

Per-op rupture of patellar tendon in TKA : treatment, prevention

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The Management of Extensor Mechanism Complications in Total Knee Arthroplasty

AAOS Exhibit Selection

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AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS

Denis Nam, MD, Matthew P. Abdel, MD, Michael B. Cross, MD, Lauren E. LaMont, MD, Keith R. Reinhardt, MD, Benjamin A. McArthur, MD, David J. Mayman, MD, Arlen D. Hanssen, MD, and Thomas P. Sculco, MD

Investigation performed at the Hospital for Special Surgery, New York, NY

Occurrence <1%

Tibial tubercle insertion +++

Intrasubstance or infrapatellar avulsions less common

Risk factors :

Major scarring + stiffness

Multiple prior surgical procedures

Patella Baja



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Treatment options depends :

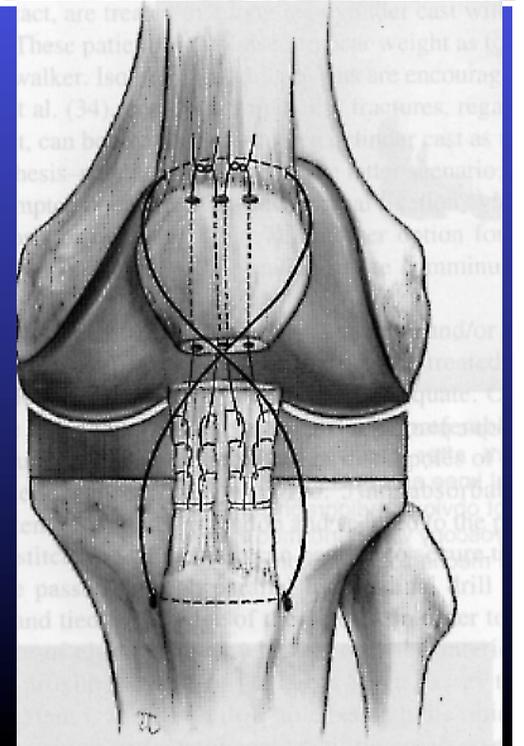
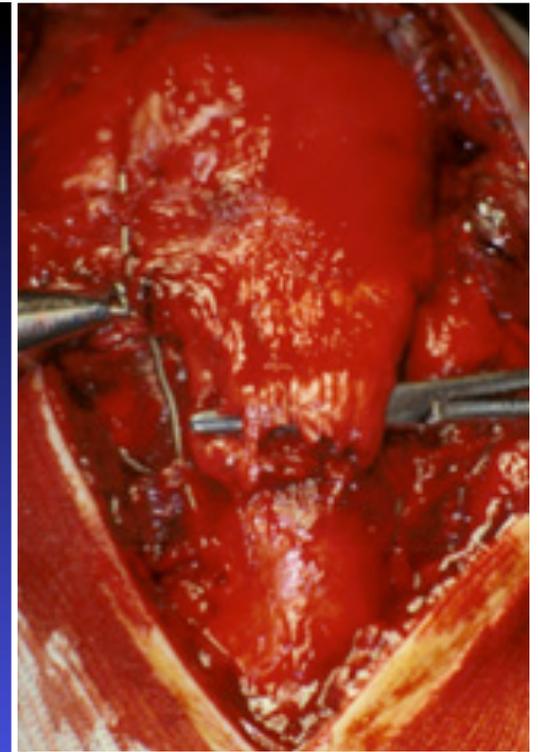
Location of the injury,
Quality of the remaining tissue

Direct repair in acute rupture => reasonable option

Augmentation techniques => poor tissue

Direct repair

- Acute rupture
- Good soft tissue quality
- Protection by cerclage wire



Augmentation techniques

Numerous options available

- Hamstring autograft
- Fresh-frozen (or dried) Achilles tendon
- Extensor mechanism allograft
- Synthetic graft (Marlex mesh)

But Allograft need to be ordered

Augmentation techniques

Hamstring autograft (if available)

