

# The painful total knee: How dealing with it?

M Bonnin. Centre Orthopédique Santy Lyon.  
France

**PAINFUL TKA**  
*(1 year post surgery)*

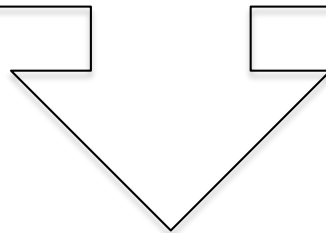
PAINFUL TKA  
*IDENTIFIED CAUSE*

- Early loosening
- Malposition
- Malsizing
- Infection
- Patella
- Fracture
- ...

PAINFUL TKA  
*UNEXPLAINED PAIN*

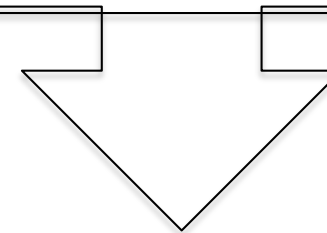
# The problem: The « unexplained » pain

PAINFUL TKA  
IDENTIFIED CAUSE



Revision = successful

PAINFUL TKA  
UNEXPLAINED PAIN



Revision= failures



# The problem: The « unexplained » pain

**PAINFUL TKA**

**UNEXPLAINED PAIN**

# The problem: The « unexplained » pain

PAINFUL TKA  
*Free Interval*

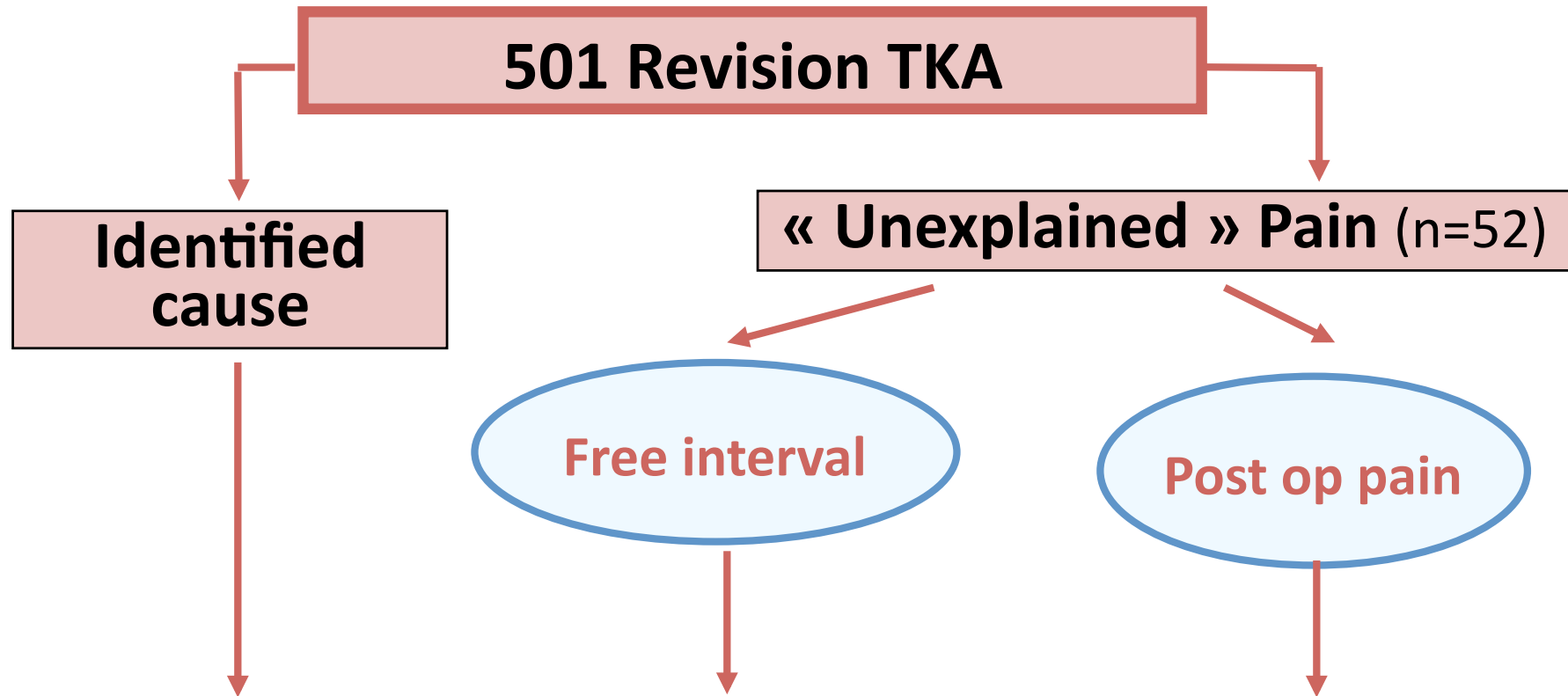
PAINFUL TKA  
*No Free Interval*

Mechanical complication

?

# Results of revisions TKA

• Symposium SOFCOT 2000



KS Score (/200)	<b>140 ± 43</b>		<b>150 ± 24</b>		<b>114 ± 7</b>
Pain Score	<b>37 ± 15</b>		<b>39 ± 13</b>		<b>23 ± 15</b>

# The problem: The « unexplained » pain

*Surgeon temptations:*

- « *It's in your head* »
- « *My prosthesis is doing well* »

***That's wrong!***

- Biology: normal



# Pain IS NOT influenced by patient's factors

M Bonnin et al. KSSTA 2011

- ✓ Brander: CORR 2007
- ✓ Brander: CORR 2003
- ✓ Rastogi: Health and QoL 2007
- ✓ Riddle: CORR 2010
- ✓ Roth: Pain research man. 2007

