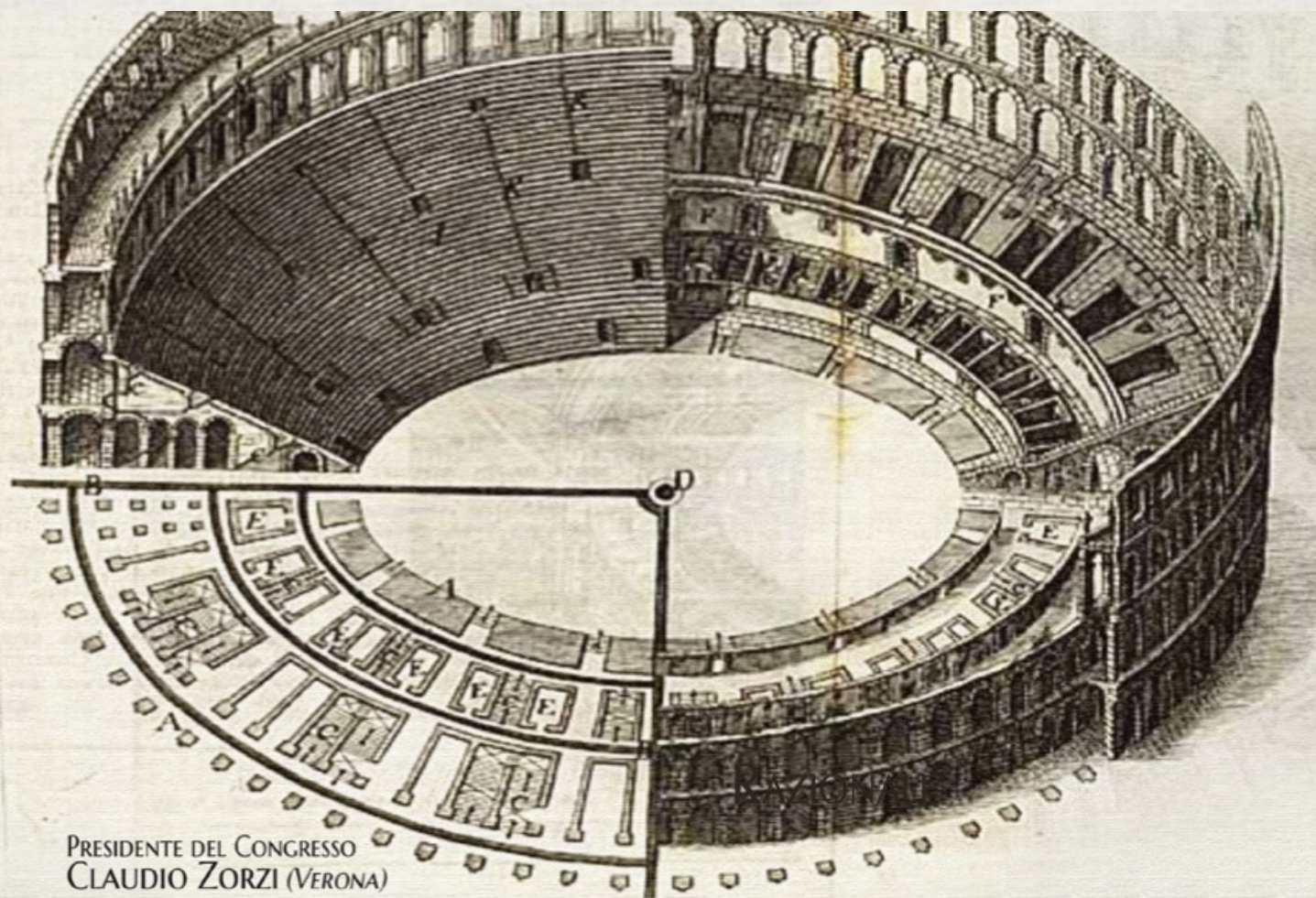


RIPROTESIZZAZIONE

# IX CONGRESSO NAZIONALE

## IL RECUPERO DELLE GEOMETRIE ARTICOLARI NELLE REVISIONI PROTESICHE

VERONA | GRAN GUARDIA | 7-8 MARZO 2024



PRESIDENTE DEL CONGRESSO  
CLAUDIO ZORZI (VERONA)



ASSOCIAZIONE ITALIANA  
RIPROTESIZZAZIONE

VICEPRESIDENTI  
PAOLO AVANZI (VERONA)  
ANTONIO CAMPACCI (VERONA)  
PRESIDENTE A.I.R.  
GIUSEPPE SOLARINO (BARI)



# La Gestione del bone loss femorale nelle revisioni complesse

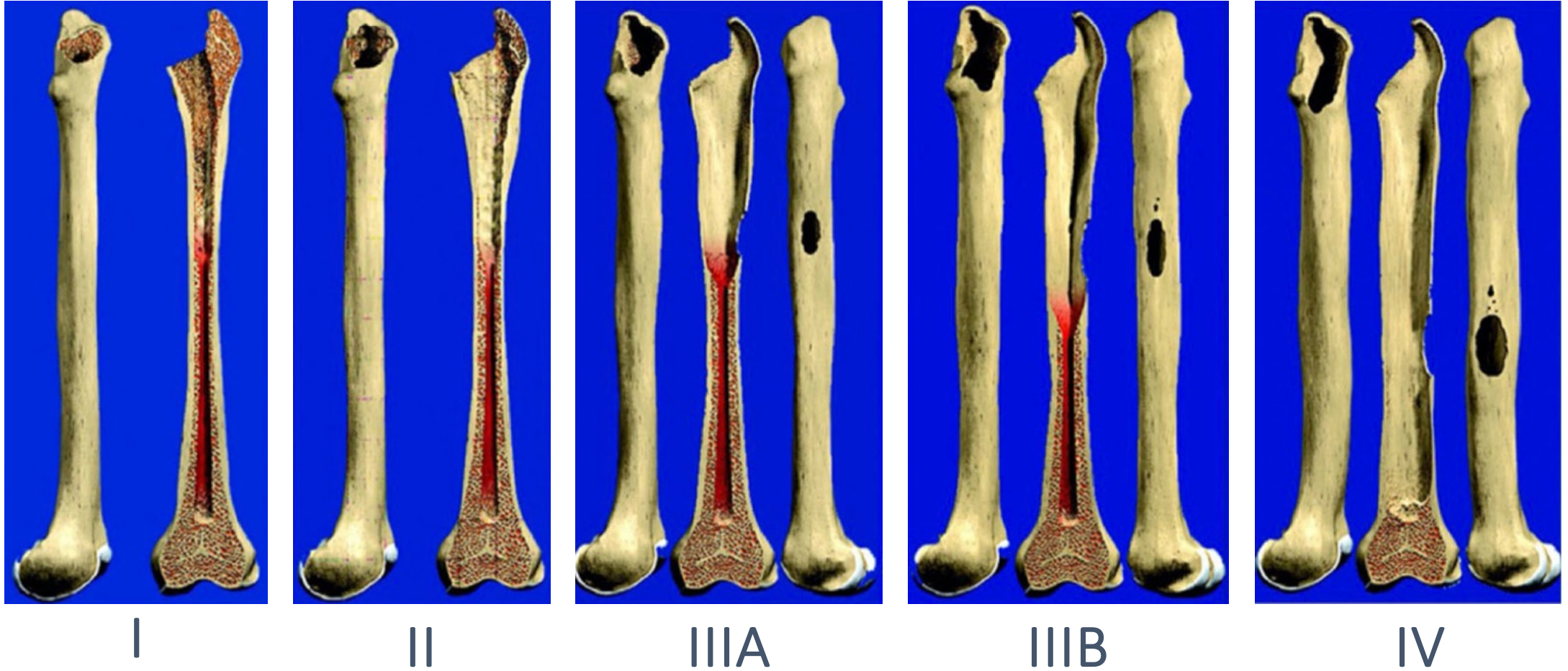
**Prof. Vincenzo Salini**

Chief of Orthopaedic and Traumatology Department  
Full Professor Vita-Salute San Raffaele University

