



TOTAL HIP ARTHROPLASTY FOLLOWING HIP FUSION

Indications, Surgical Technique, Results

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INTRODUCTION

➤ Hip ankylosis

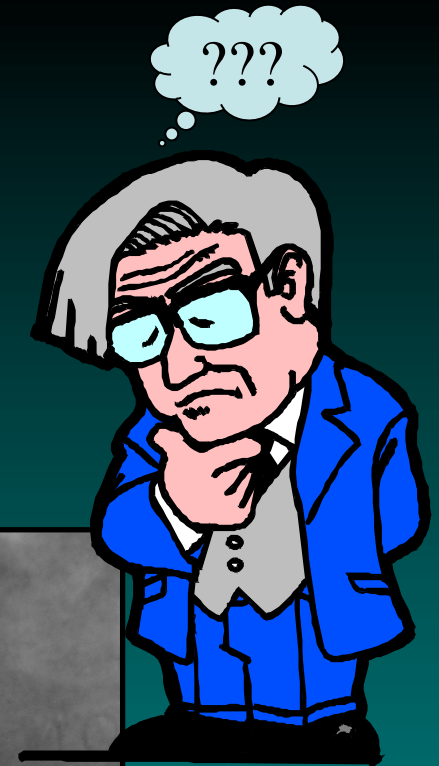
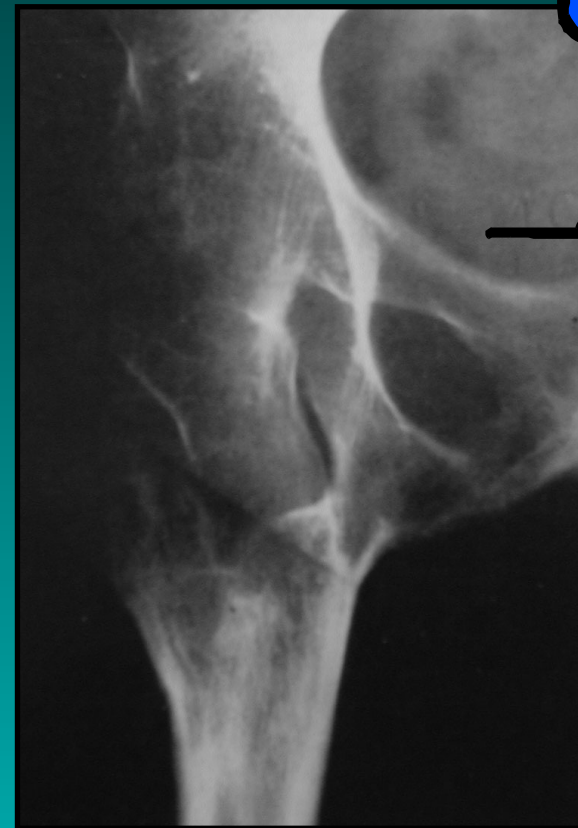
- total loss of mobility
- “spontaneous” VS surgical (arthrodesis)
- degenerative or infectious process
- young patients

➤ Long-term:

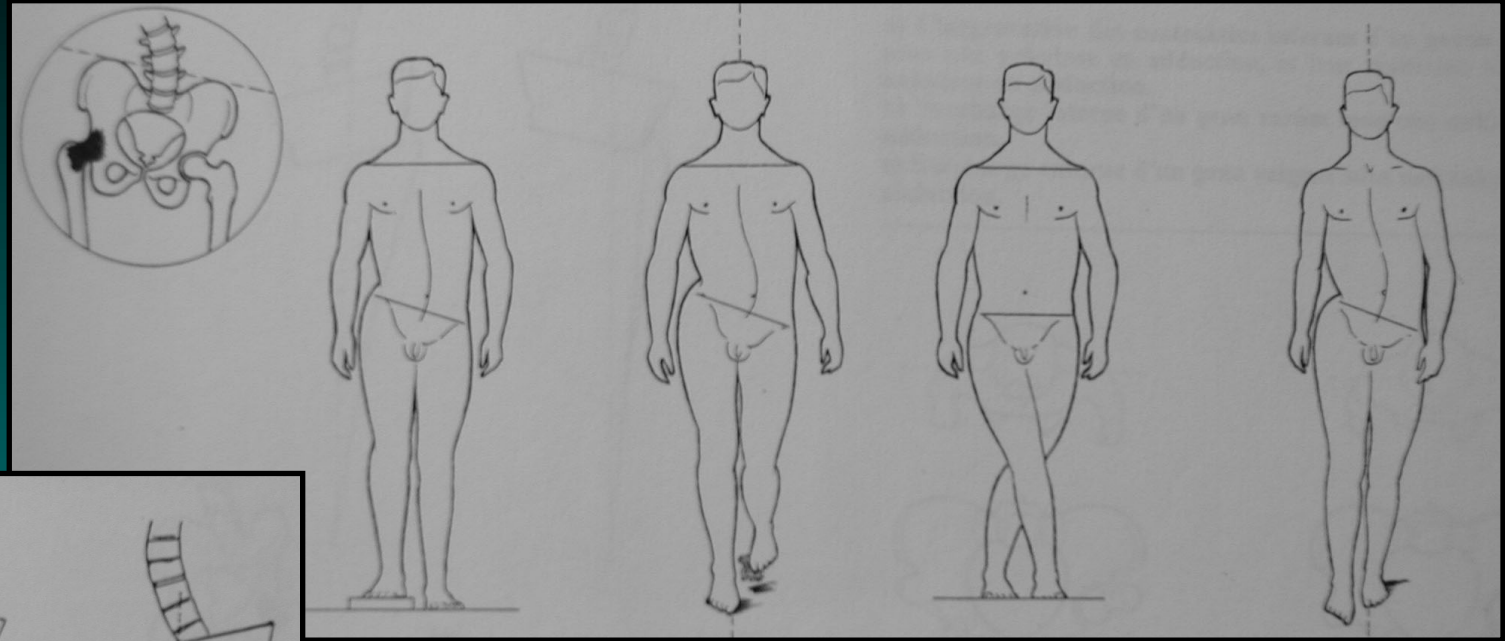
- over-stress related osteoarthritis
- ipsilateral knee and low back pain

(Callaghan et al JBJS 1985, Sponseller et al JBJS 1984)

- Durable stable and painless hip
- Conversion to total hip arthroplasty:
 - technically difficult
 - morbidity
 - hip stability and mobility
 - long-term results
- Think twice +++