- ✓ Gender
- ✓ Age
- ✓ Level of pre-op pain

*No influence on residual pain*

*Pain → Depression*

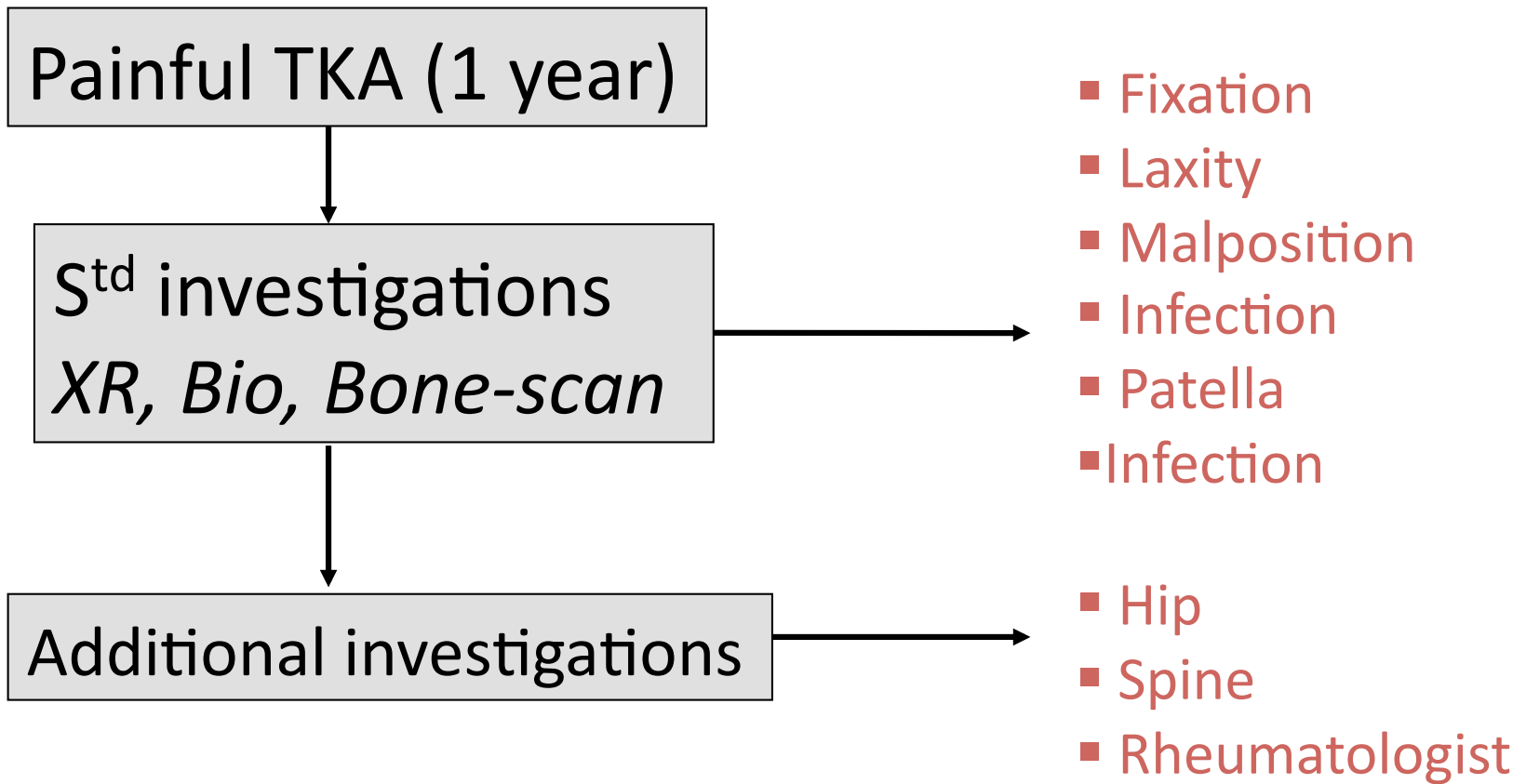
# Uncomplicated TKA $\neq$ Optimal TKA

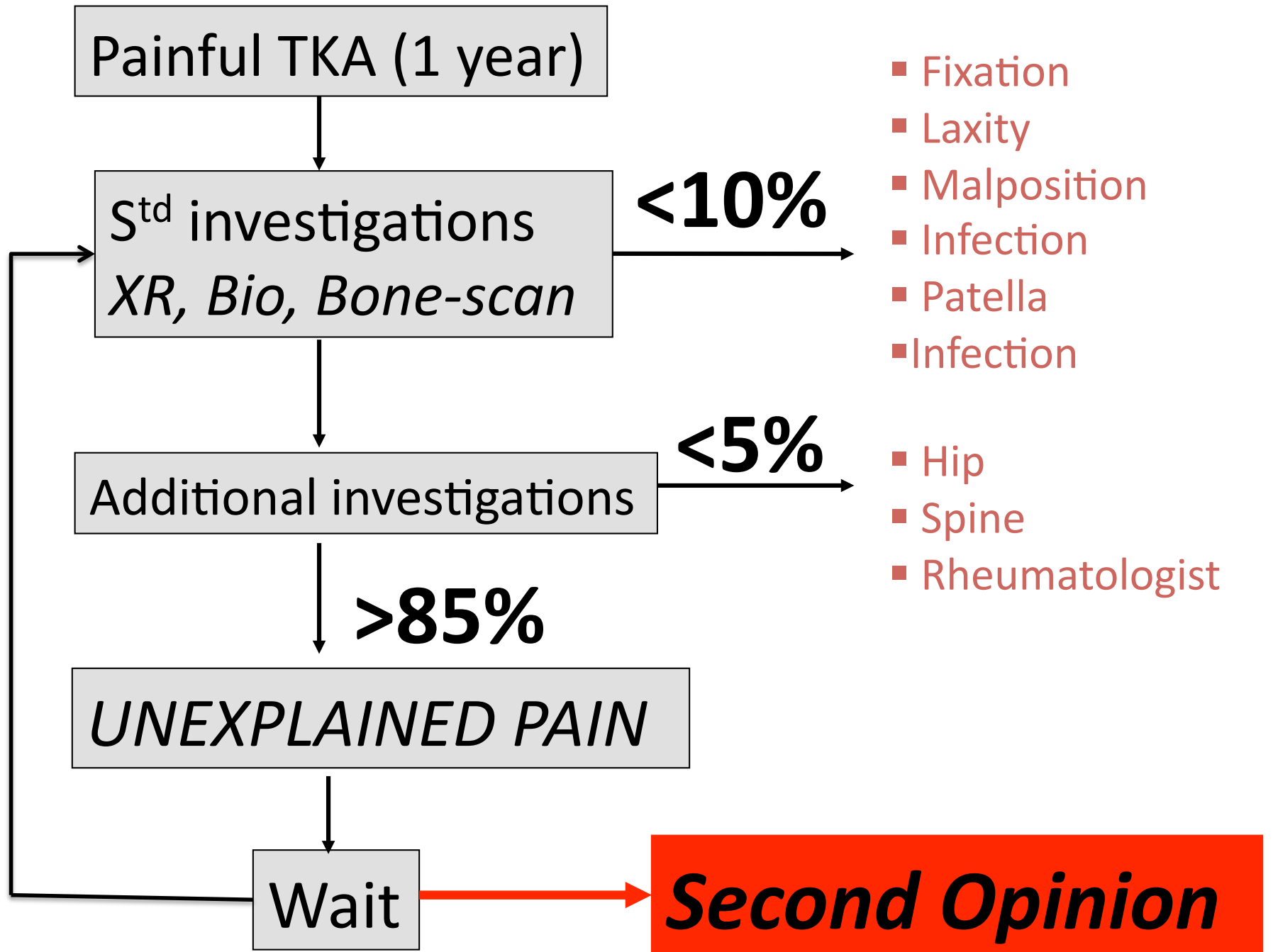
*Optimal result is a matter of 1mm or 1°*

Subtle anomalies are unvisible on XR

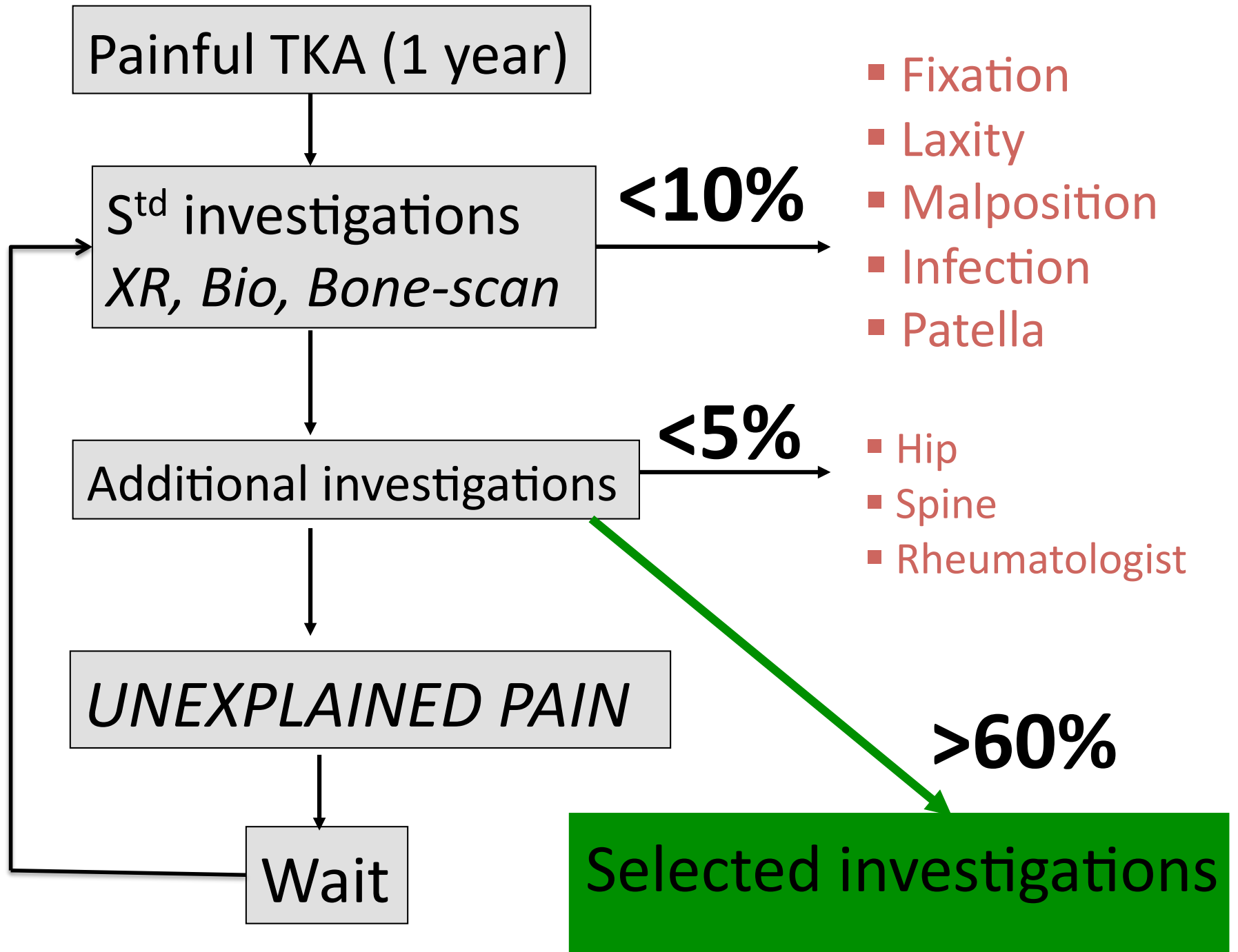
Most XR are « Normal » in painful TKA

« Unexplained » pain is not unexplainable!









# Hidden cause of pain: the soft tissues

- Overtight TKAs'
- Joint line level
- Malrotations

- Laxity in flexion
- Subtle malpositions

- Oversized TKAs'

**TOO TIGHT**

**TOO LOOSE**

**IMPINGEMENTS**

# $TC^{99}$ Bone scan & SPECT-CT

Hirschmann et al. *BMC Musculoskeletal Disorders* 2011, 12:36  
<http://www.biomedcentral.com/1471-2474/12/36>