salini.vincenzo@hsr.it

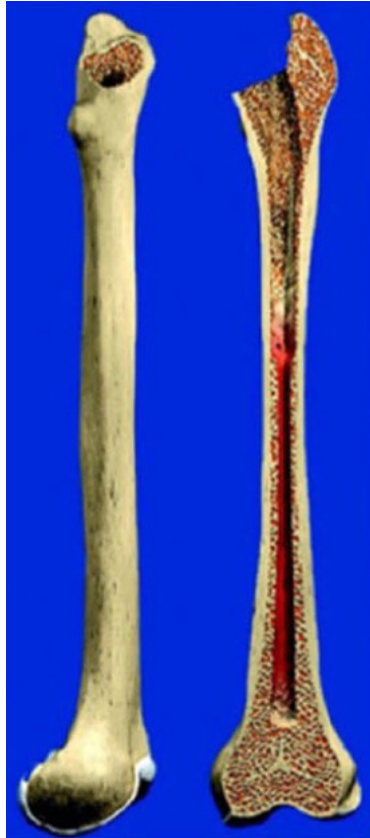


# Paprosky classification of femoral bone loss



Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.

# Paprosky classification of femoral bone loss



Minimal bone loss

Typically after removal of a cementless implant with narrow metaphyseal geometry or minimal proximal ingrowth

Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.

# Paprosky classification of femoral bone loss



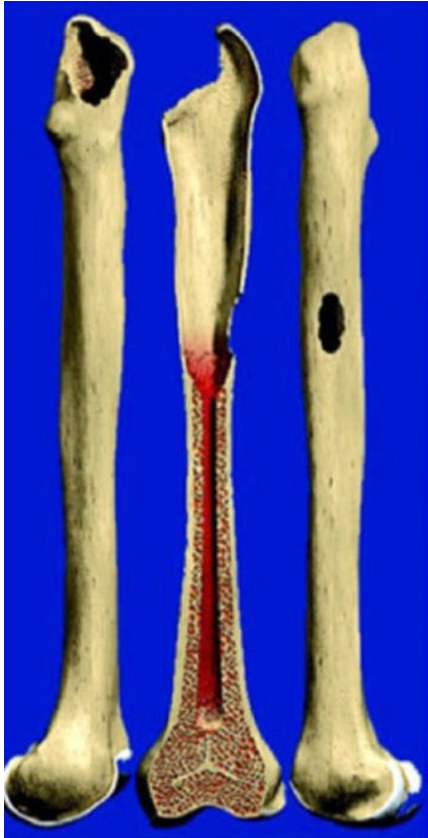
- Extensive metaphyseal bone loss
- Minimal diaphyseal bone loss
- Subtle varus remodelling of proximal femur

After removal of a cemented femoral implant, or proximally fitting stem with a wide femoral geometry

II

Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.

# Paprosky classification of femoral bone loss



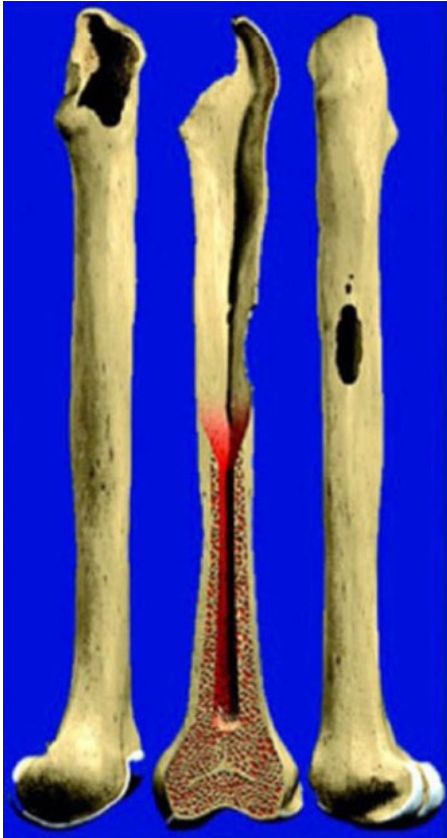
IIIA

- Extensive metaphyseal bone loss
- Extensive diaphyseal bone loss
- $\geq 4$  cm intact diaphyseal bone (“scratch fit”)

The most frequently encountered defect  
in femoral revision surgery

Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.

# Paprosky classification of femoral bone loss

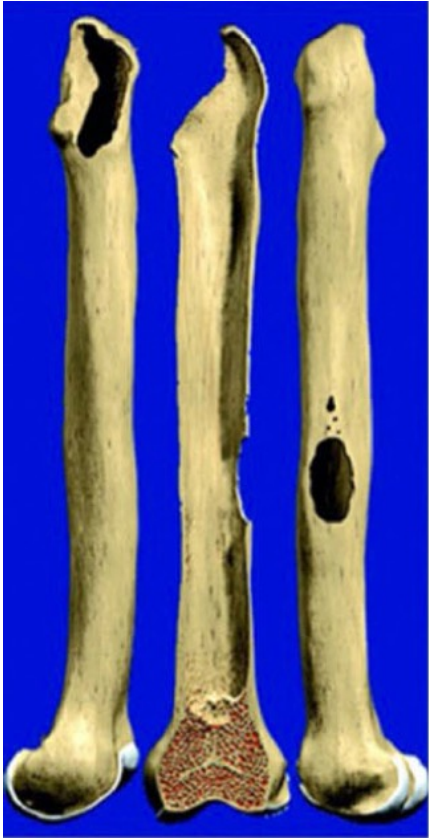


IIIB

- Extensive metaphyseal bone loss
- Extensive diaphyseal bone loss
- < 4 cm intact diaphyseal bone (“scratch fit”)

Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.