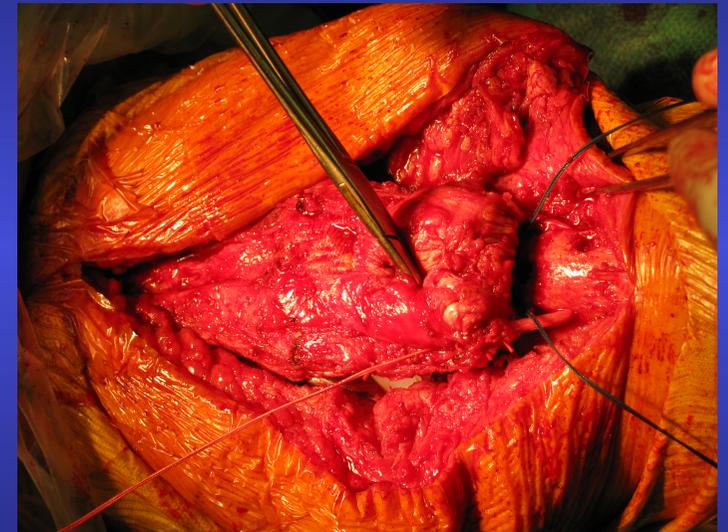
“Simple rupture”

Soft tissue Ok

