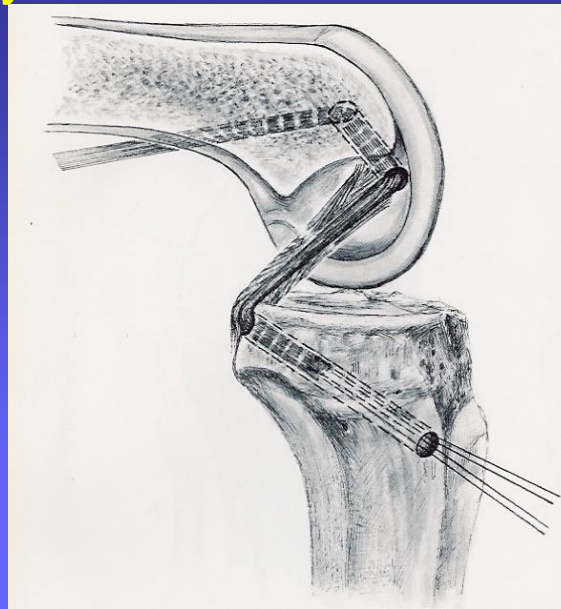
CONCLUSION

Now we know how to treat PCL injuries easily with minimum morbidity.

80% PCL injuries are combined with ACL.

Open PCL surgery in the past was major surgery, difficult and dangerous.

Arthroscopically assisted PCL reconstruction with the new instrumentation is safe and fast enough to allow us to perform simultaneously PCL and ACL reconstruction in one go.



THANK YOU