# Paprosky classification of femoral bone loss



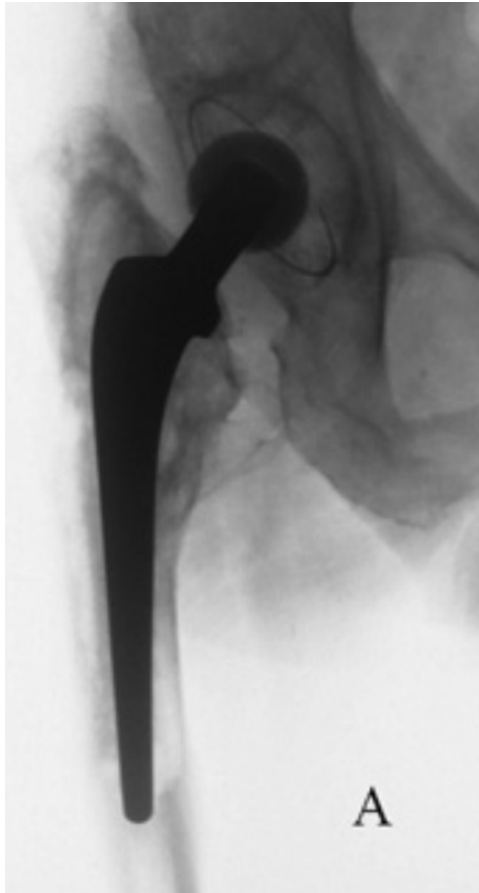
IV

- Extensive metaphyseal bone loss
- Extensive diaphyseal bone loss
- Non-supportive isthmus

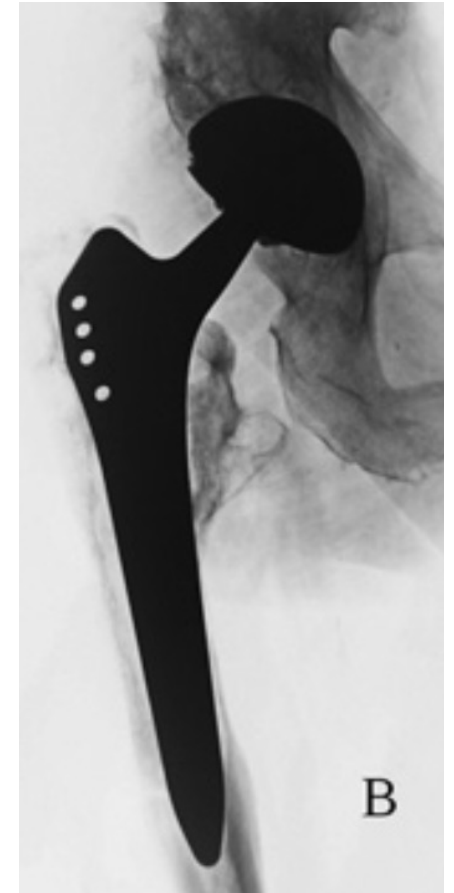
Ibrahim DA, Fernando ND. Classifications In Brief: The Paprosky Classification of Femoral Bone Loss. Clin Orthop Relat Res. 2017 Mar;475(3):917-921.



# Management of femoral bone loss



Type	Definition	Reconstruction Options
I	Minimal proximal metaphyseal bone loss	Uncemented fixation; proximal fitting or extensively porous-coated stem
II	Extensive metaphyseal bone loss and an intact diaphysis	Extensively porous-coated stem
IIIA	Extensive metadiaphyseal bone loss and a minimum of 4 cm of intact cortical bone in the diaphysis	Extensively porous-coated stem if <19 mm in diameter. If $\geq 19$ mm in diameter, then modular tapered stem.
IIIB	Extensive metadiaphyseal bone loss and <4 cm of intact cortical bone in the diaphysis	Modular tapered stem
IV	Extensive metadiaphyseal bone loss and a non-supportive diaphysis	Allograft prosthetic composite, cemented stem, or impaction grafting plus cemented stem

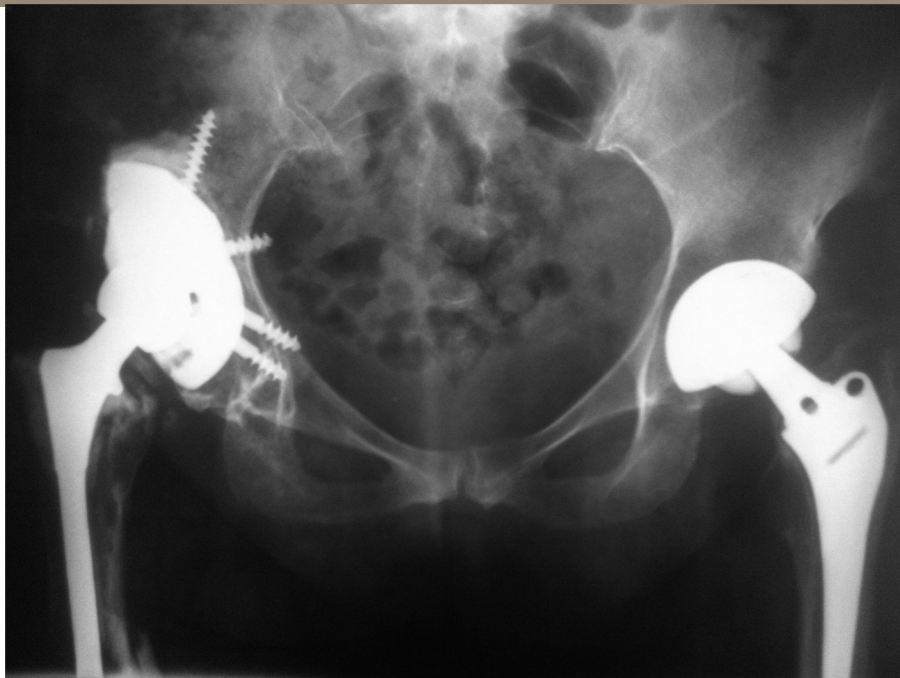


Bianchi L, Galante C, Zagra L. The management of femoral bone stock in THA revision: indications and techniques. Hip Int. 2014 Oct 2;24 Suppl 10:S37-43.