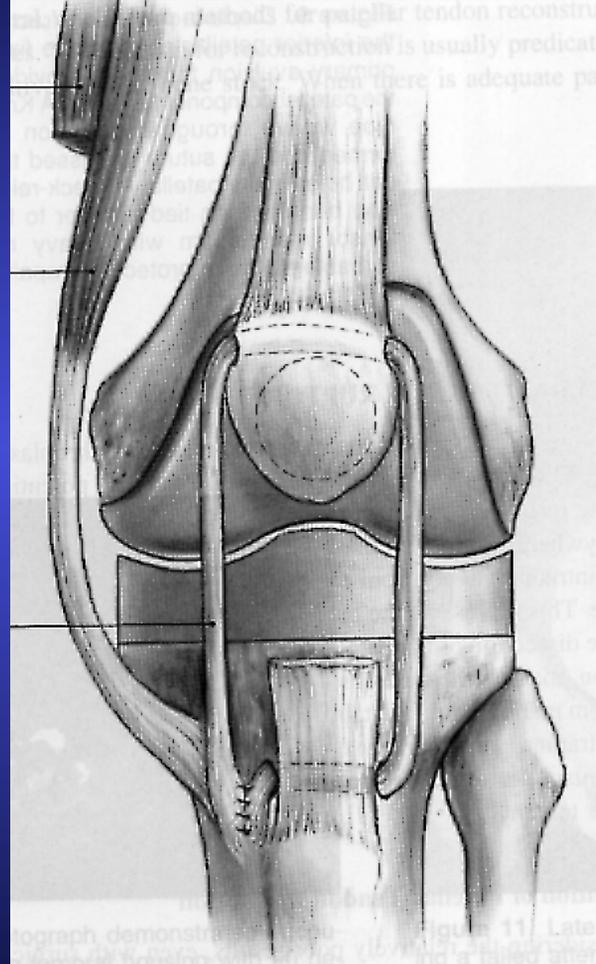
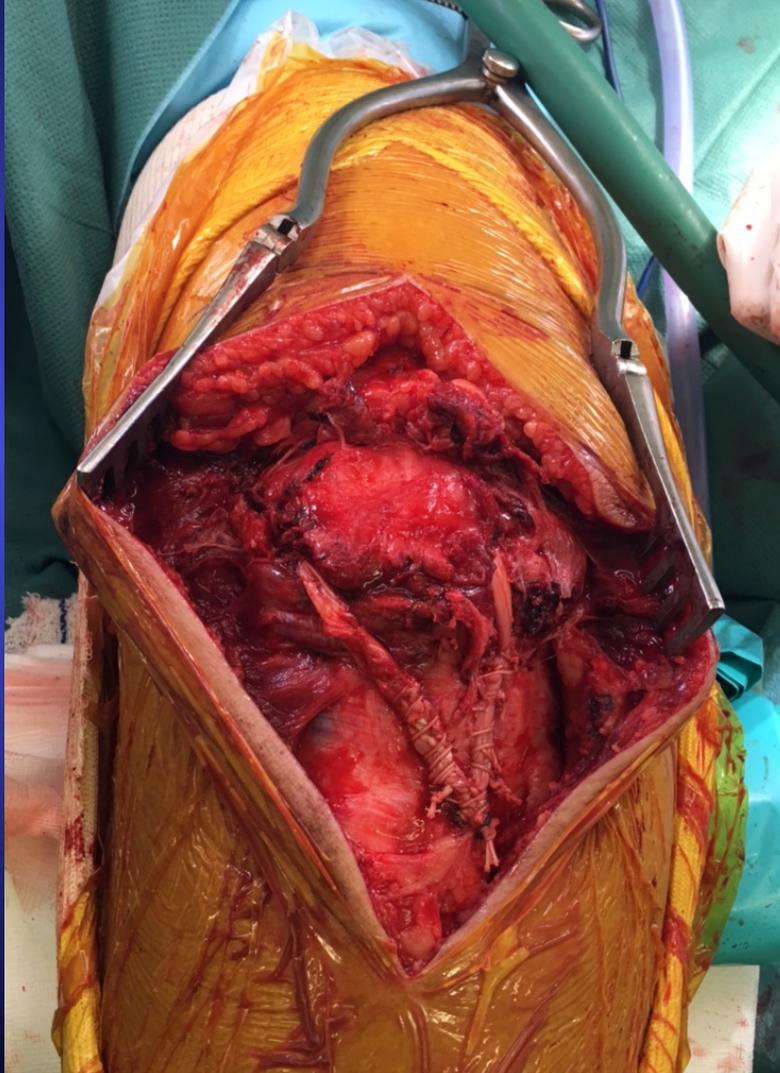
Marlex Mesh

