






Université Claude Bernard  Lyon 1

## Reconstruction of chronic ruptures of extensor mechanism

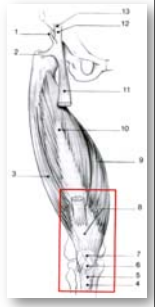
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 G Demey, S Lustig, P Neyret

Centre Albert Trillat  
 Hôpital de la Croix-Rousse  
 Val d'Isère knee course 2012



### chronic ruptures of extensor mechanism

- Quadriceps tendon
- Patellar tendon
- Patellar fracture malunion
- ATT fracture malunion




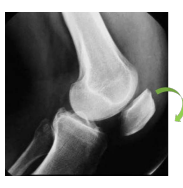
### chronic rupture of quadriceps tendon

- Defect in the suprapatellar area (obesity +/-)
- low-lying patella
- Active extension deficit
- Proximal mobility of the patellar : QT retraction

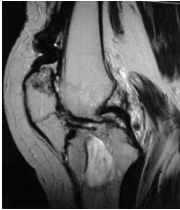

### X-rays

- Comparative profile x-rays
- Confirm the diagnosis : « low patella »

### MRI

Planification :  
 GAP size § muscular degenerative tissue

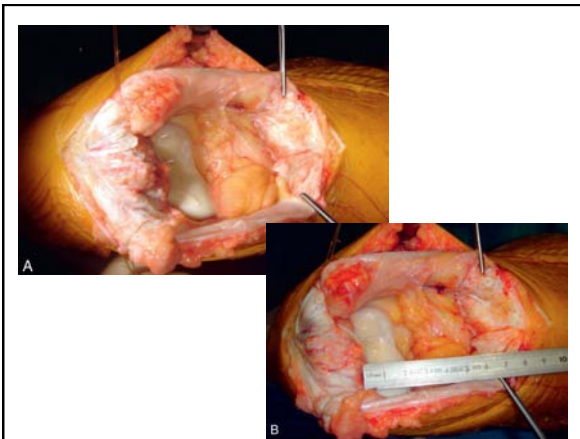
### Surgical procedure

- Chronic rupture with retraction (neglected rupture )
  - ➔ Suture + metallic wire
- Chronic rupture without retraction (iterative rupture)
  - ➔ Suture + biologic tissue

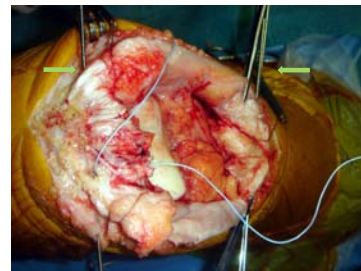
### Suture + metallic wire

- Developed by P. Chambat
- Indication :
  - chronic rupture with large GAP
  - fixed patella
  - patellar tendon retraction

### Operative procedure



### Introduction of transversal K wire



Patella

rectus femoris



Horizontal K wire + vertical wire  
the vertical wire are tightened : each twist will close the gap



« CANNING OF SARDINES » TECHNIQUE



### Postoperative care

- Splint at rest at 30° of flexion
- Extension splint for walking : full WB
- Manual passive rehab and progressive ROM
  - 0-45° D15
  - 0-70° D15-30
  - 0-90° D30-45
  - Avoid flexion over 120° (3- 6 mo)
- Material removal (>6 mo)

### suture + biologic reinforcement

Bring collagen !

An anatomical diagram of the knee joint showing the patellar tunnel and the placement of a suture. The diagram is labeled with 'suture + biologic reinforcement' and 'Bring collagen !'.

Semi-tendinosus + Patellar tendon

Three intraoperative photographs showing the surgical procedure. The first image shows a large incision and the use of a retractor. The second and third images show the surgical site with sutures and the use of surgical instruments.