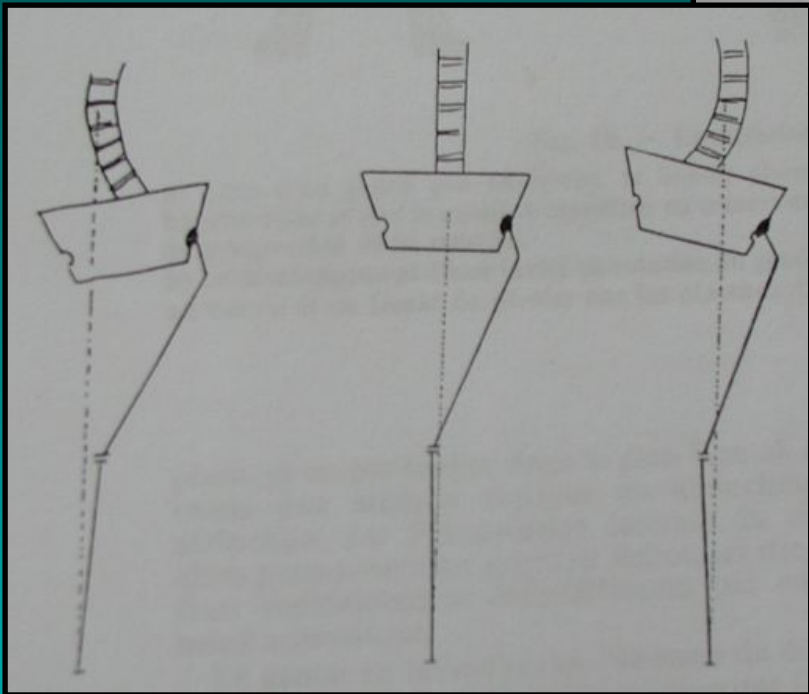
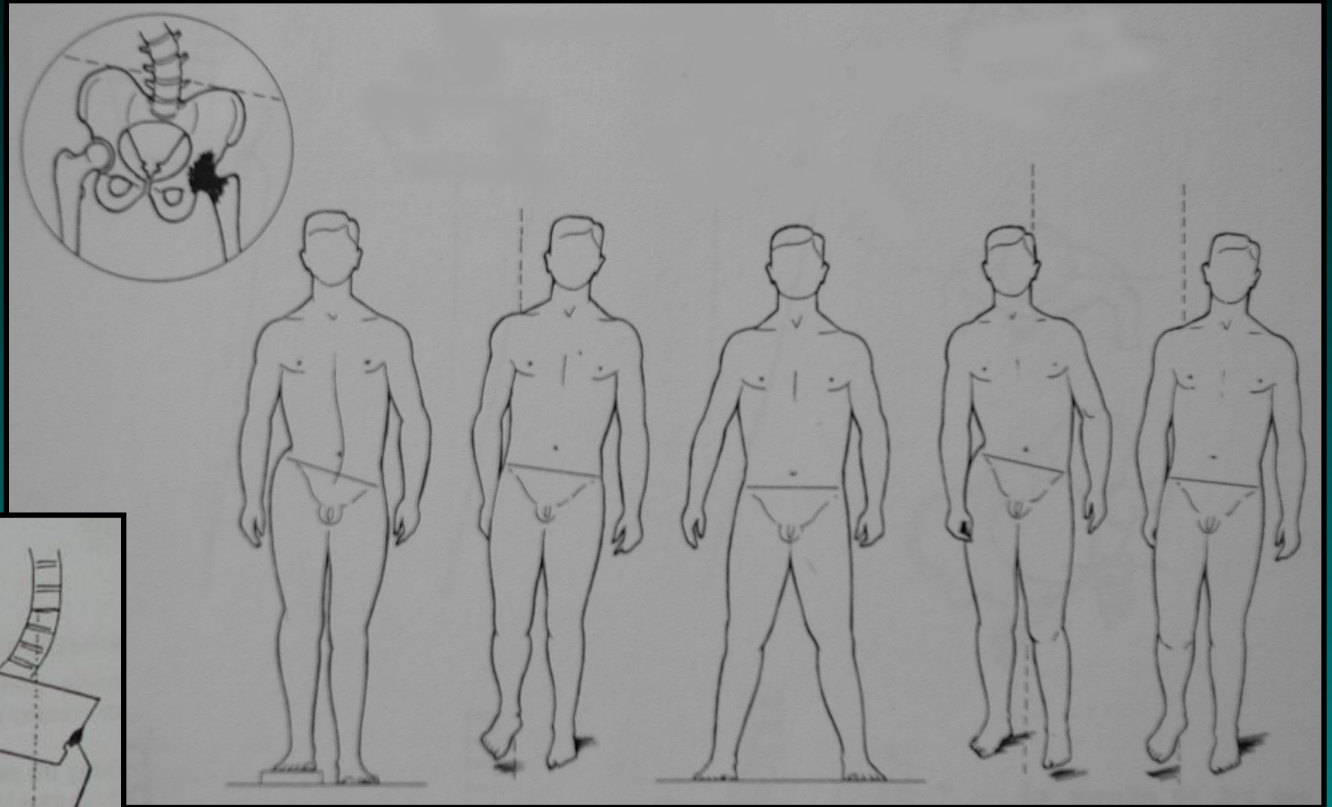