Complex rupture

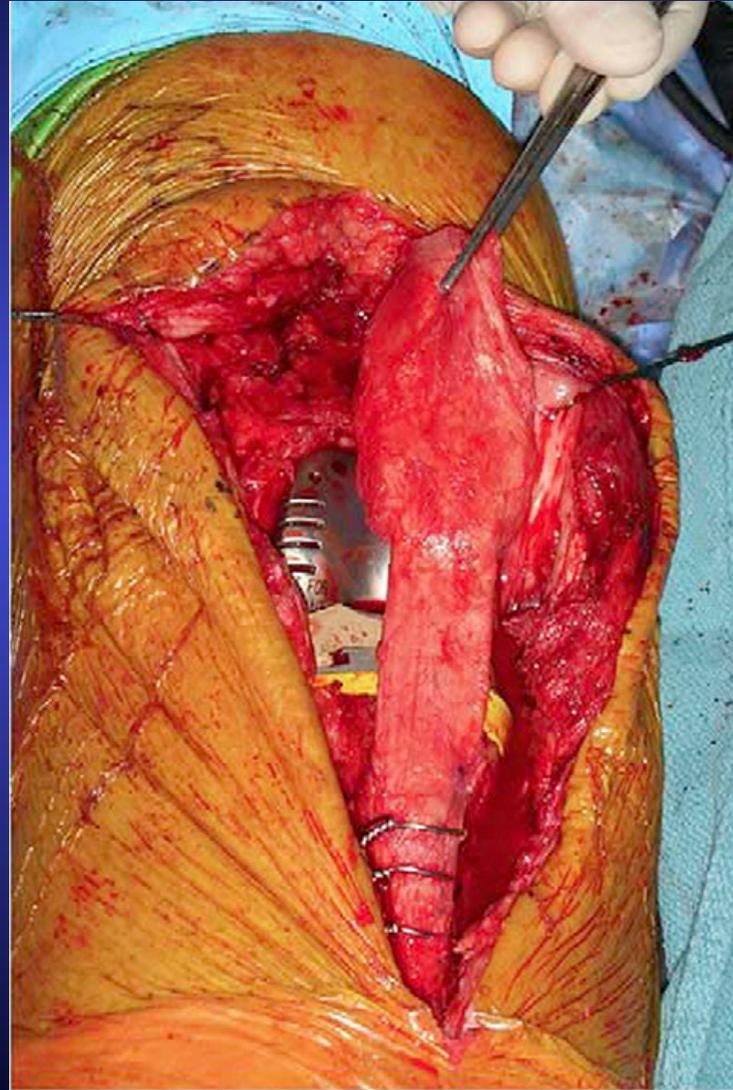
Insufficient implant coverage



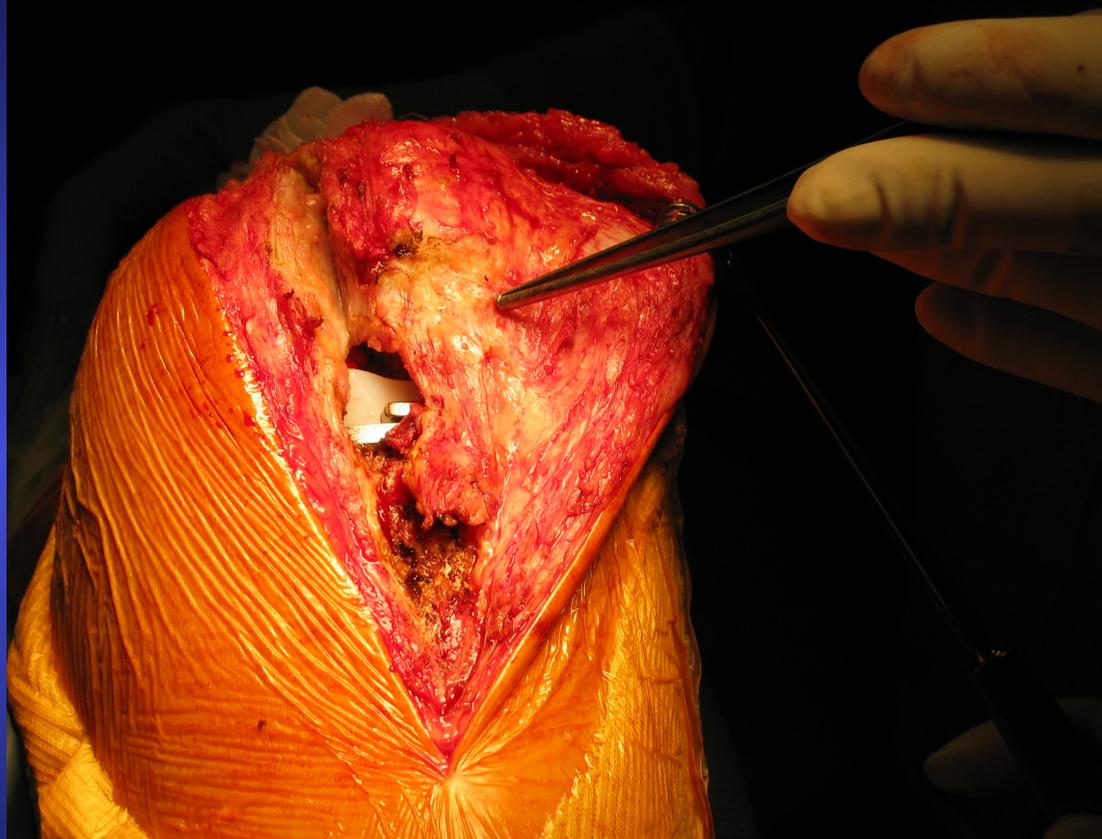
Augmentation techniques



Augmentation techniques



Prevention ++



What we want to avoid ?