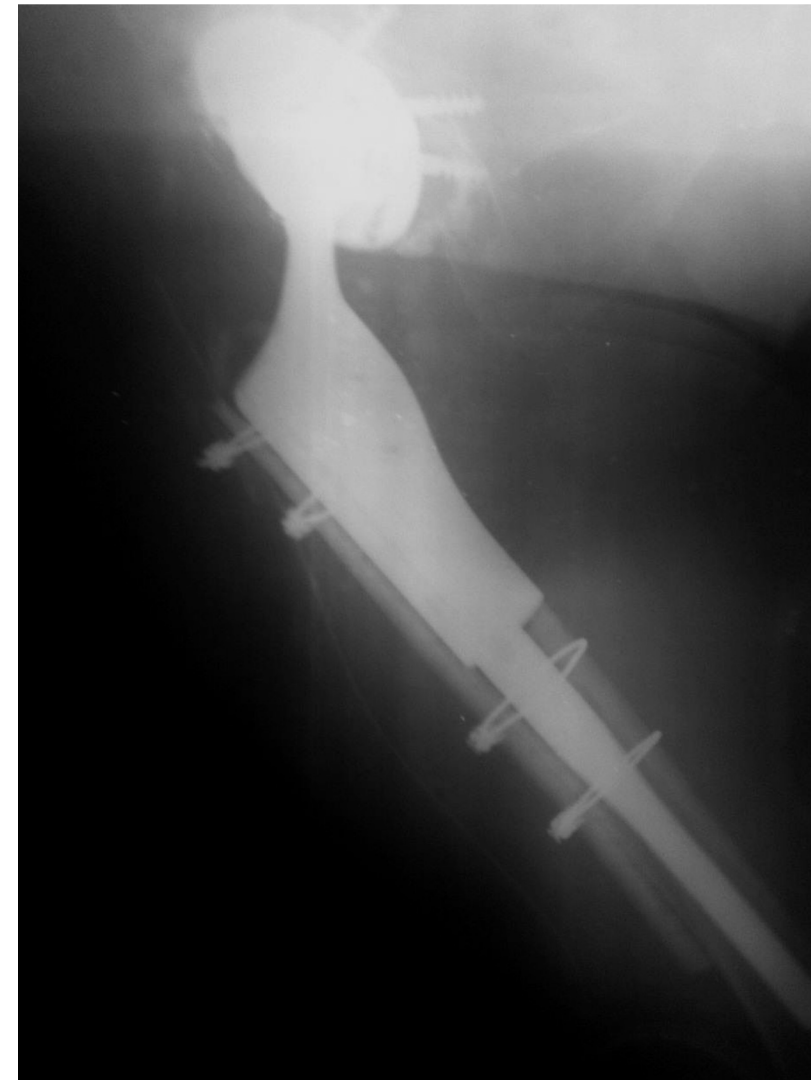
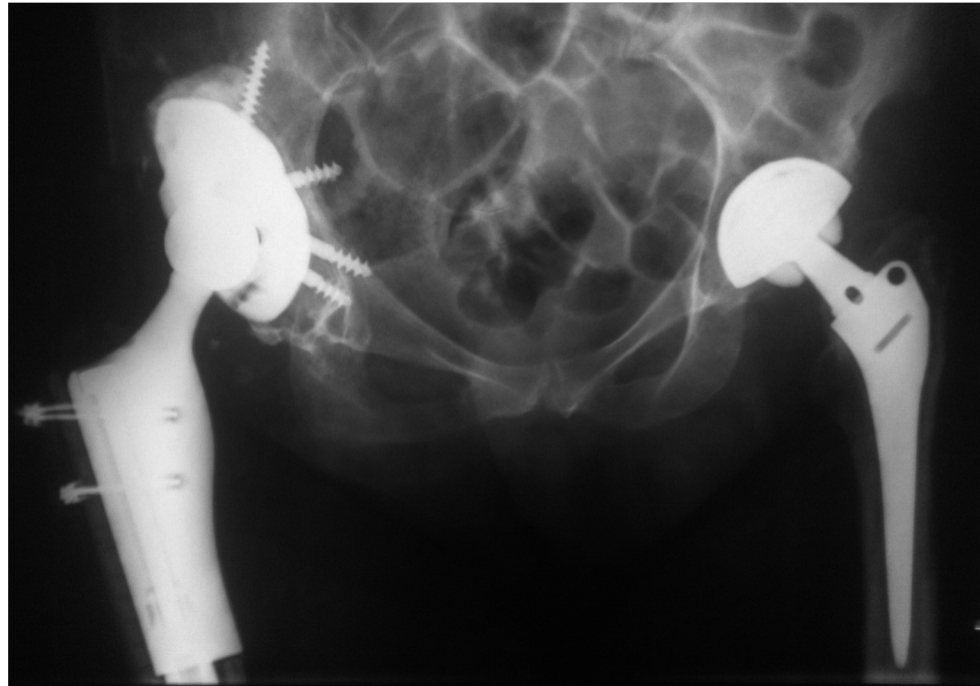
# CLINICAL CASE

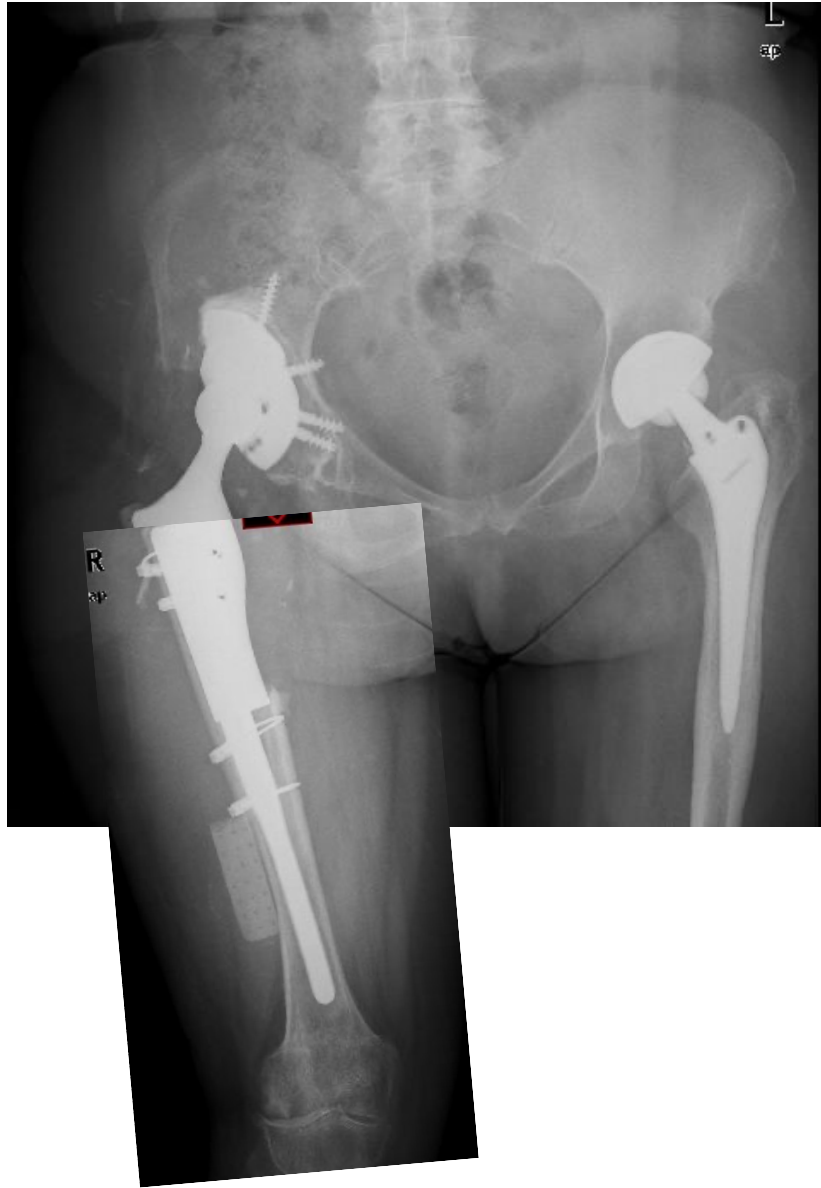
- M.M. ,caucasian, female, 77 yy
- *Vancouver B3*
- Hypertension, Metabolic syndrome
- Tall: 165 cm - Weigh: 105 kg (BMI 39)