Malposition in adduction



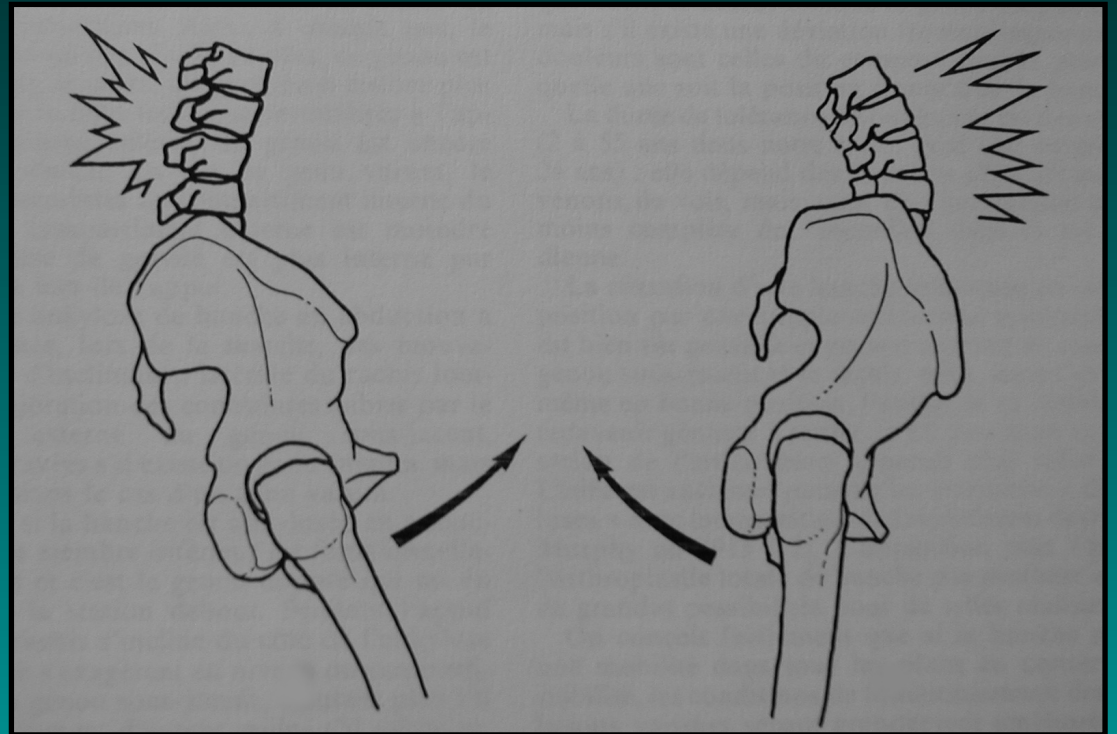
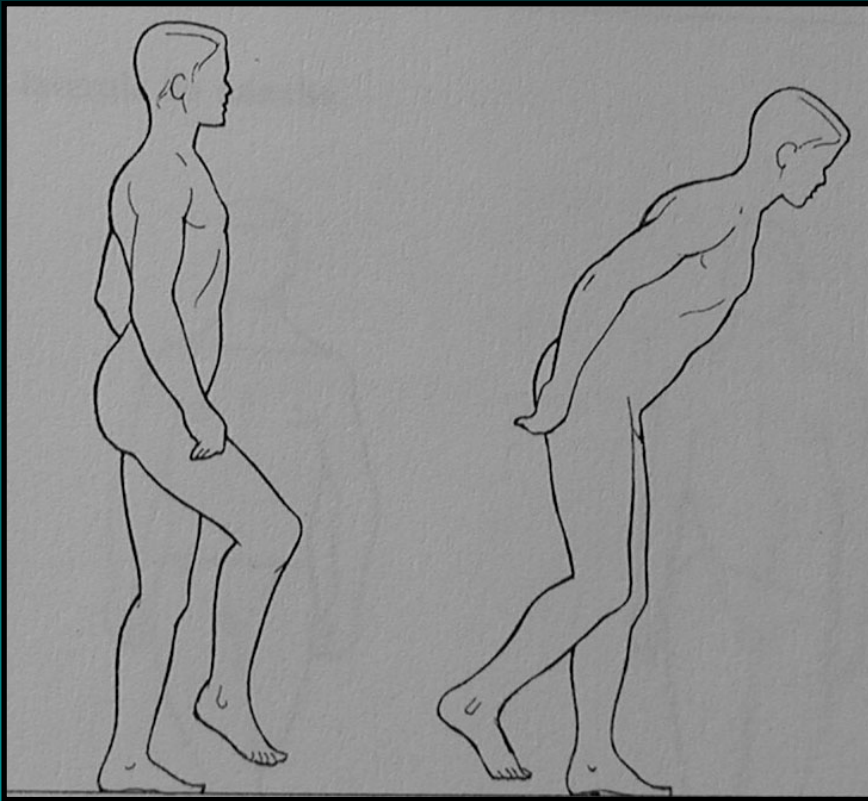
Medial femoro-tibial compartment
Varus

Malposition in abduction

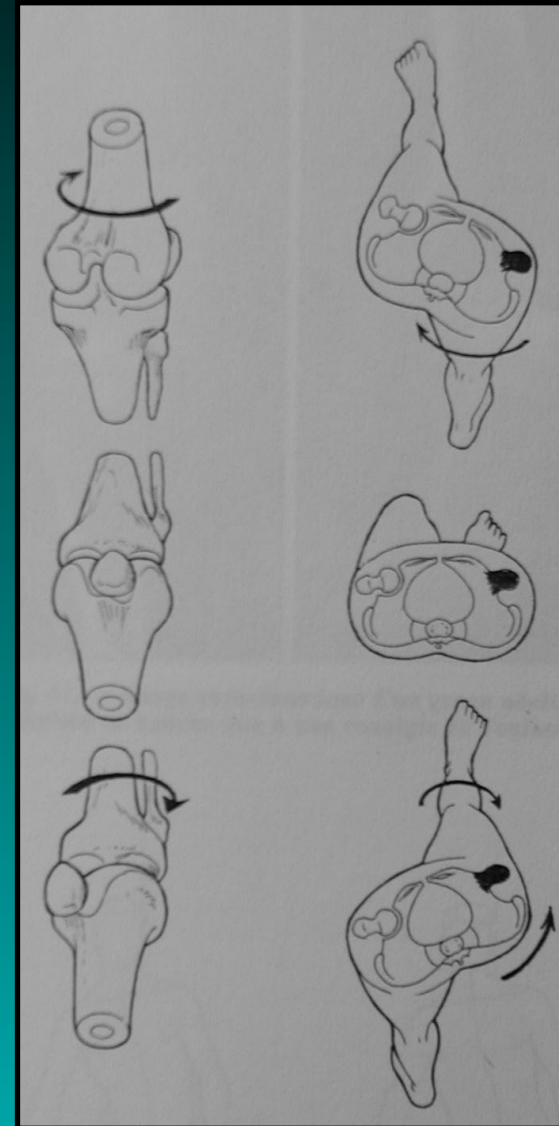
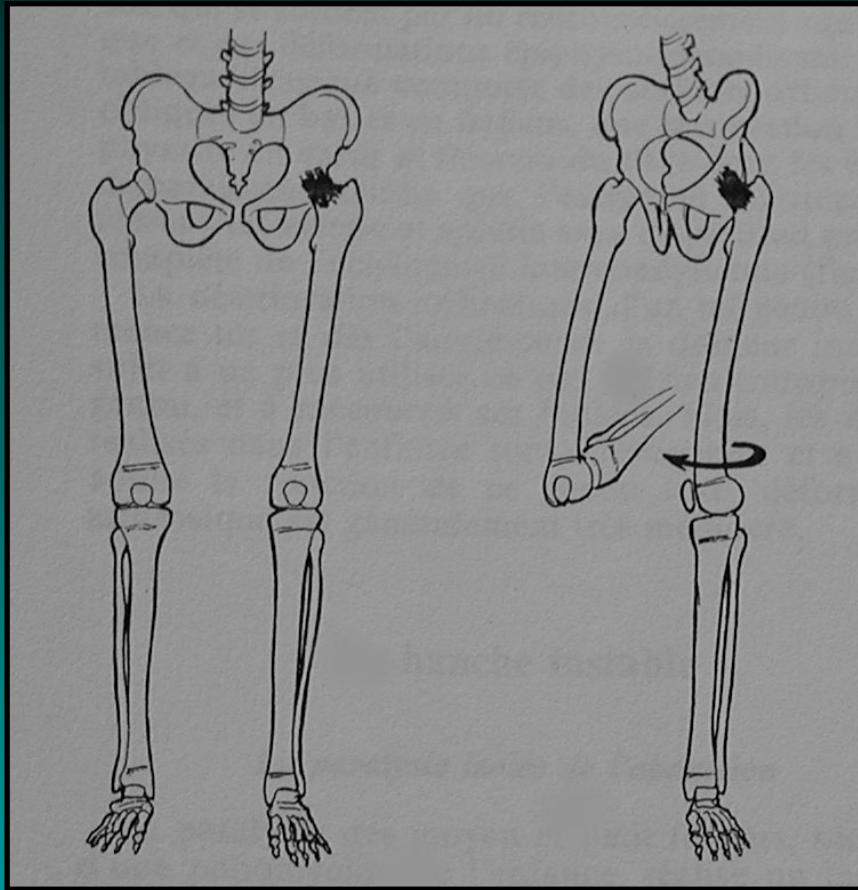