Prevention ++



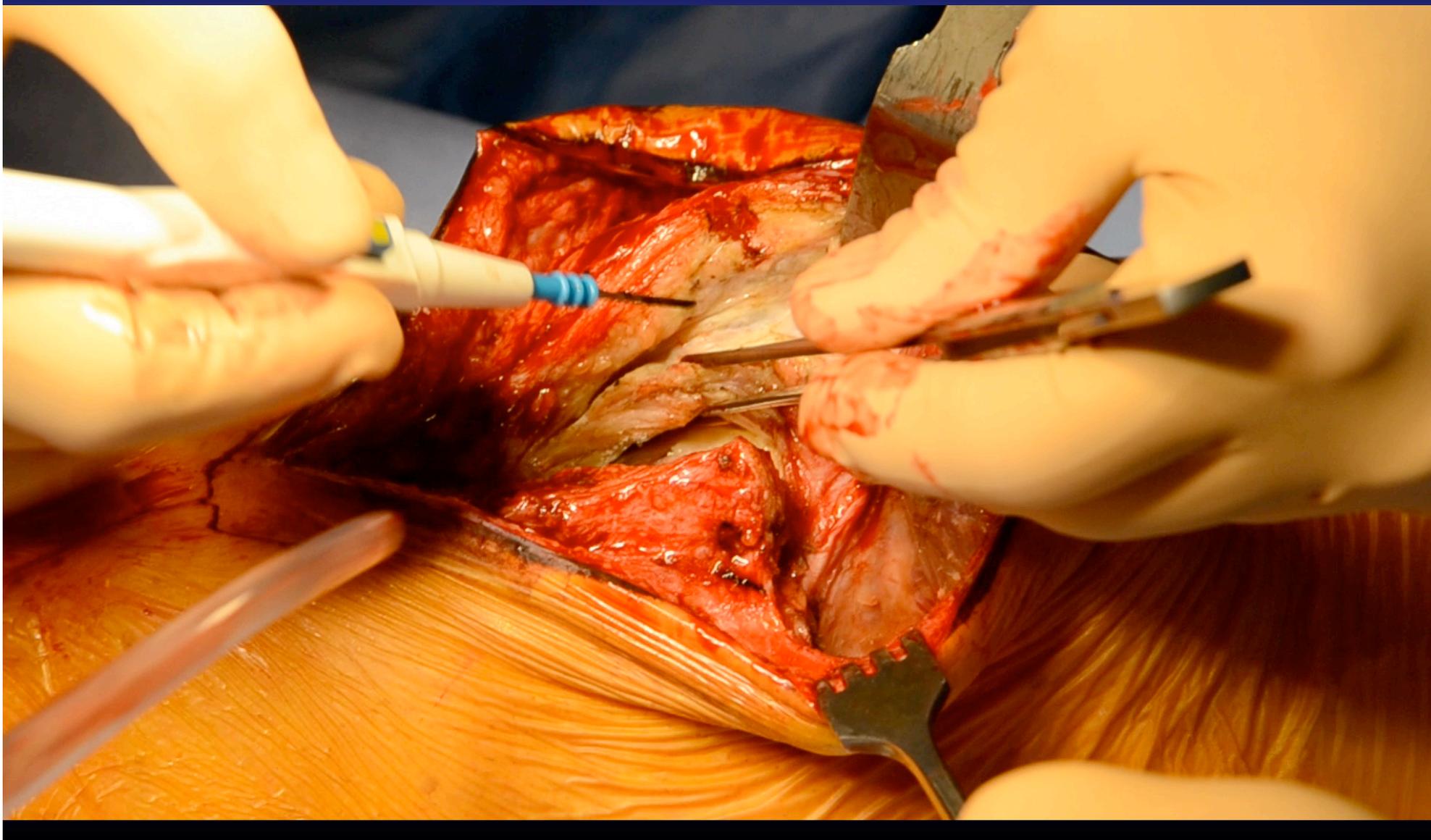
What we want to avoid ?

What are the two most important things in stiff TKA knees ?