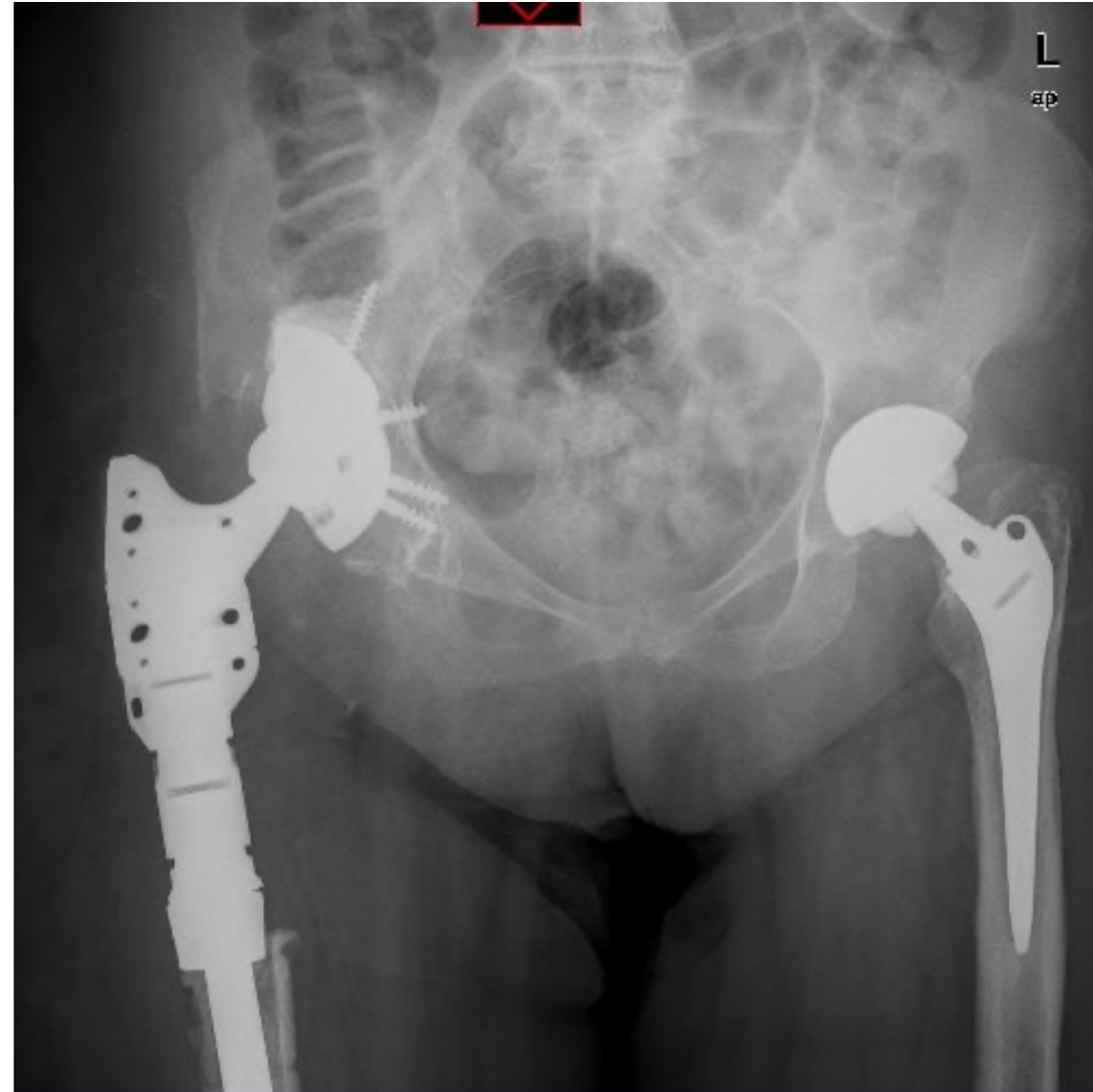


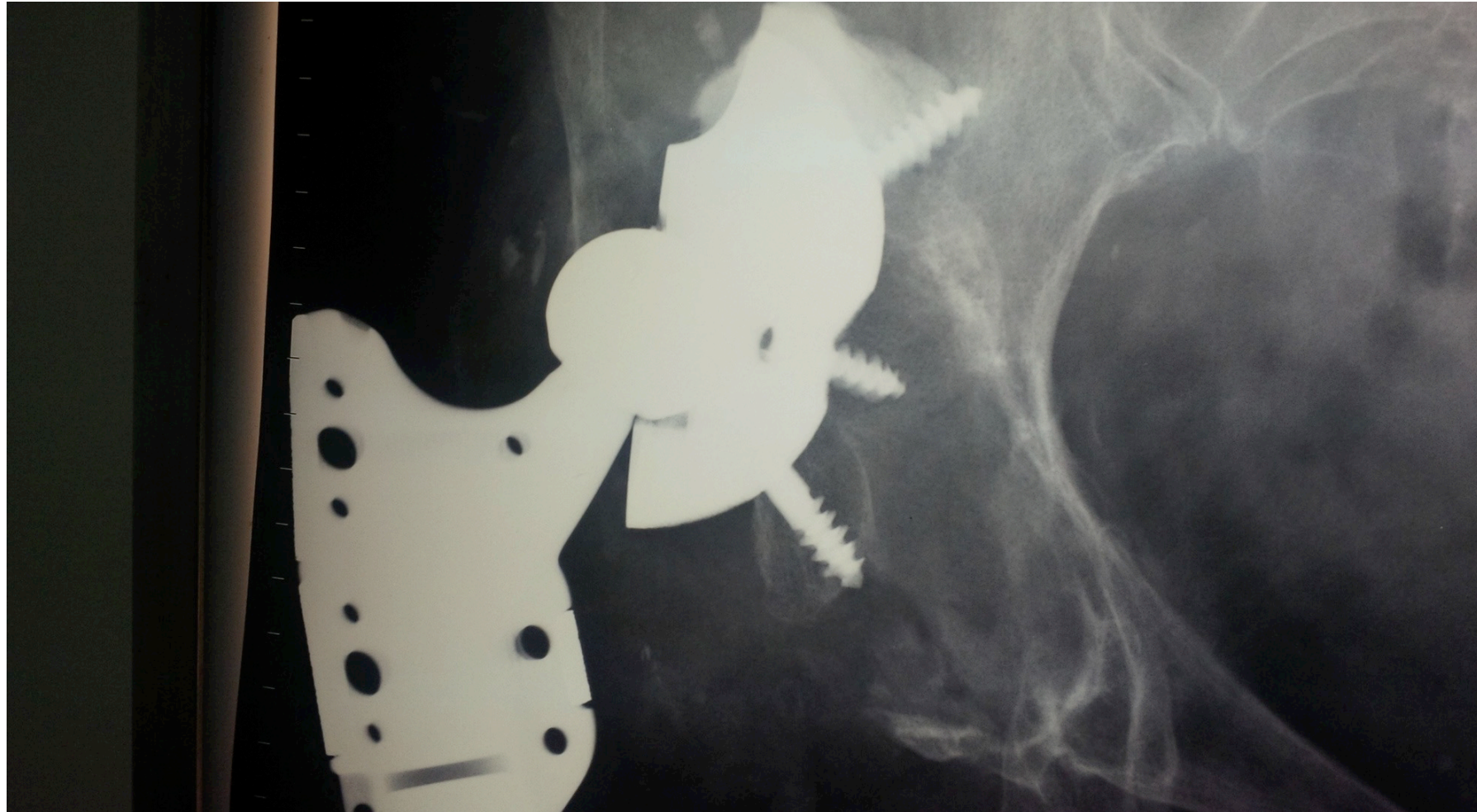






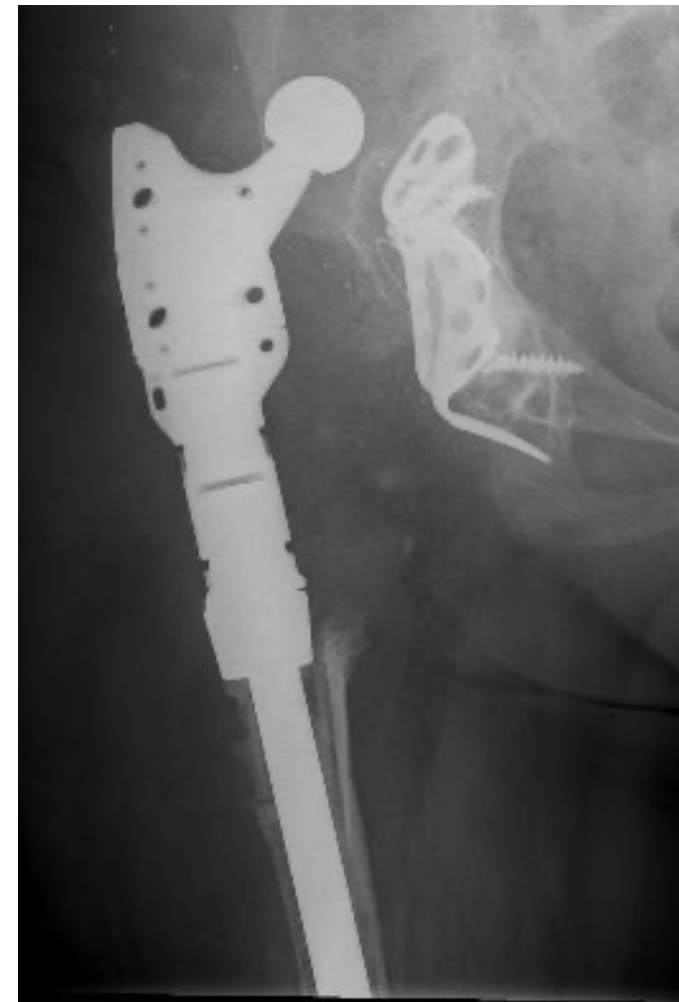


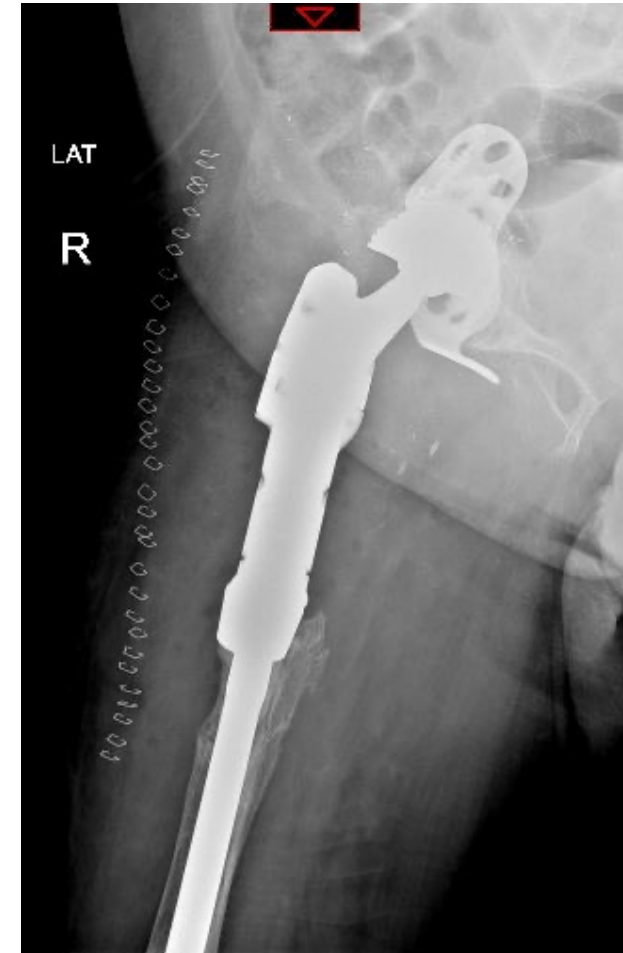