Lateral femoro-tibial compartment
Valgus

Malposition in flexion



Malposition in rotation



Anatomic modifications

- Frequently in high position (CDH)
- Protrusion
- Greater trochanter
- Gluteus muscles



Indications

- Mobility
- Sitting / Walking disability
- Degenerative changes on the ipsilateral knee and low back requiring surgery

Conversion of the fused hip to THA first

- Periarticular muscles (gluteus +++)
 - CT scan
 - electromyogram
 - palpation of the contracting abductors and intra-operative findings

Surgical technique

Preoperative planning and templates +++

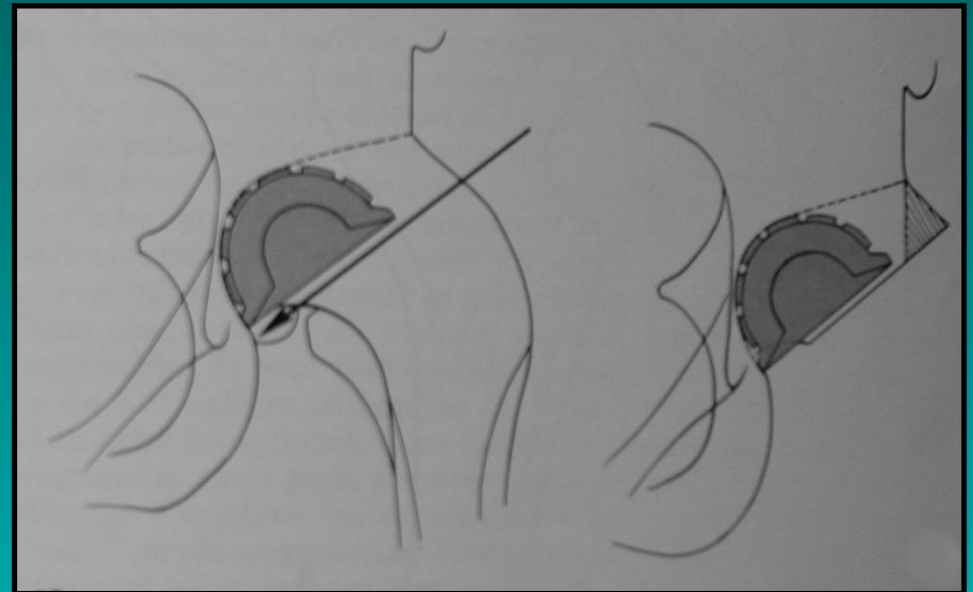
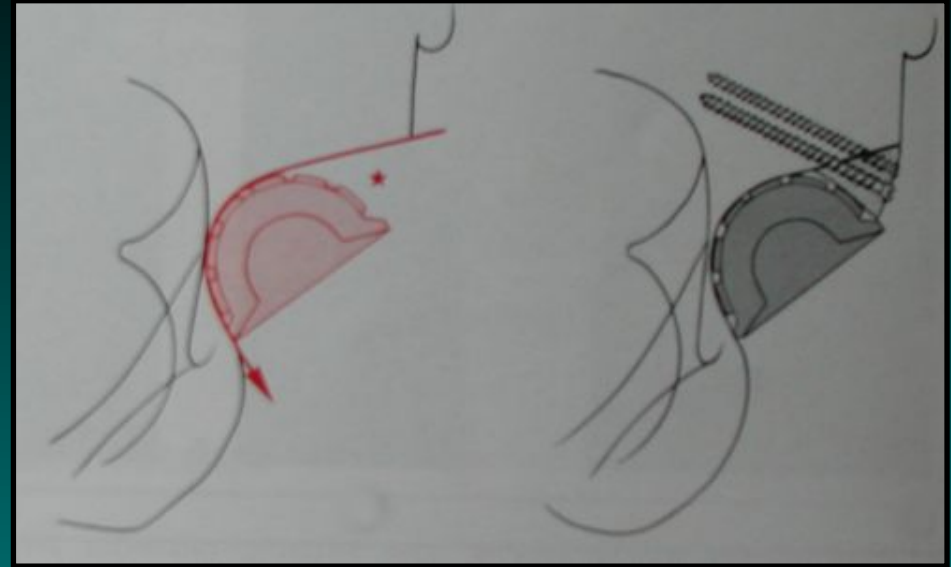
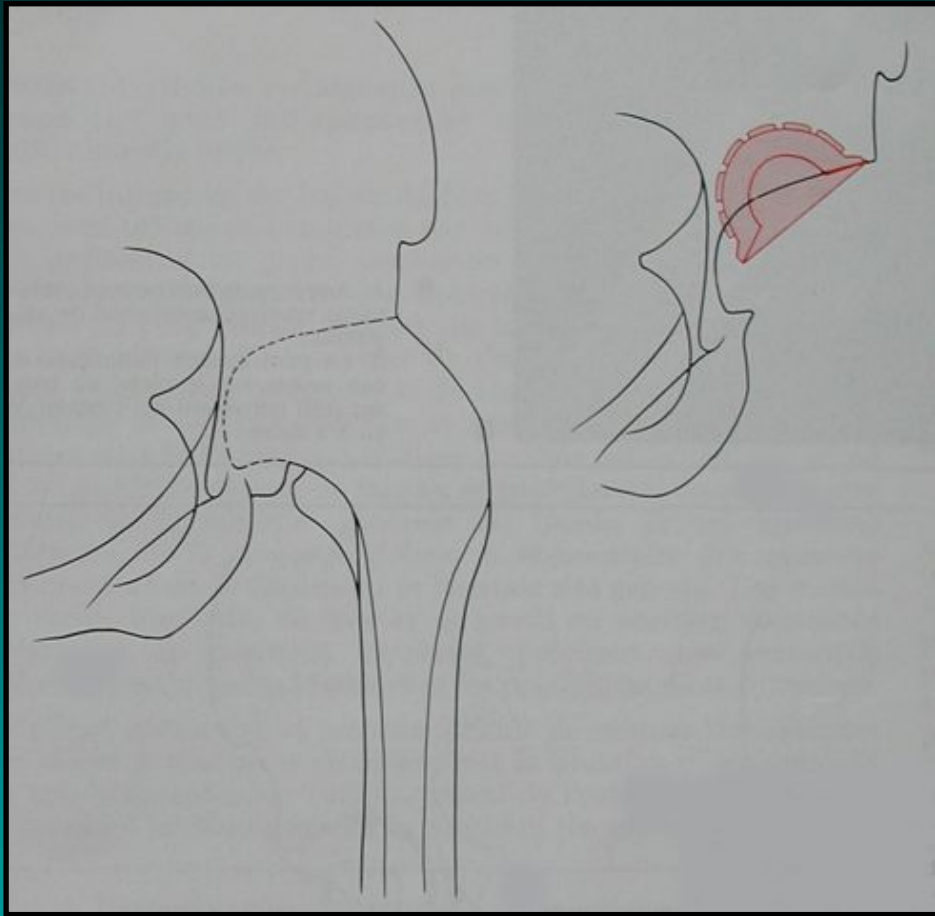
Multiple radiographic views