RESEARCH ARTICLE

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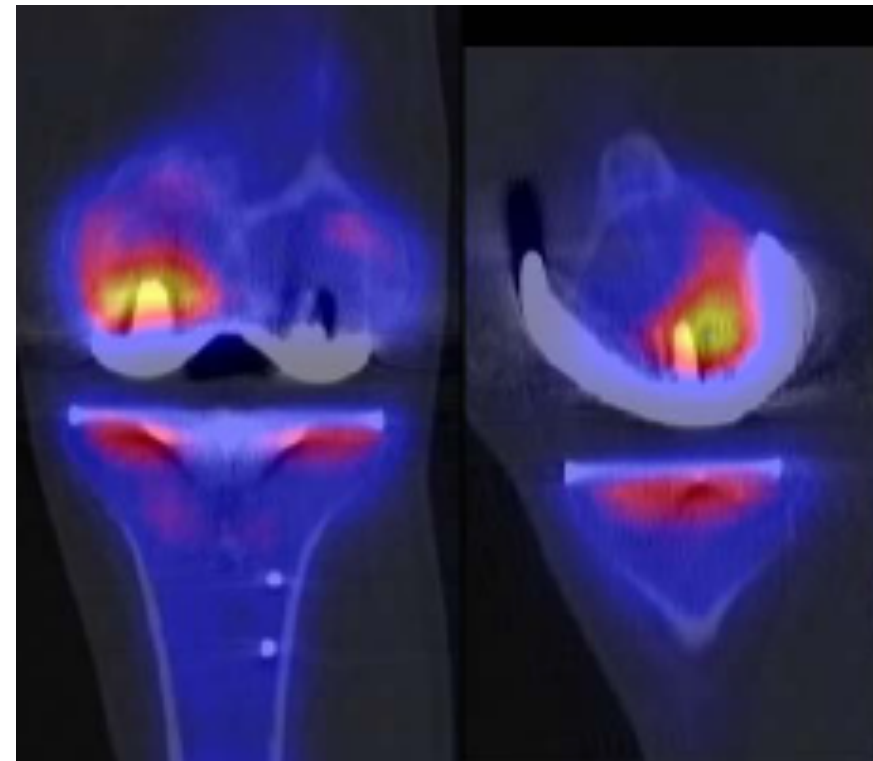
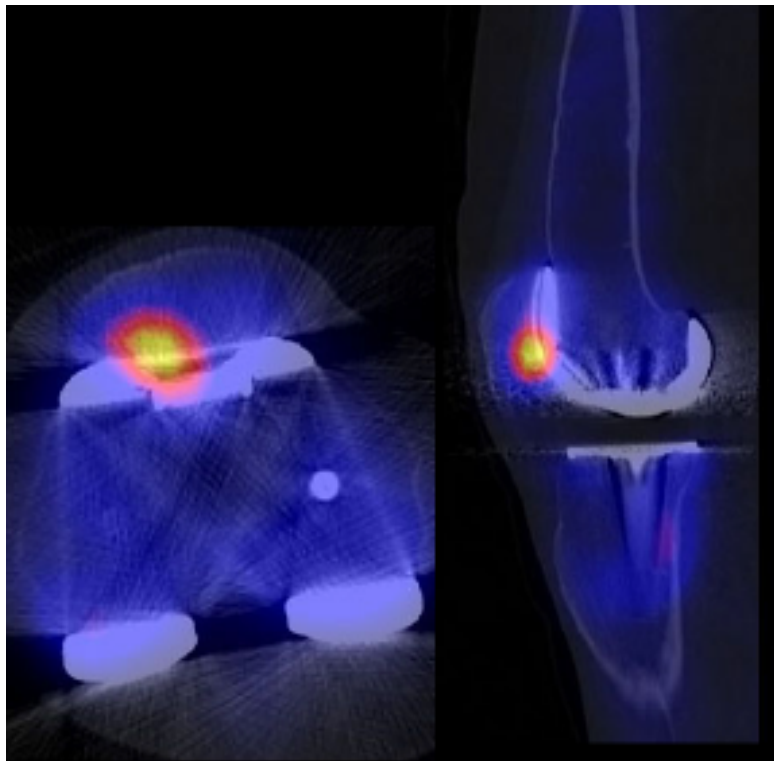
Clinical value of SPECT/CT for evaluation of patients with painful knees after total knee arthroplasty—a new dimension of diagnostics?

Michael T Hirschmann<sup>1\*</sup>, Praveen Konala<sup>2</sup>, Farhad Iranpour<sup>2</sup>, Anna Kerner<sup>3</sup>, Helmut Rasch<sup>3</sup>, Niklaus F Friederich<sup>1</sup>

Q J NUCL MED MOL IMAGING 2009;53:41-50

FDG-PET in patients with painful hip and knee arthroplasty: technical breakthrough or just more of the same

P. REINARTZ



# CT-scan analysis

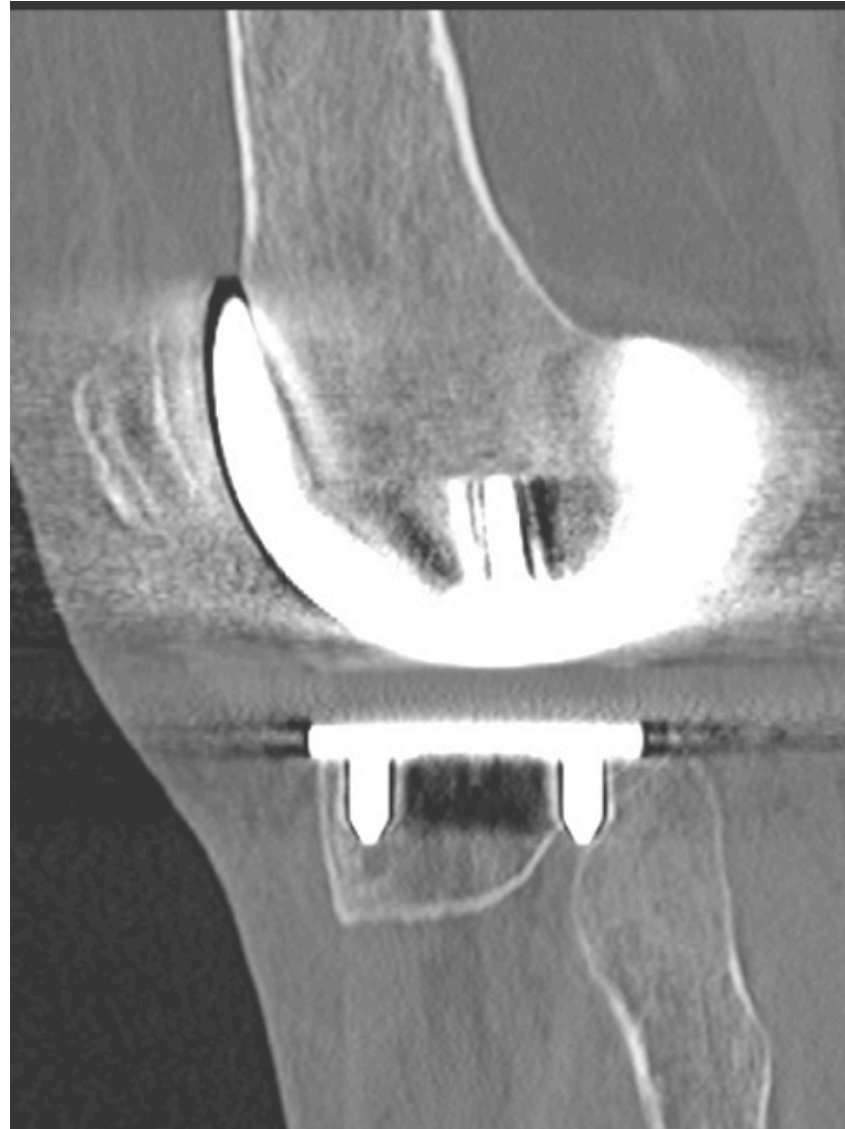
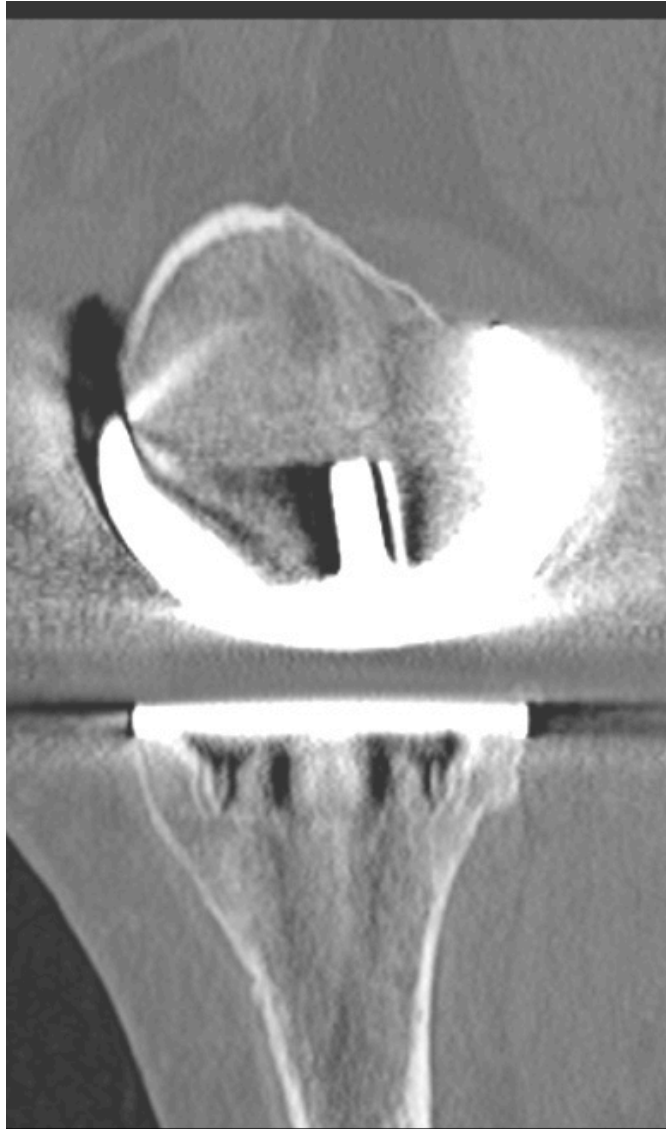
- ✓ Analyse the DICOM image by your own
- ✓ Redo the slices
- ✓ Use the good planes
- ✓ Adjust the density