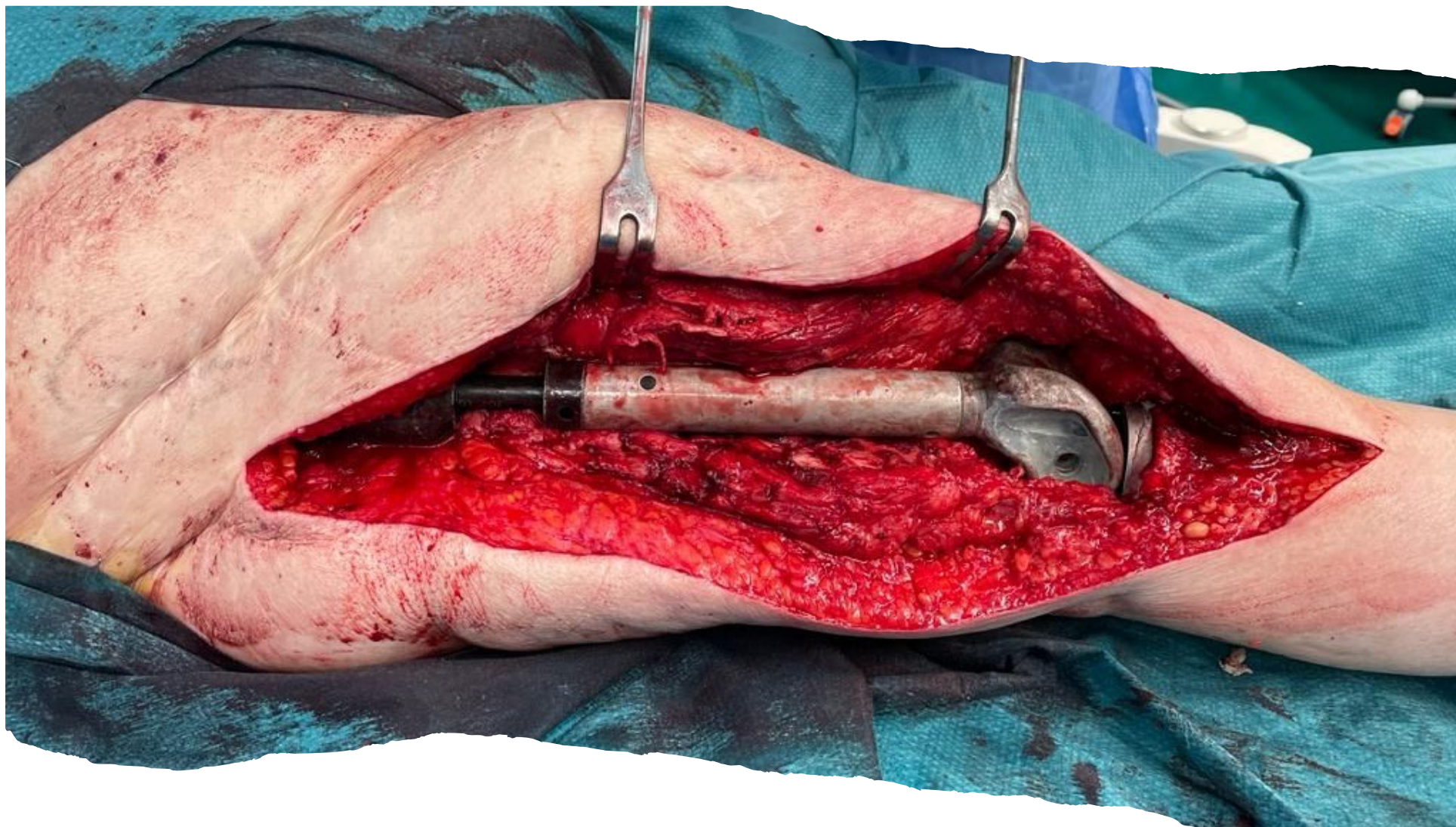
**IX Congresso Nazionale A.I.R.**  
Il Recupero delle geometrie articolari nelle revisioni protesiche  
Verona 7-8 marzo 2024