1. The skin

2. The extensor mechanism

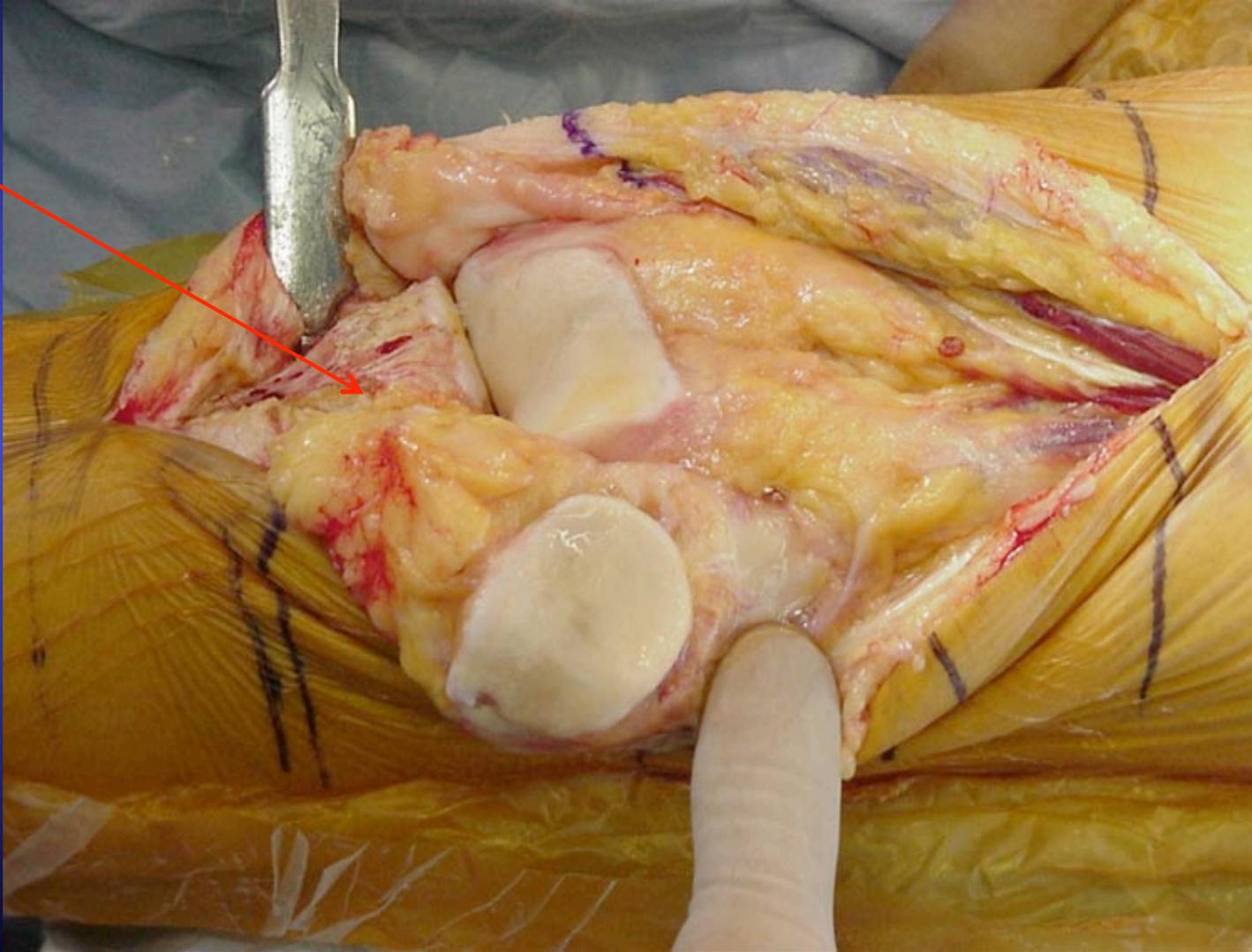
Free the suprapatellar pouch



Release adhesions between anterior tibia and patellar tendon proximal to ATT



Eversion or not of the patella

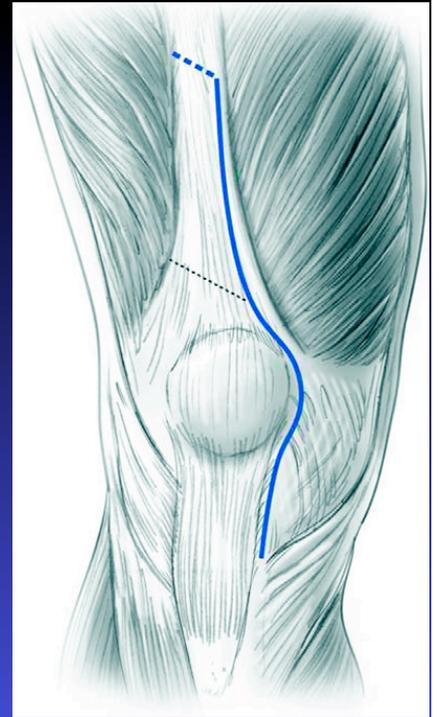


Option 1: Quad Snip



Quadriceps Snip

1. Keep the longitudinal incision in the tendon
2. Extend it proximally to the top
3. Create an oblique incision at the proximal extent of the tendon