Images from radiologist are NEVER in the anatomic planes

# Coronal plane and oblique

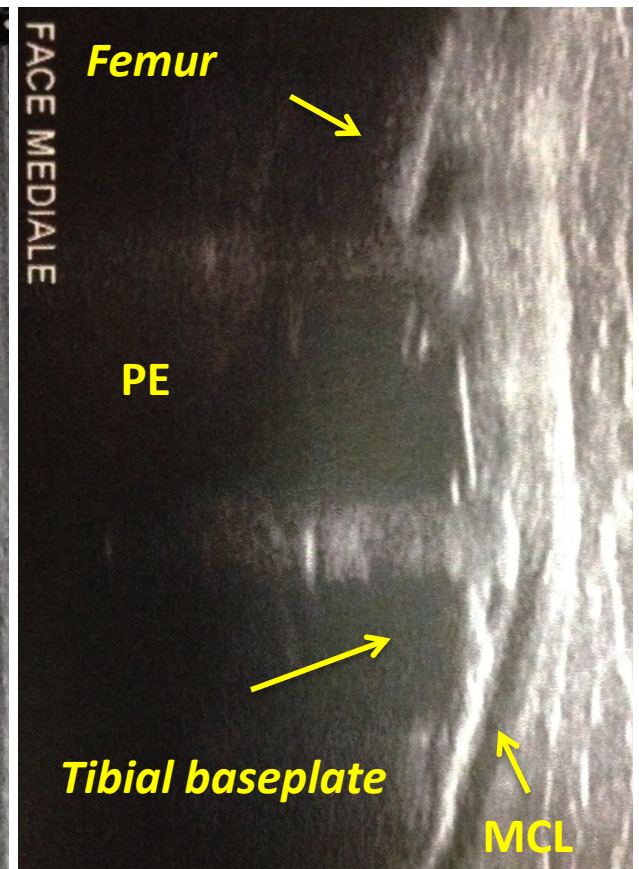
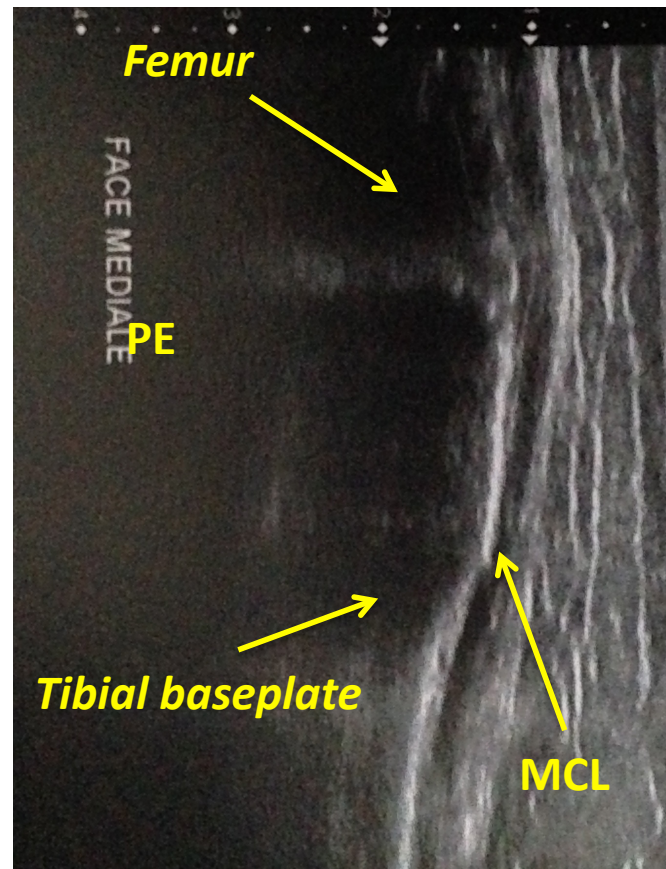
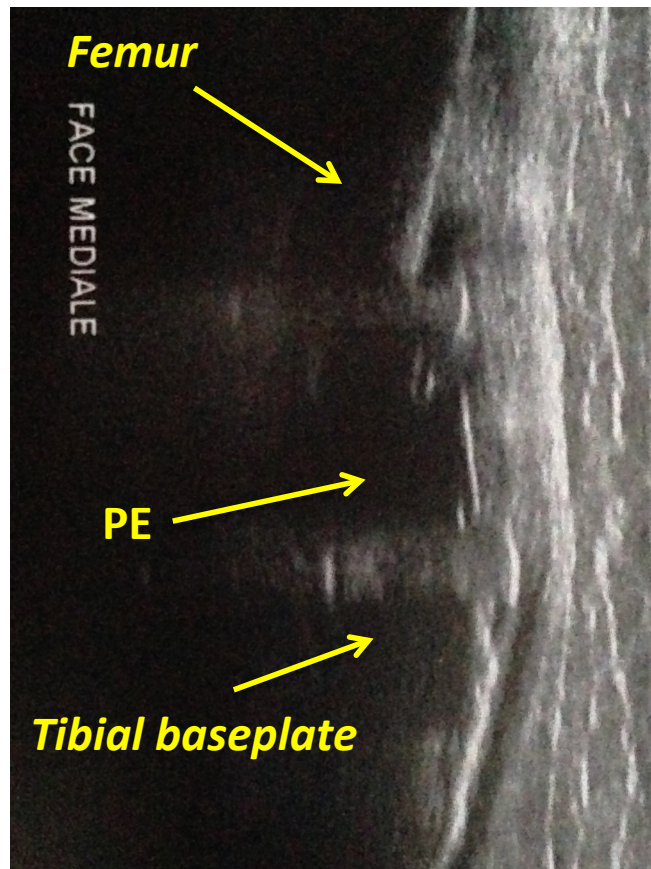


# Sagittal plane medial and lateral

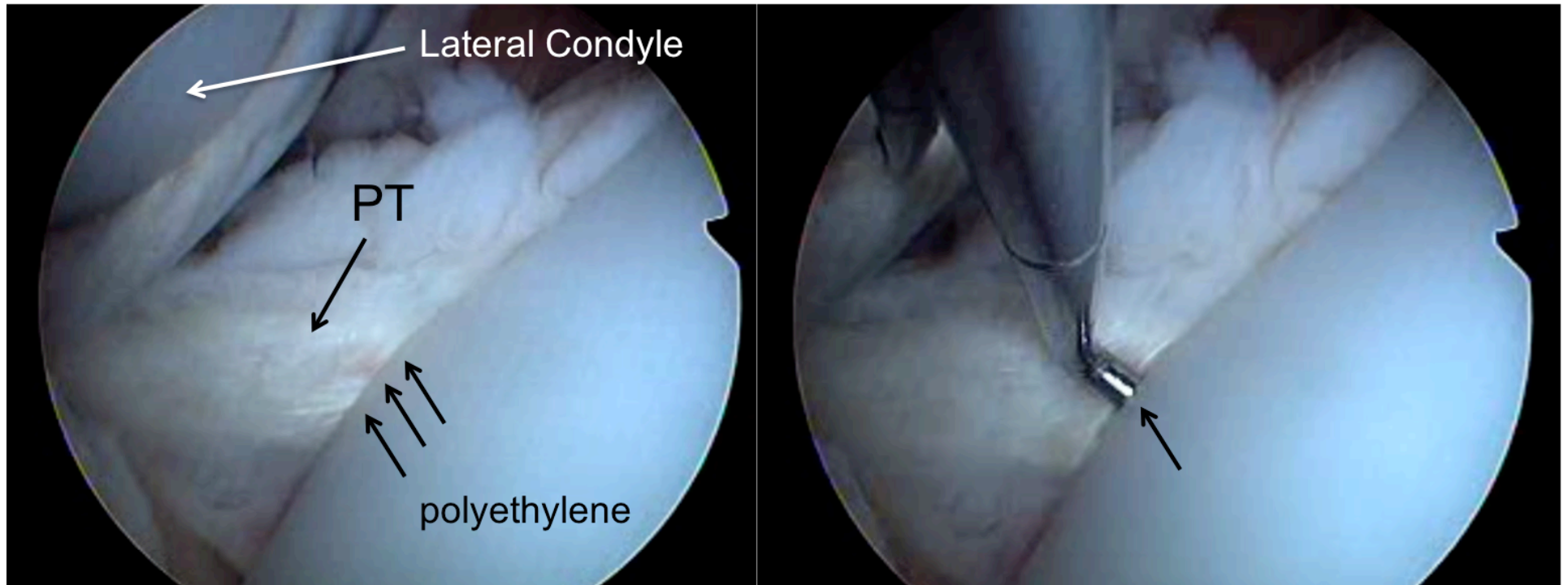




# Ultrasonography



# Arthroscopy



Normosized TKA. Residual pain. PT impingement with PE



# Tibio-popliteus impingement



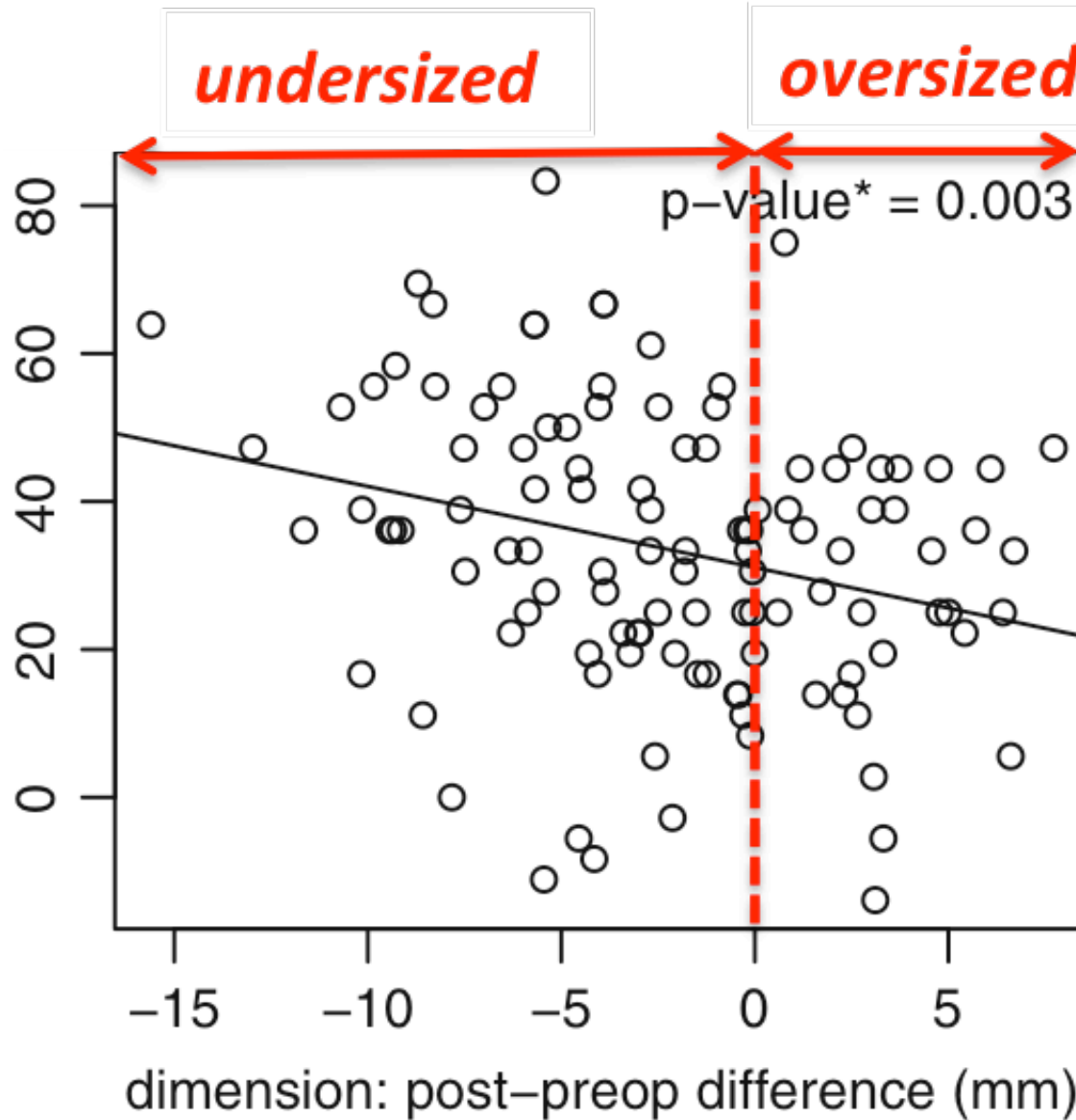
*Hidden Cause of Pain #1*

Oversizing (n=24)