Approach: trans-trochanteric

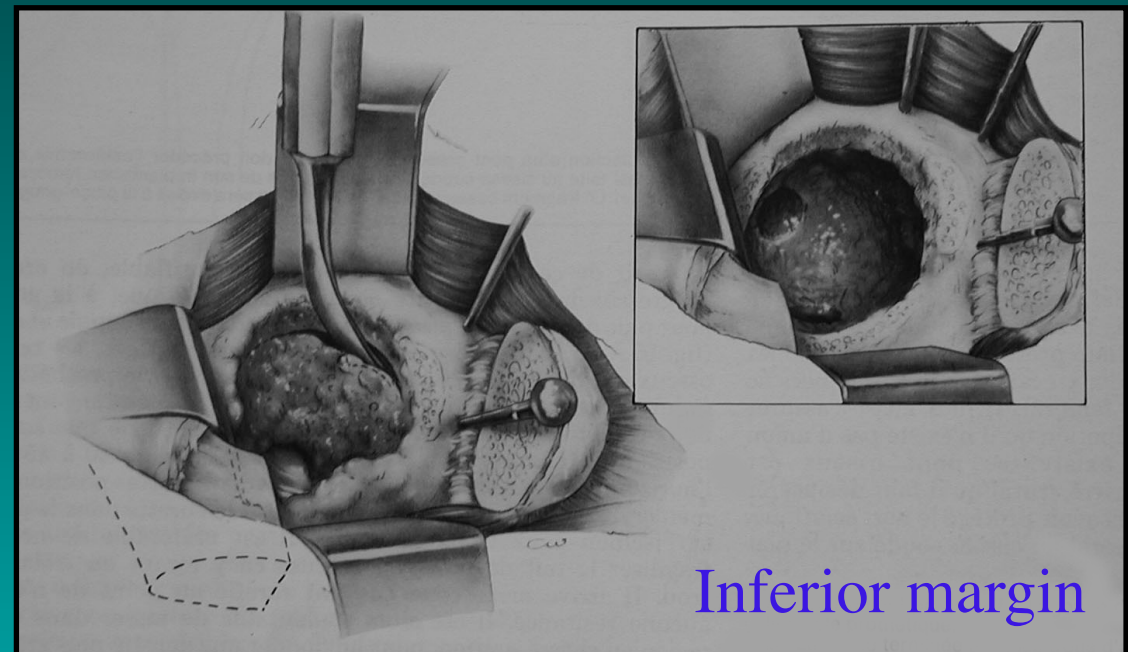
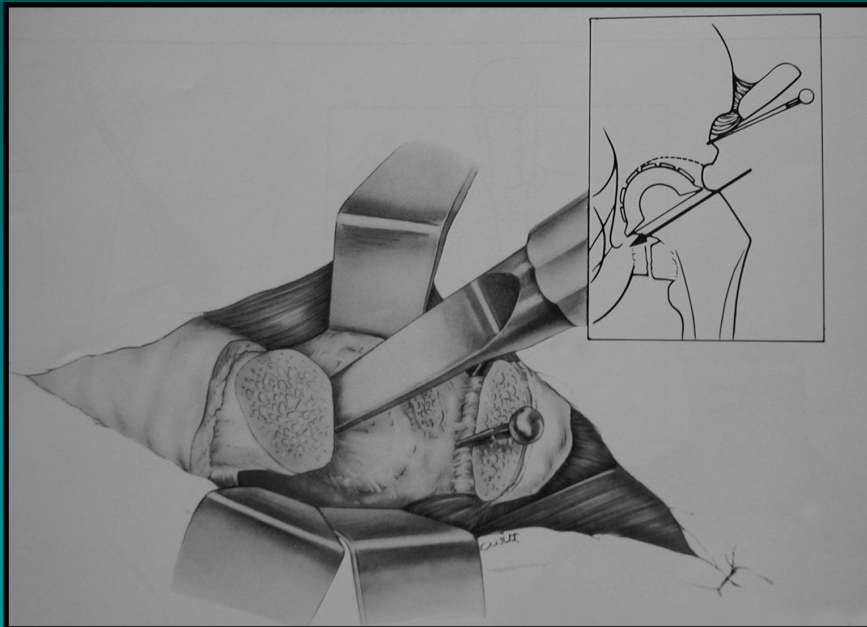
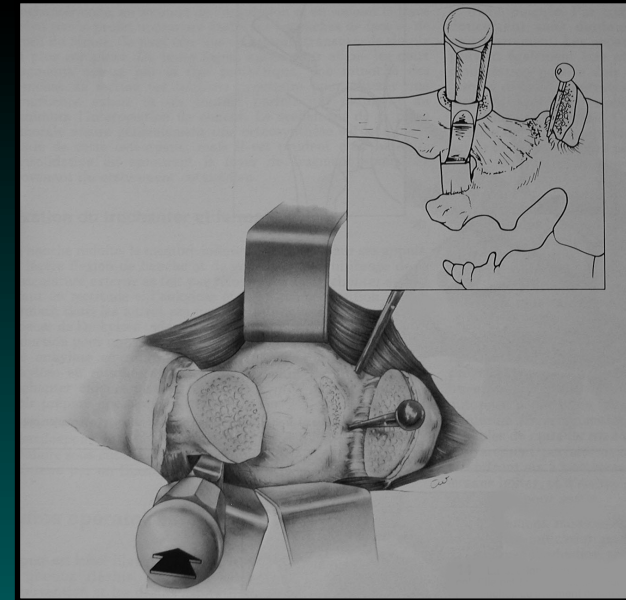
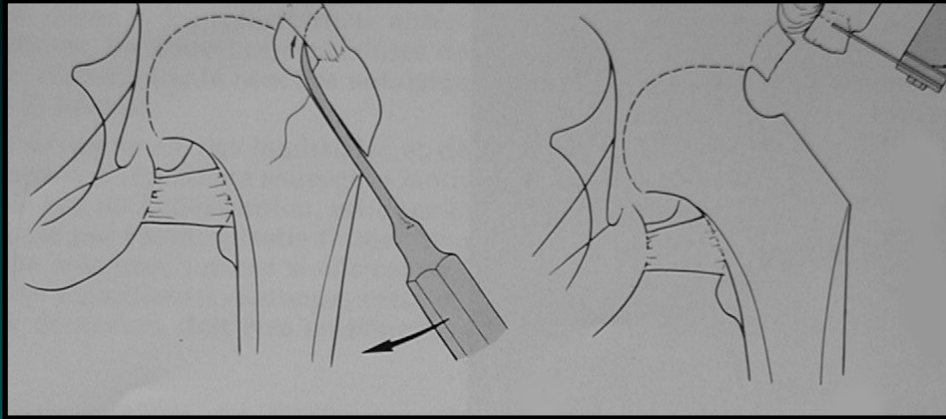
Specimen for cultures