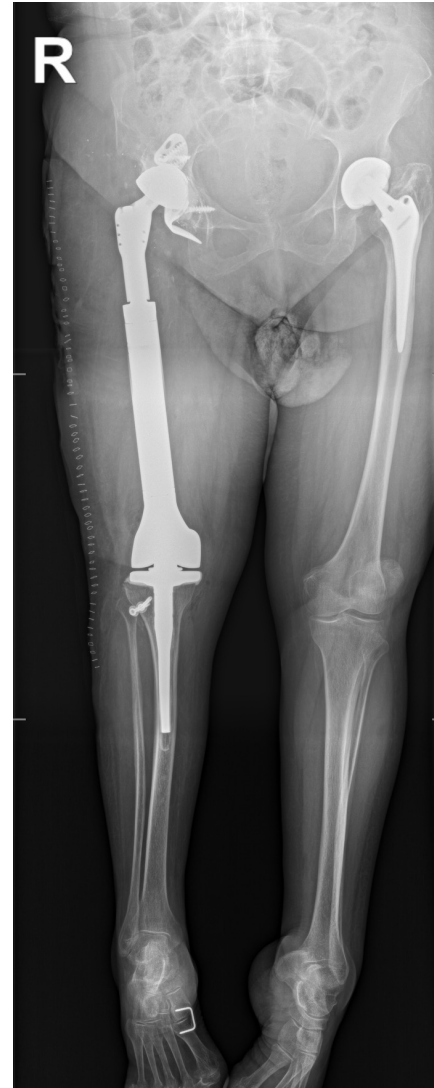






**IX Congresso Nazionale A.I.R.**  
Il Recupero delle geometrie articolari nelle revisioni protesiche  
Verona 7-8 marzo 2024







# CASE 2

**B.M., male, 76 years**



# Introduction

**Height: 172 cm – Weight 83 kg**

*2000: Right total hip arthroplasty (THA).*

*2009: Right acetabular revision*

*2010: Right prosthesis head revision*

*2010: Prosthesis removal and cement spacer*

*2012: Right total hip revision (THR)*

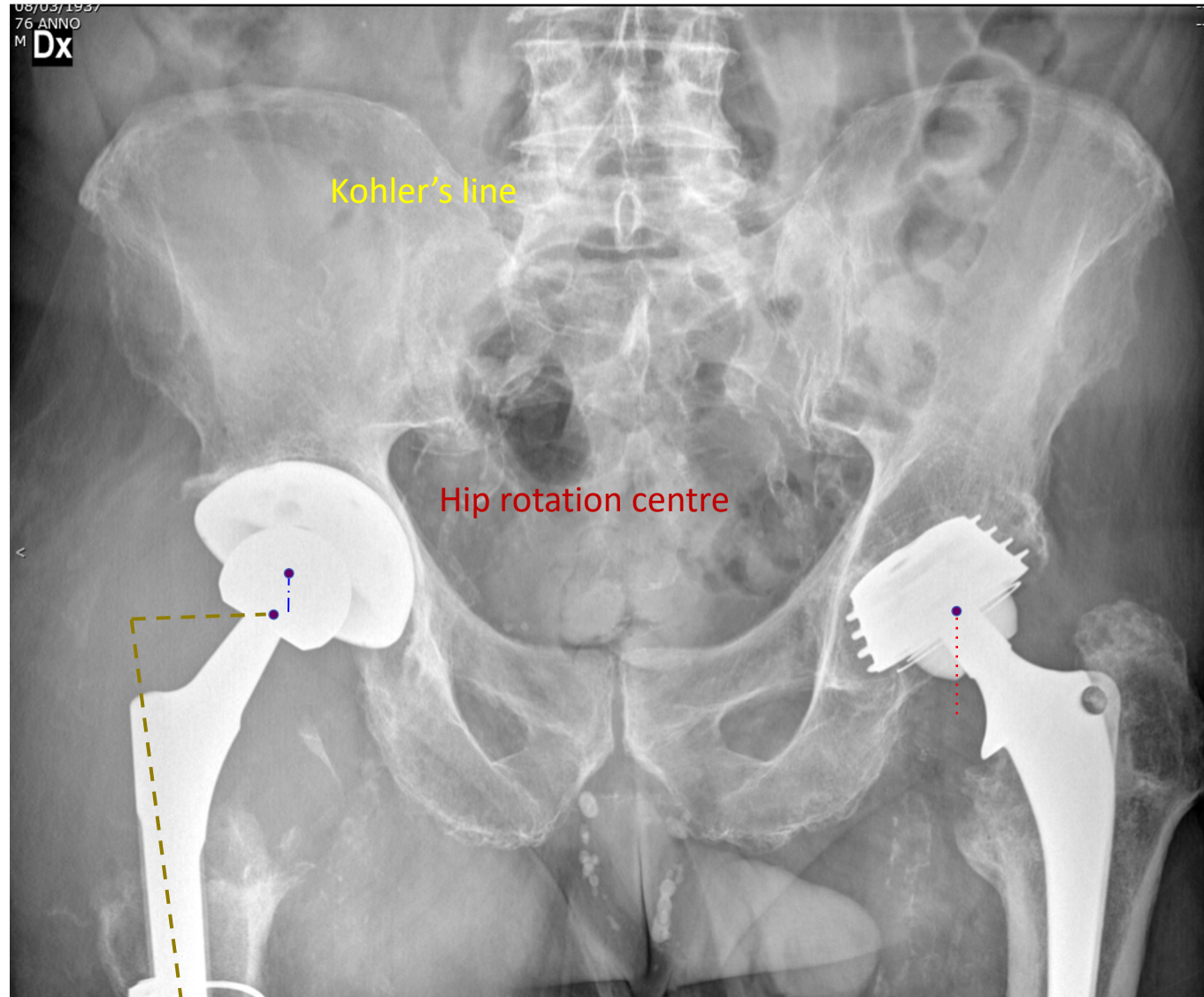
**2014: Harris Hip Score: POOR (< 10 pt)**

**2014: Right (second) total hip revision (THR)**

# Before surgery



# Pre-operative planning



# Before surgery



# Before surgery



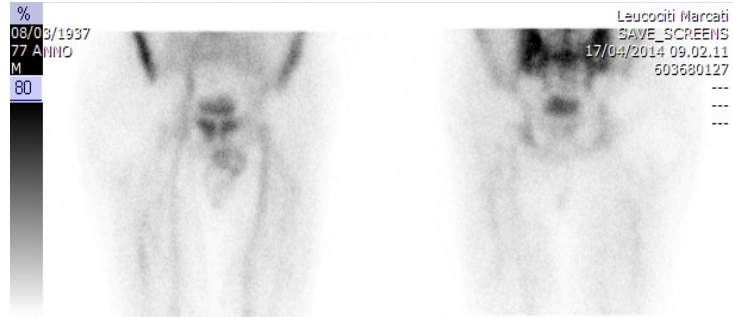
# List of problems

- Components removal
- Restoring hip center
- Stability of the implant
- Approach
- Muscular insufficiency

?