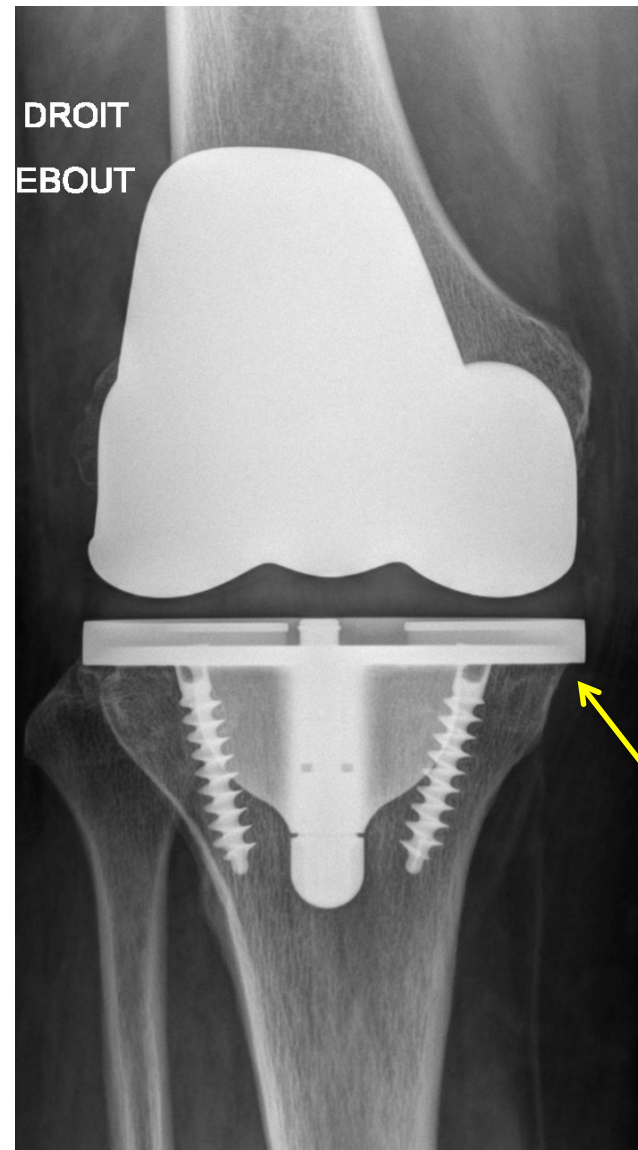
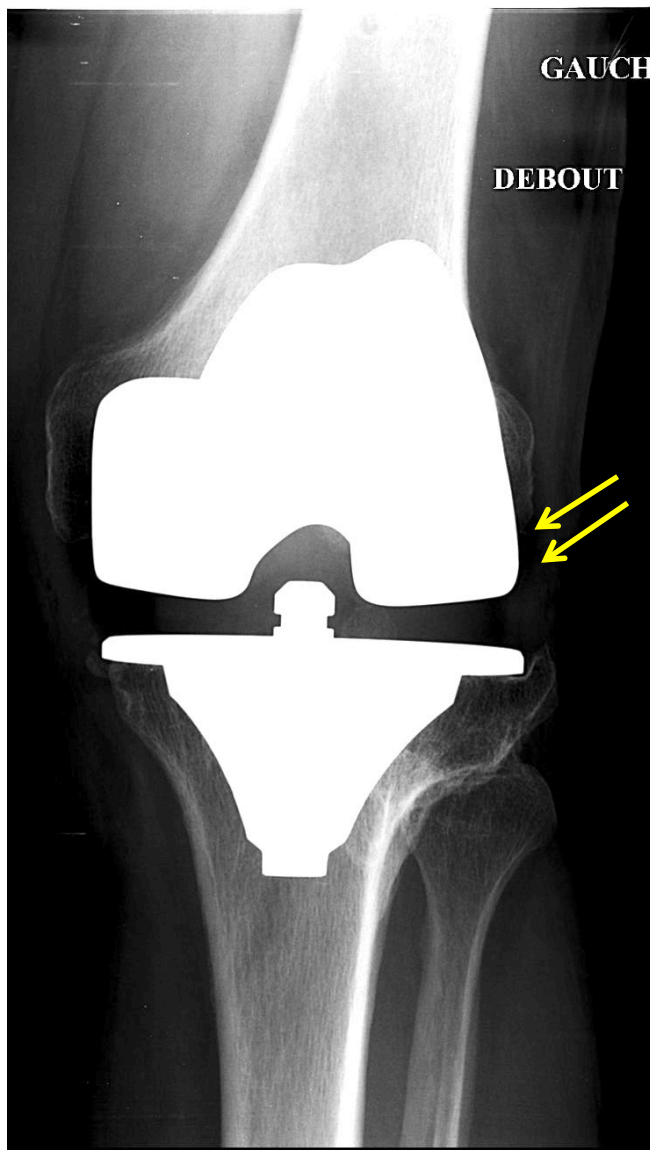
# Gain of Pain Score after TKA