Templating: osteotomy level



Surgical technique



Inferior margin

TRIAL REDUCTION
GREATER TROCHANTER FIXATION

Specific antibiotics

RESULTS

- 45 THAs 1969 - 1993 (19 men, 36 women)
- Single surgeon series (MK)

- Initial diagnosis:

TB 26, CDH: 9, septic: 5, OA: 3, Perthes: 1, unknown: 1

- “Spontaneous” ankylosis 20 hips

Surgical ankylosis 25 hips (intra 11, extra 10, comb 4)

Exclusion criteria: fibrous ankylosis, ankylosing spondylitis

- Malposition in 36 hips (80%)
- Perceptible contraction of the abductors
- Indication for THA
 - isolated low back pain 22
 - isolated knee pain 6
 - association 15
 - walking disability 1
- Neighboring joints:
 - Lumbar spine
 - moderate OA 20 , severe OA 6, OA + scoliosis 11
 - Knee
 - Uni-compartmental femoro-tibial OA 14, TriC 7 (4 severe)

- Mean age : 55.8 ± 12.3 years (28-80)
- Mean duration: 35.7 ± 14.2 years (3-65)
spontaneous 43.8 years VS 31.1 years arthrodesis
(p = 0,004)
- Prosthesis: Mc Kee - Farrar 1, Charnley 5, CMK 39



- Follow-up: 8.5 ± 3.4 years (5 to 20 years)
- LTFU: 0
- Five patients deceased 6.2 years (5-8)
- Revised: 2
 - Stem migration and osteolysis (7 years)
 - Unknown reason (8.6 years)

COMPLICATIONS

- 2 DVT associated to non fatal PE
- 1 sciatic nerve palsy (complete recovery)
- 1 deep hematoma
- 1 inguinal abscess
 - Tuberculosis
 - untreated
 - specific ATB + lavage

CLINICAL RESULTS

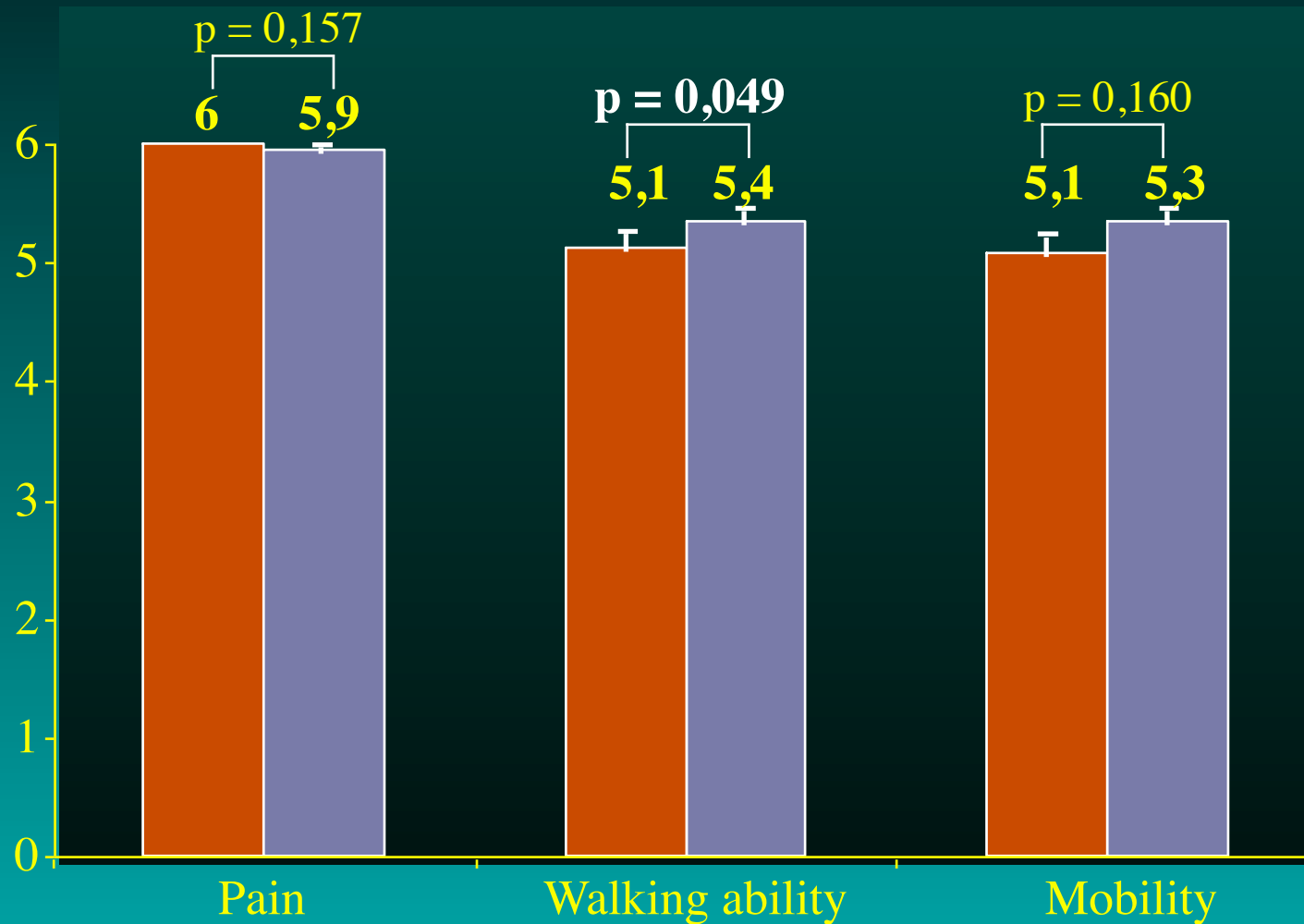
- Mean functional Merle d'Aubigné hip score:

- pre-operative:	11,3 ± 0,7		$p < 10^{-4}$
- 1 year FU:	15,6 ± 0,4		$p = 0,02$
- last FU:	16,5 ± 1,5		

• Excellent:	12	(26,6 %)
Very good:	20	(44,4 %)
Good:	9	(20 %)
Fair:	2	(4,4 %)
Poor :	1	(2,2 %)
Bad:	1	(2,2 %)

Mean flexion: $88^{\circ} \pm 23^{\circ}$ (30 - 130°)