### Patellar Tunnel

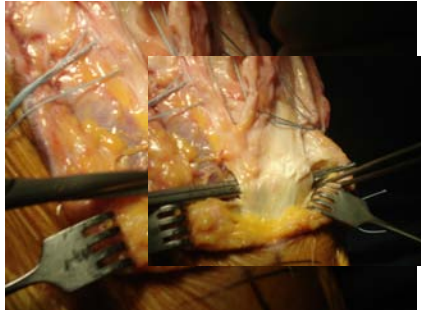
4.5

An intraoperative photograph of the patellar tunnel. A circular incision is visible, and a surgical instrument is used to create the tunnel. The number '4.5' is visible in the top left corner.

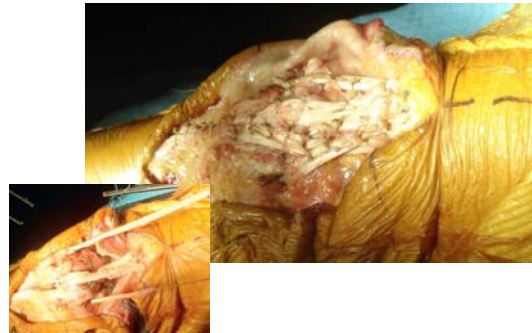
### Fiberwire Suture

An intraoperative photograph of the fiberwire suture. The suture is visible, and the surgical site is shown with sutures and surgical instruments.

ST through QT : ST framing



Final suture made in extension



### chronic rupture of patellar tendon

- Defect in the infrapatellar area (obesity +/-)
- high-lying patella
- Active extension deficit
- Instability



### chronic rupture of patellar tendon



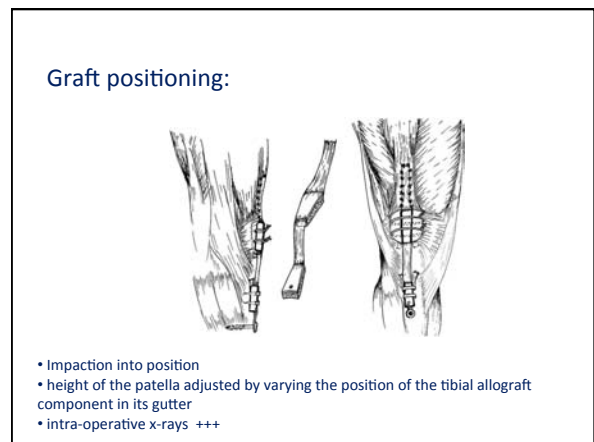
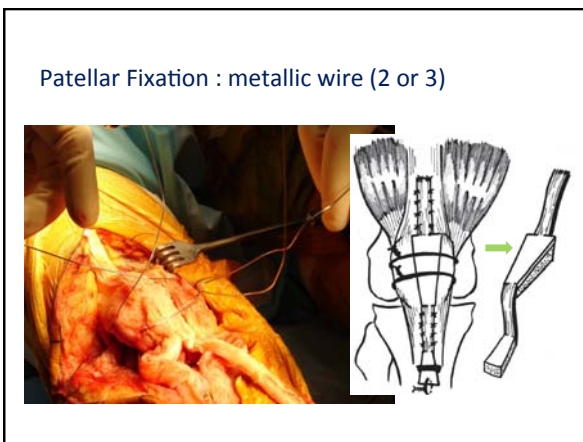
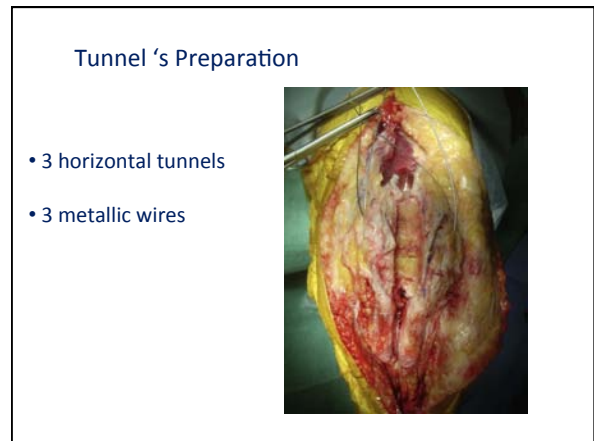
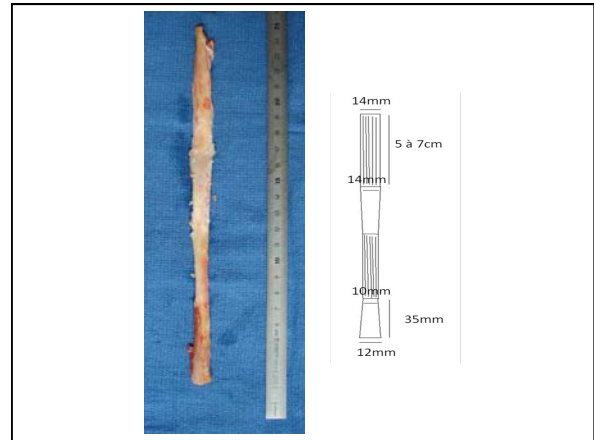
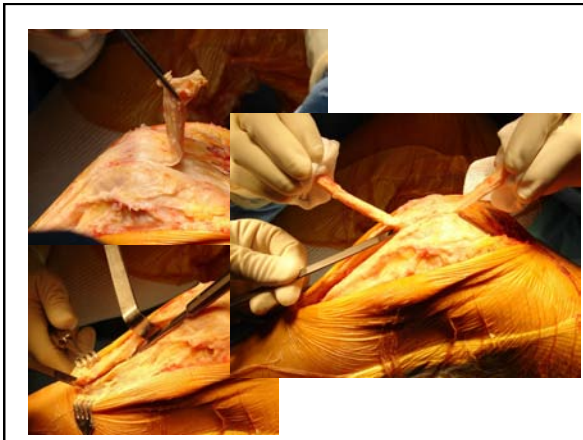
### chronic rupture of patellar tendon