M Bonnin et al. KSSTA 2012

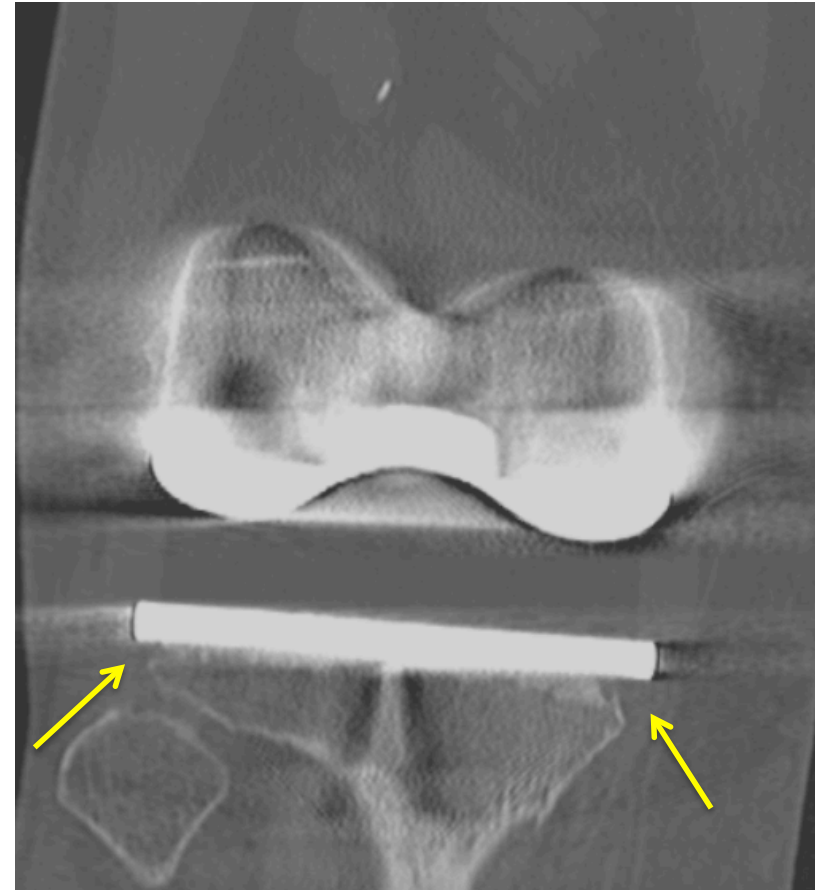




Diagnosis: XR = 30%



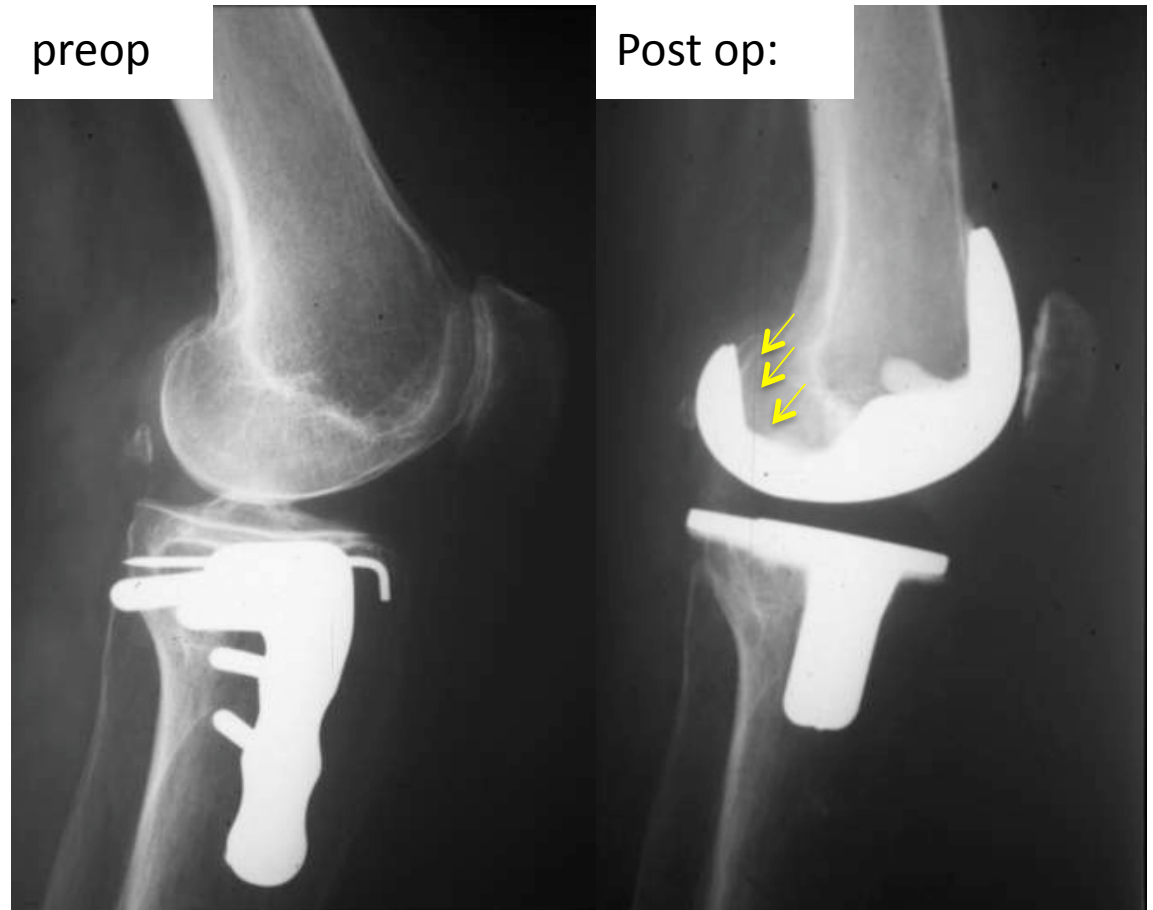
Diagnosis: CT-scan = 70%



## Hidden Cause of Pain #2

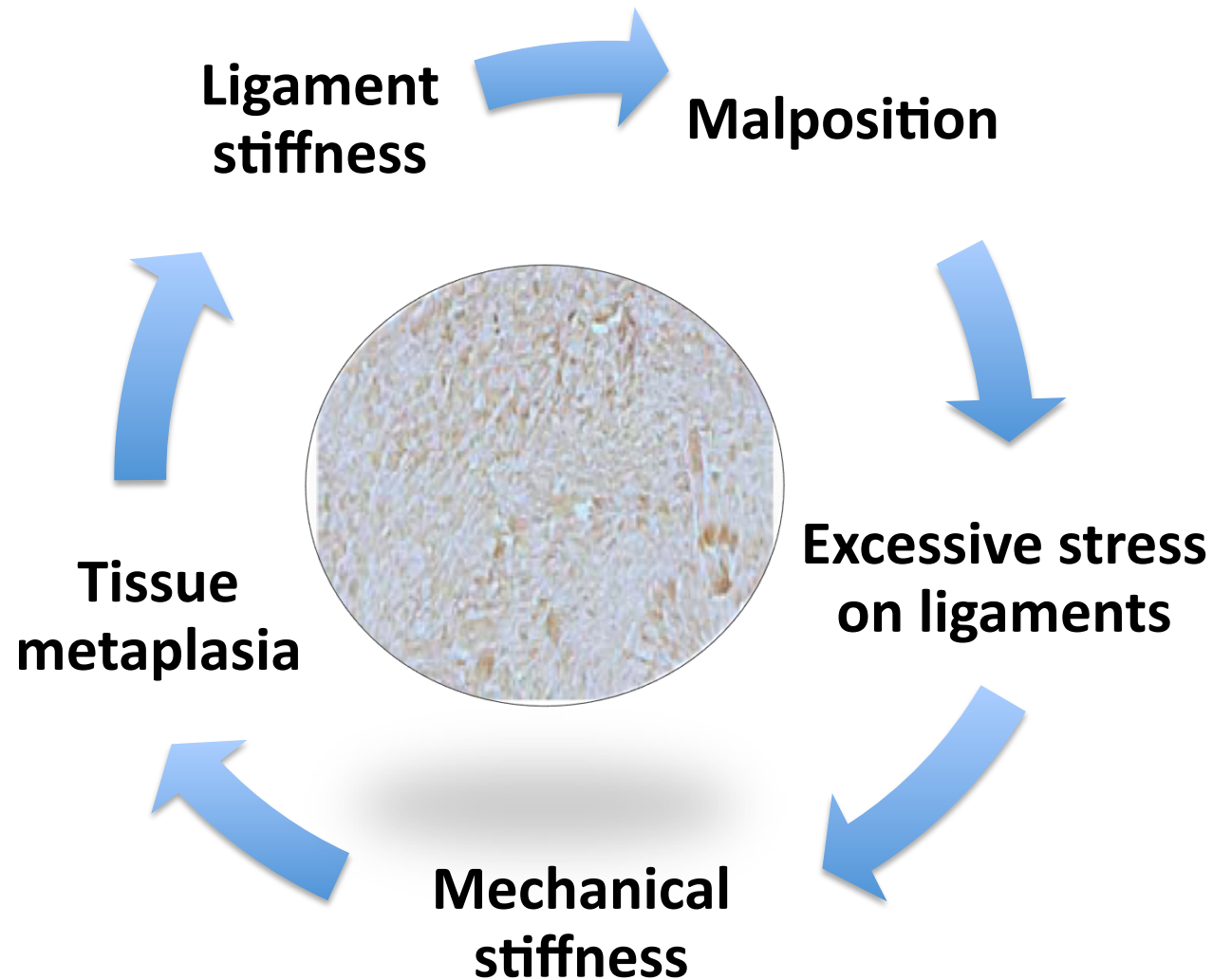
## Overtight lig<sup>ts</sup>

- Painful
- Stiffness
- Inadequate resection
- PE thickness



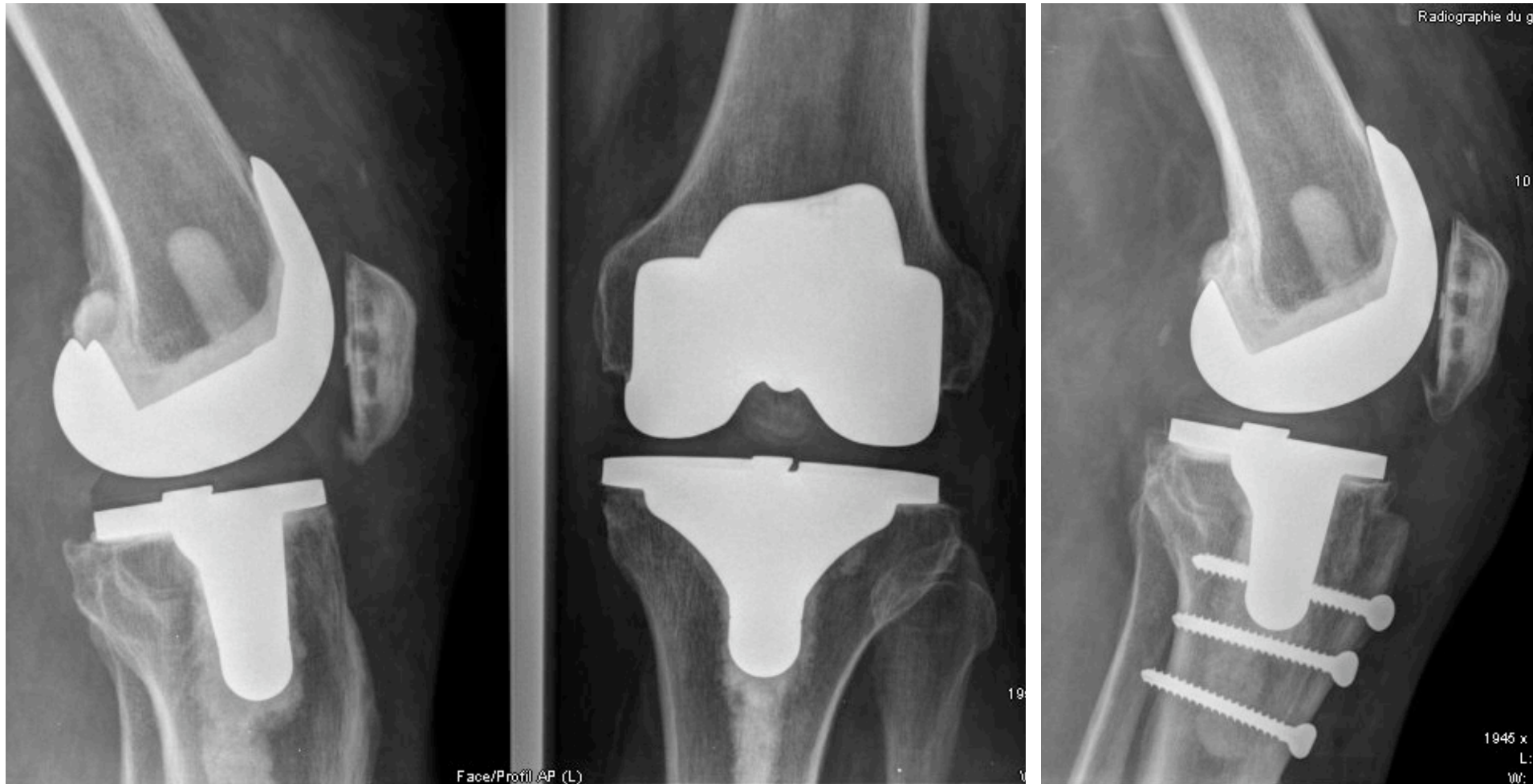
# Consequences of excessive tension

Boldt & Munzinger. International Orthopaedics (2006)