1 year FU
Last FU



- Predictive factor

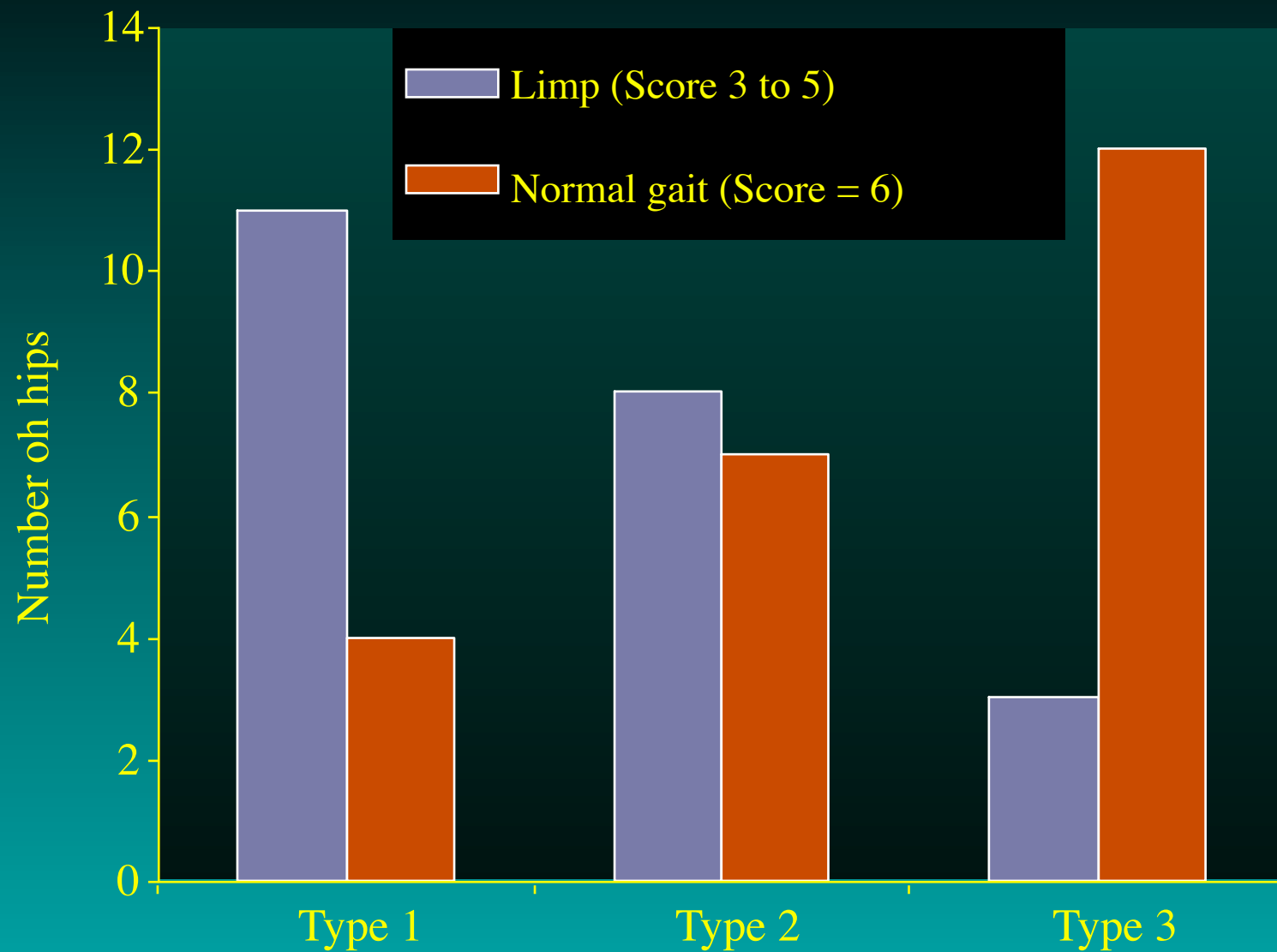
GLUTEUS MUSCLES

- Three categories (intra-operative findings)

Type 1: poor, very thin but continuous

Type 2: fair, pink, quite thin

Type 3: satisfactory, red, bleeding, quite thick



$p < 0,02$

Results in the neighboring joints

- Lower back pain:

- reduced or unchanged (97 %)
- increased 1 case with scoliosis



lumbar arthrodesis at 6 years

- Knee pain:

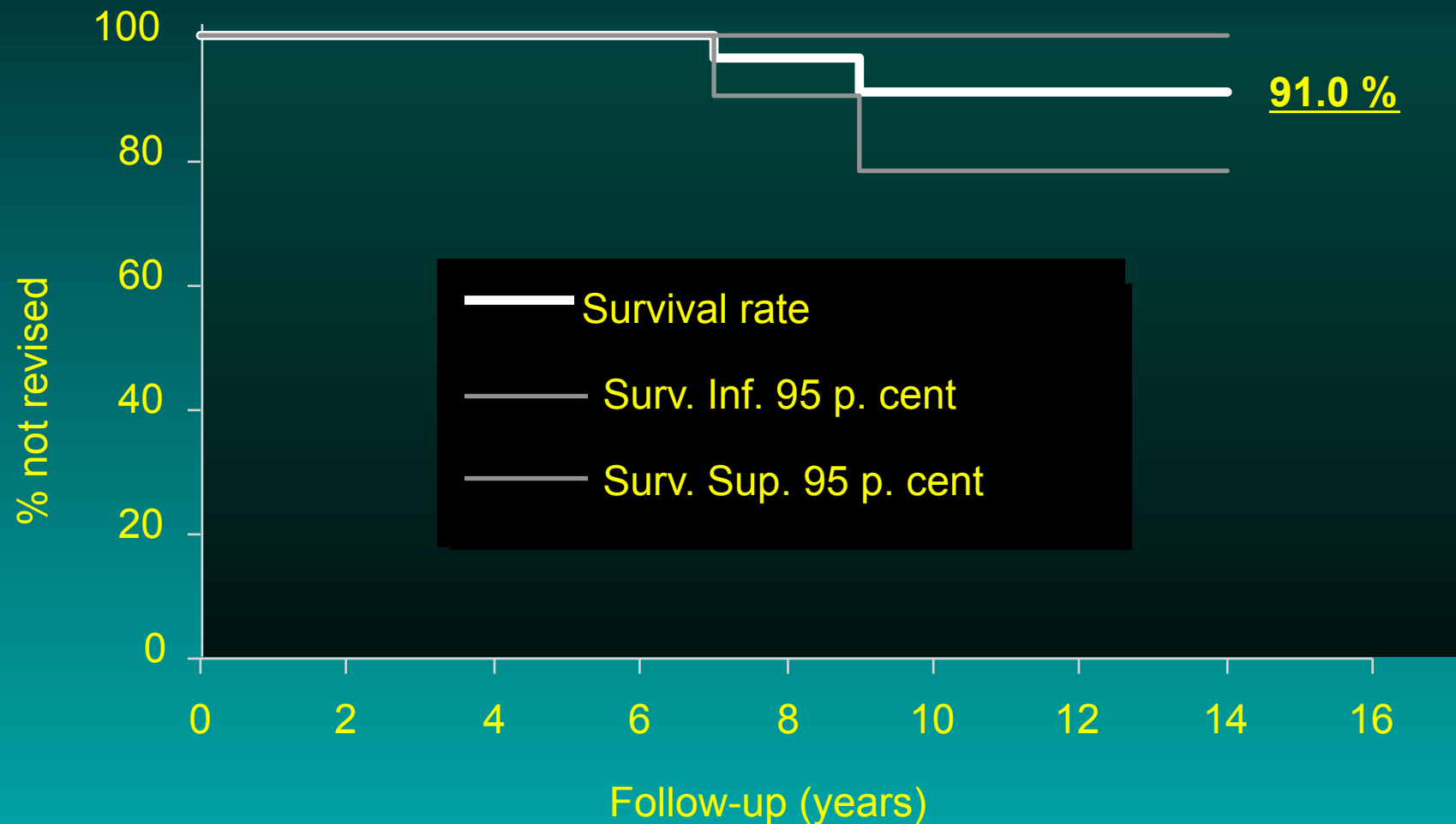
- reduced or unchanged (90 %)
- increased 2 cases