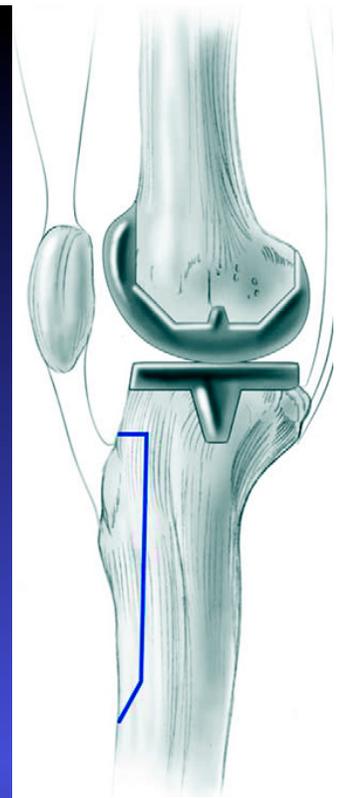


Option 2: TT osteotomy

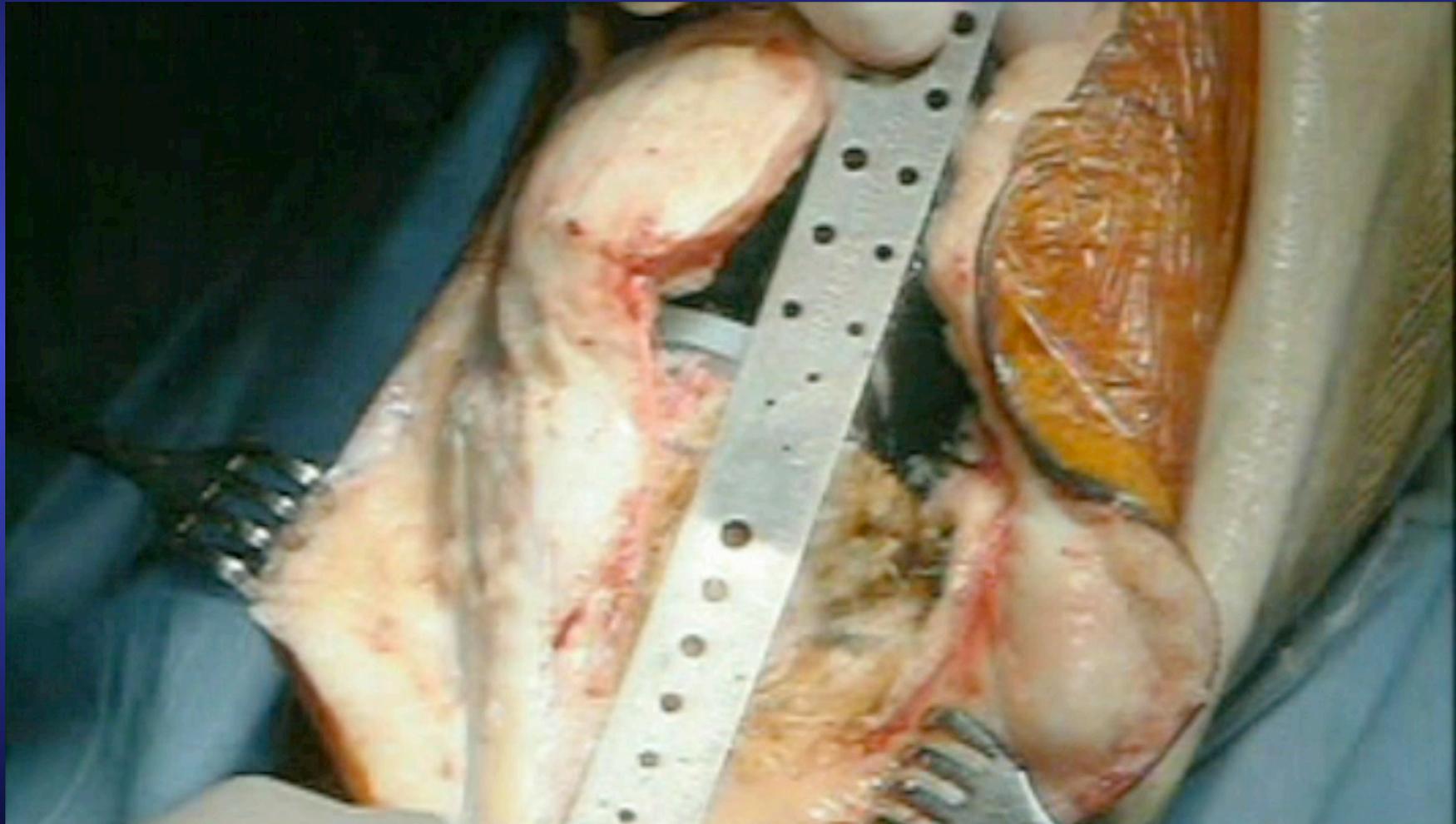


Tibial Tubercle osteotomy

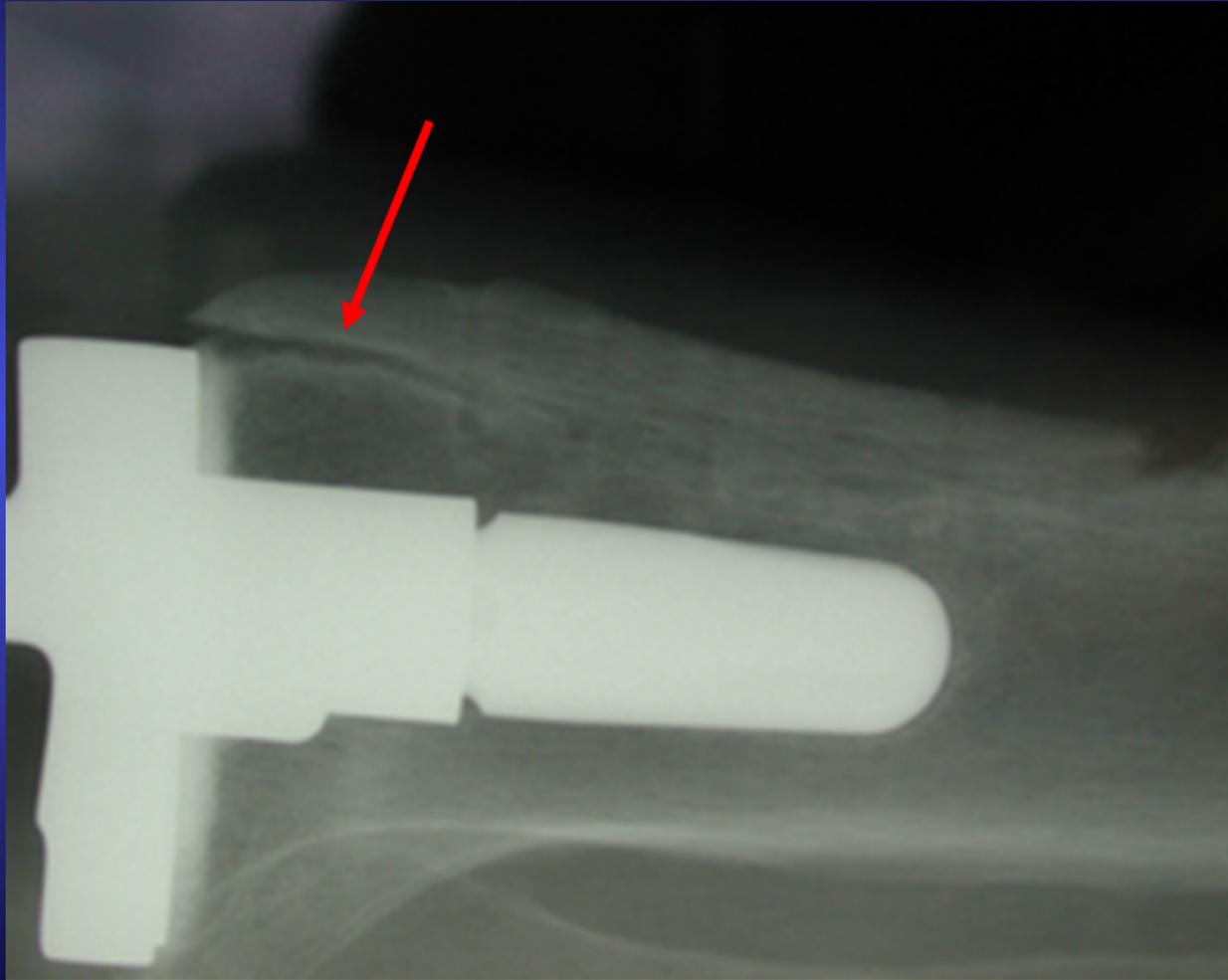
1. Plan adequate length: 8 cm
2. Preserve, if possible, proximal shelf of bone
3. Preserve lateral hinge
4. Predrill holes for wires or screws



Tibial Tubercle osteotomy



What you want to avoid



TTO Fixation



TTO Fixation



TTO Fixation



Take home messages

- Rare < 1%
- Augmented suture +++
- Autograft if possible (Marlex if not)
- Prevention for “at risk knees” (Stiff/Baja)
- Planned TTO/Snip >>> Per-op Rupture