Extensor mechanism graft  
autograft or allograft



### Autograft





**Tibial Fixation : metallic wire fixed on a metallic screw post. + staples**



**Extensor mechanism allograft**

Same procedure  
 Bigger graft and shorter operative time  
 CL knee preservation

- Planification
- Contamination risk
- Preop Sizing ( CL knee)
- Slower rehabilitation
- PDS® band augmenting



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Contents lists available at ScienceDirect

**The Knee**

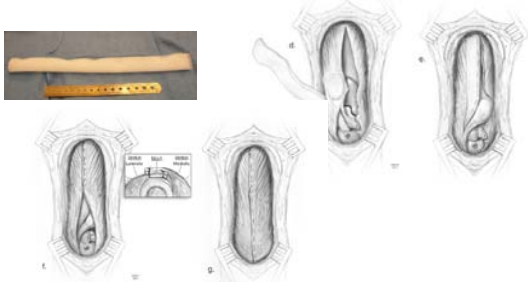
Treatment of chronic disruption of the patellar tendon in Osteogenesis Imperfecta with allograft reconstruction

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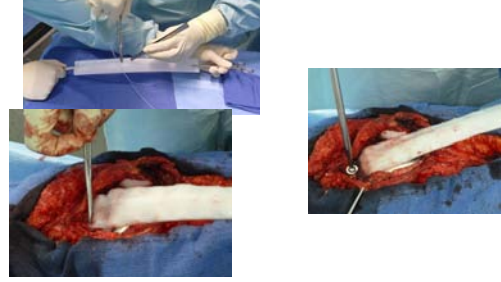
### futures perspectives on TKA

- Technique with synthetic mesh



### Hansen's technique

- Technique with synthetic mesh



### Conclusion

Challenging surgery

Prognosis = anatomical restitution