total knee arthroplasty at 4 years and 14 years

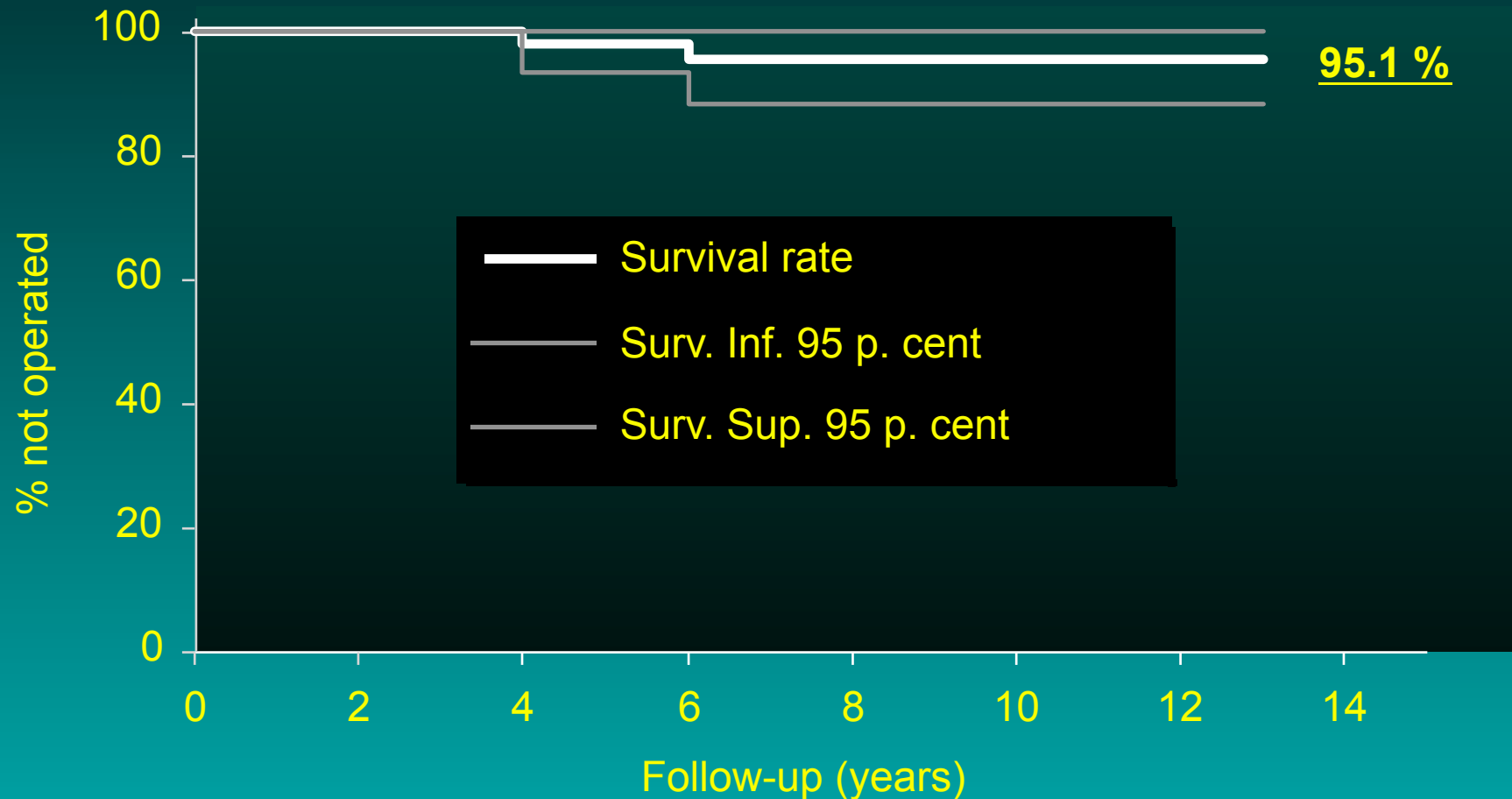
Survival of the arthroplasty

Failure = Revision



Survival knee and spine

Failure = TKA and/or lumbar arthrodesis



- Arthroplasty survival:

« Spontaneous ankylosis »

100% at 8 years

Arthrodesis

94.6% at 8 years

→ N.S.

Kilgus et al JBJS 1990, Strathy et al JBJS 1988

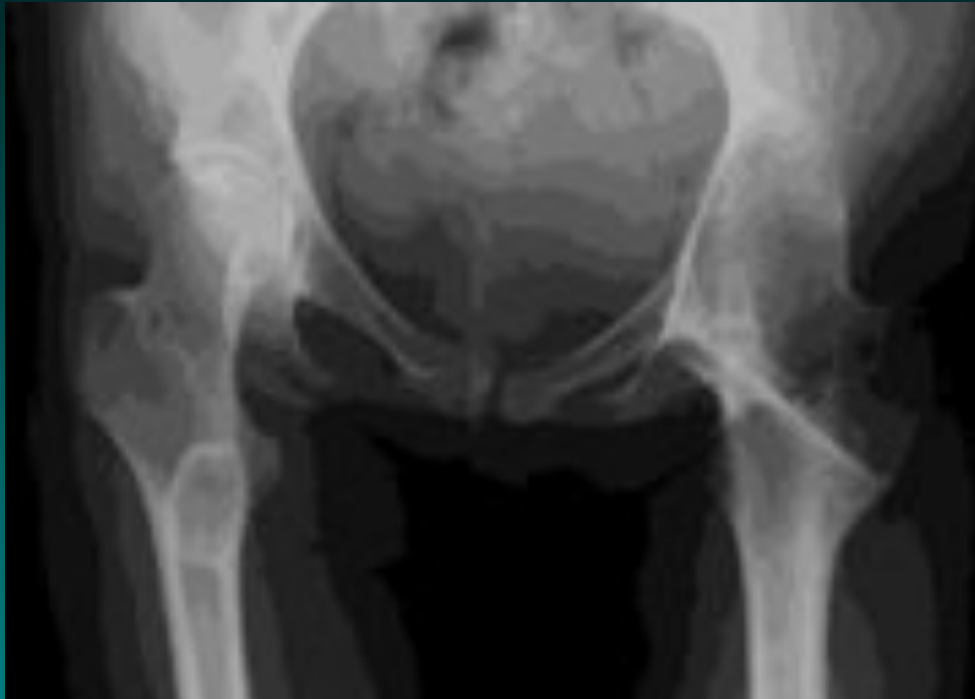
→ Effective procedure

Results maintained > 10 years

Effective on neighboring joints

Gluteus muscles state





Ber...preop



Ber...8 y



Ble...preop



Ble...15 y

Thank
you!