# Hidden Cause of Pain #3

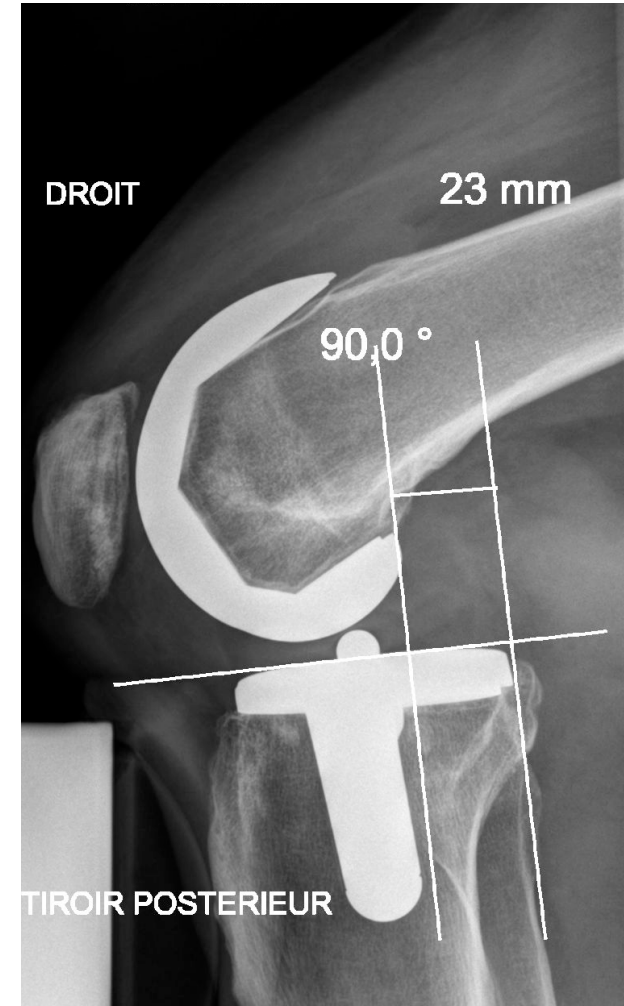
# Patella infera





# Hidden Cause of Pain #4

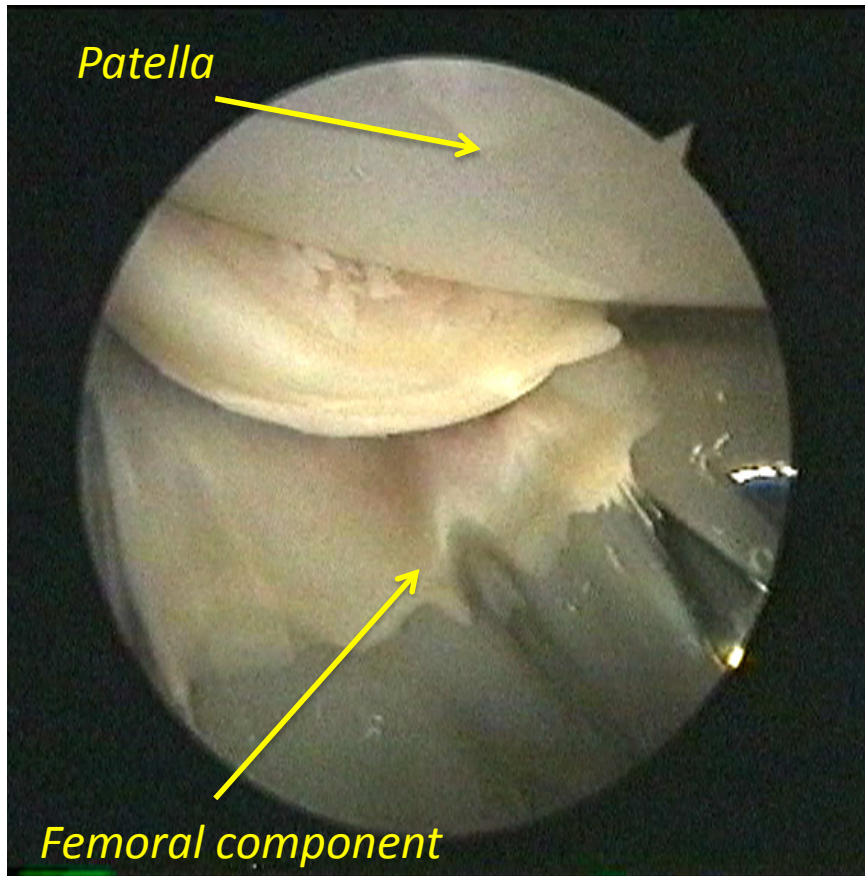
# Laxity in flexion



**Hidden Cause of Pain #5**

Synovium &

osteophytes





*Hidden Cause of Pain #6*

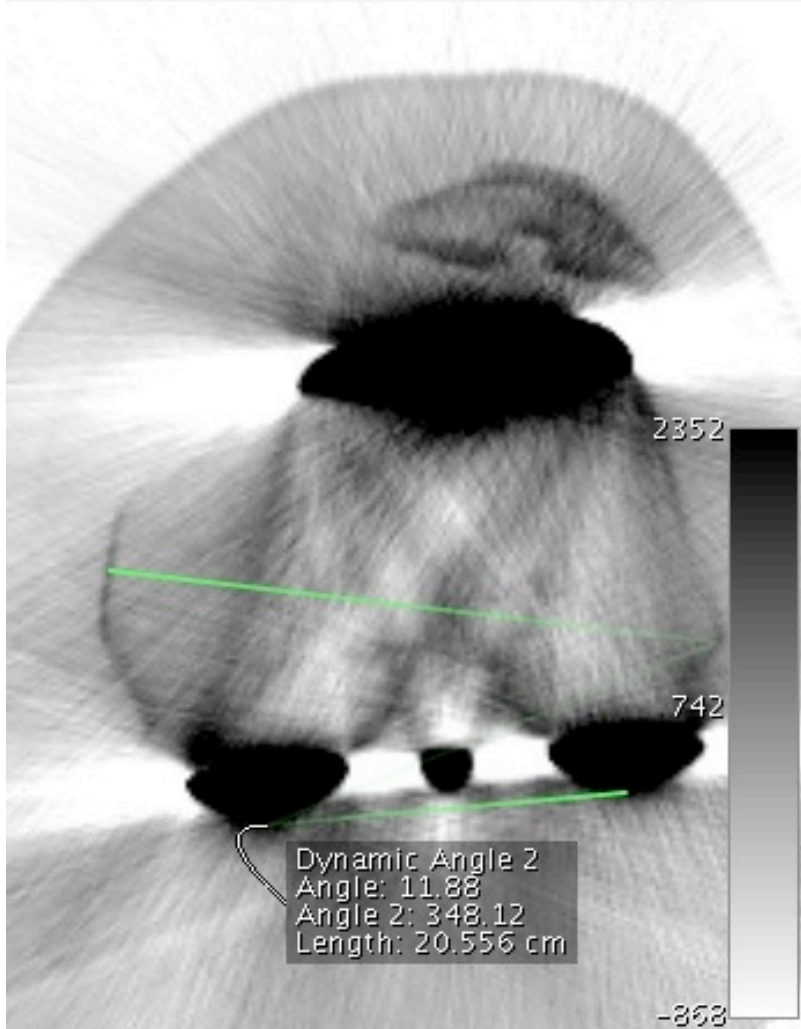
Tibial slope



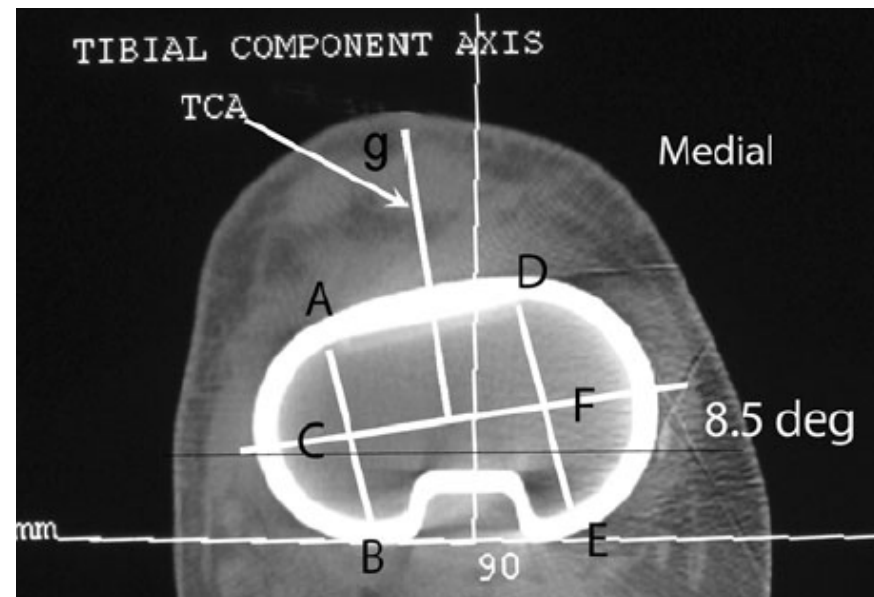
# Hidden Cause of Pain #7

# Malrotation

Femoral component

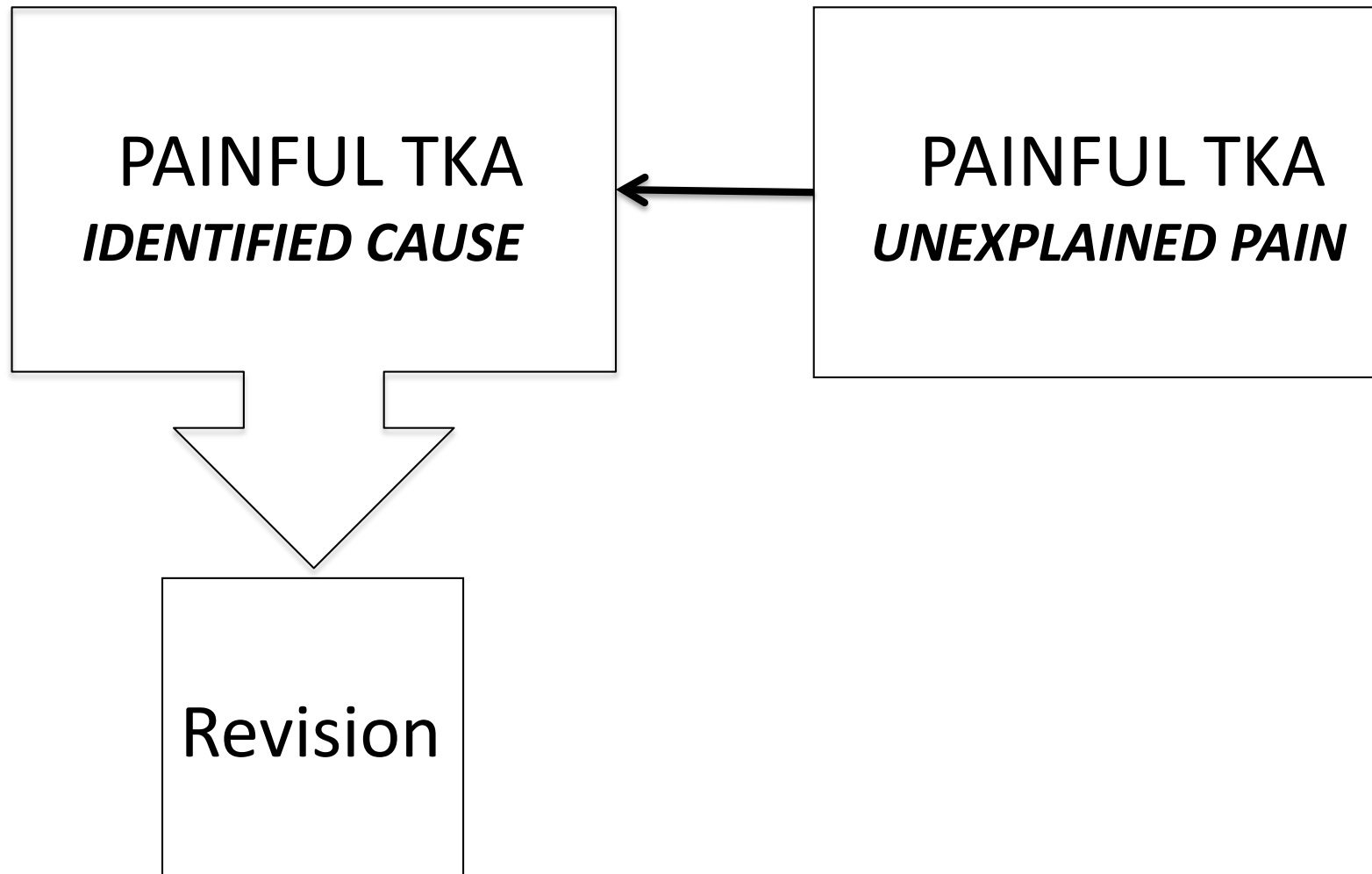


Tibial component

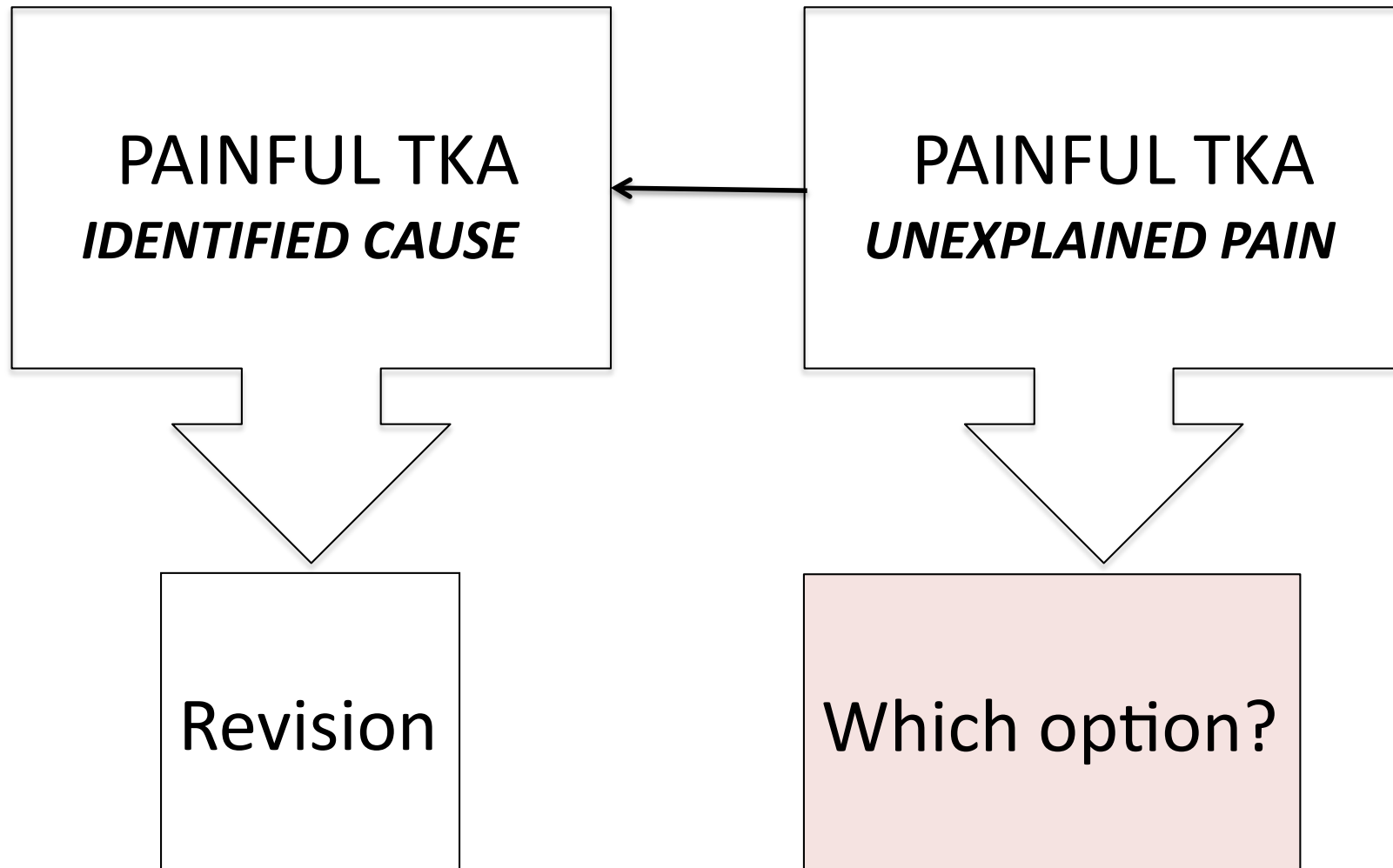


Bédard & Vince. CORR 2011

# « Unexplained » pain: does it really exist?



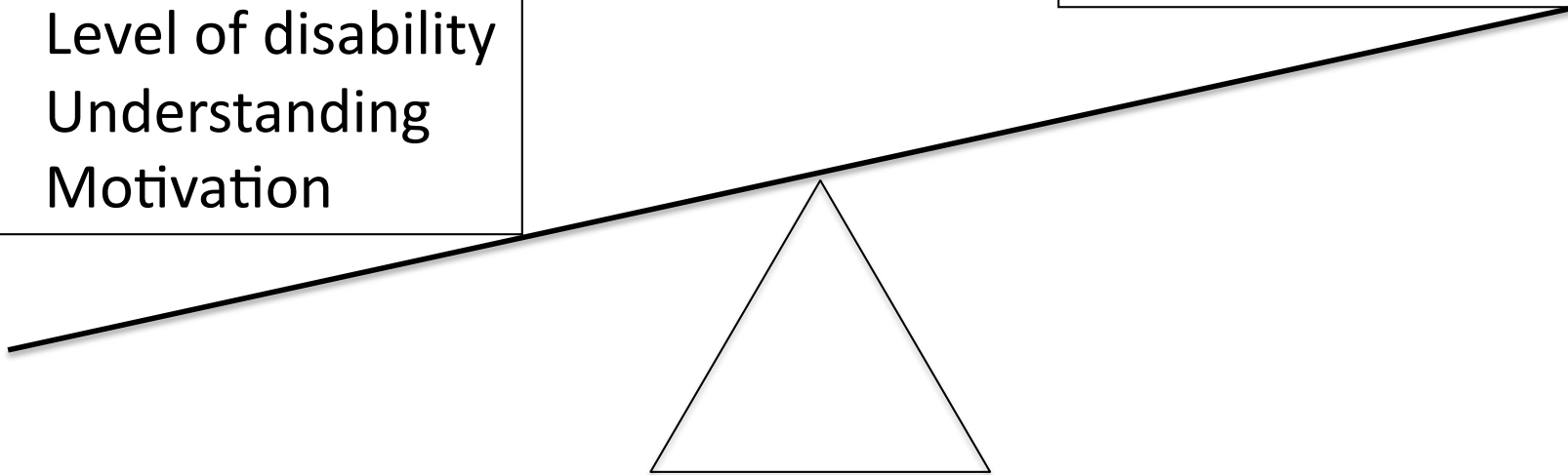
# « Unexplained » pain: does it really exist?



# Conclusion: revise or not revise?

- Level of pain
- Level of disability
- Understanding
- Motivation

- Risks of surgery
- Anticipated difficulties
- N<sup>ber</sup> of previous surgeries







**Thank you**

Toutes les photos de LYON ! <http://www.Lyon-Photos.com>