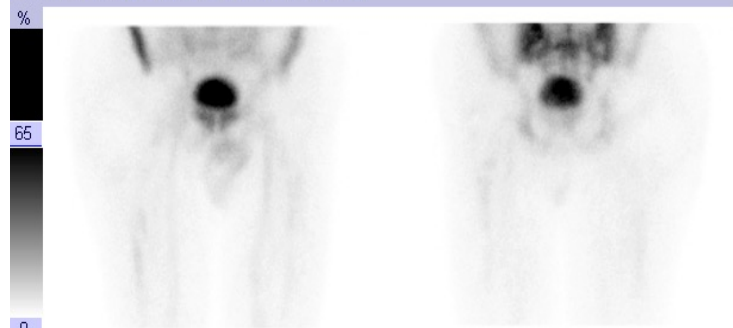
# What we need

- EMATOLOGIA -



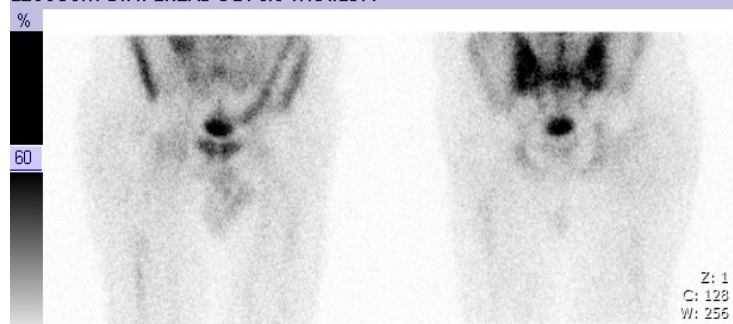
Anterior Posterior

LEUCOCITI STAT 2HEAD a 3 ore 16/04/2014



Anterior Posterior

LEUCOCITI STAT 2HEAD a 24 ore 17/04/2014



Anterior Posterior

Pagina: 13 di 13

Z: 1  
C: 128  
W: 256

IM: 1

B-EMOCROMO

Leucociti	6.7	x10 <sup>9</sup> /L	4.0 - 10.0
Eritrociti	3.97	x10 <sup>12</sup> /L	4.50 - 5.80
Emoglobina	12.3	g/dL	13.5 - 18.0
Ematocrito	38.3	%	40.0 - 52.0
MCV	96.5	fL	79.0 - 96.0
MCH	31.0	pg	27.0 - 33.0
MCHC	32.1	g/dL	31.0 - 36.0
RDW	14.7	%	<15
Piastrine	203	x10 <sup>9</sup> /L	150 - 400

B-FORMULA LEUCOCITARIA

Neutrofil	68.9	%	40.0 - 70.0
Linfociti	13.9	%	20.0 - 45.0
Monociti	10.6	%	3.0 - 10.0
Eosinofili	6.3	%	0.0 - 4.0
Basofili	0.3	%	0.0 - 1.0
Neutrofil	4.6	x10 <sup>9</sup> /L	1.6 - 7.0
Linfociti	0.9	x10 <sup>9</sup> /L	1.0 - 4.0
Monociti	0.7	x10 <sup>9</sup> /L	0.2 - 0.8
Eosinofili	0.4	x10 <sup>9</sup> /L	0.0 - 0.4
Basofili	0.0	x10 <sup>9</sup> /L	0.0 - 0.0

Test Reumatici

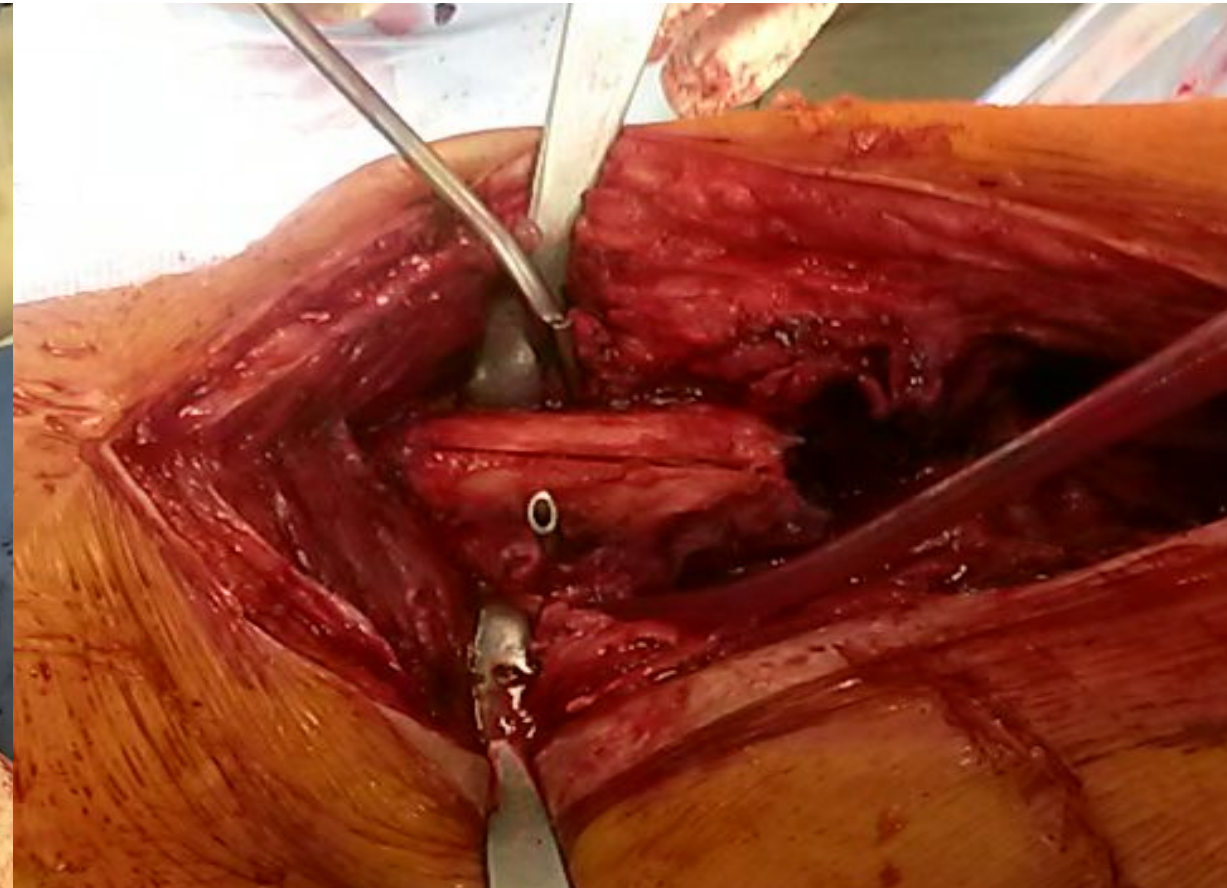
S-Proteina C reattiva	15.08	mg/L	< 6.00
-----------------------	-------	------	--------

Substrati

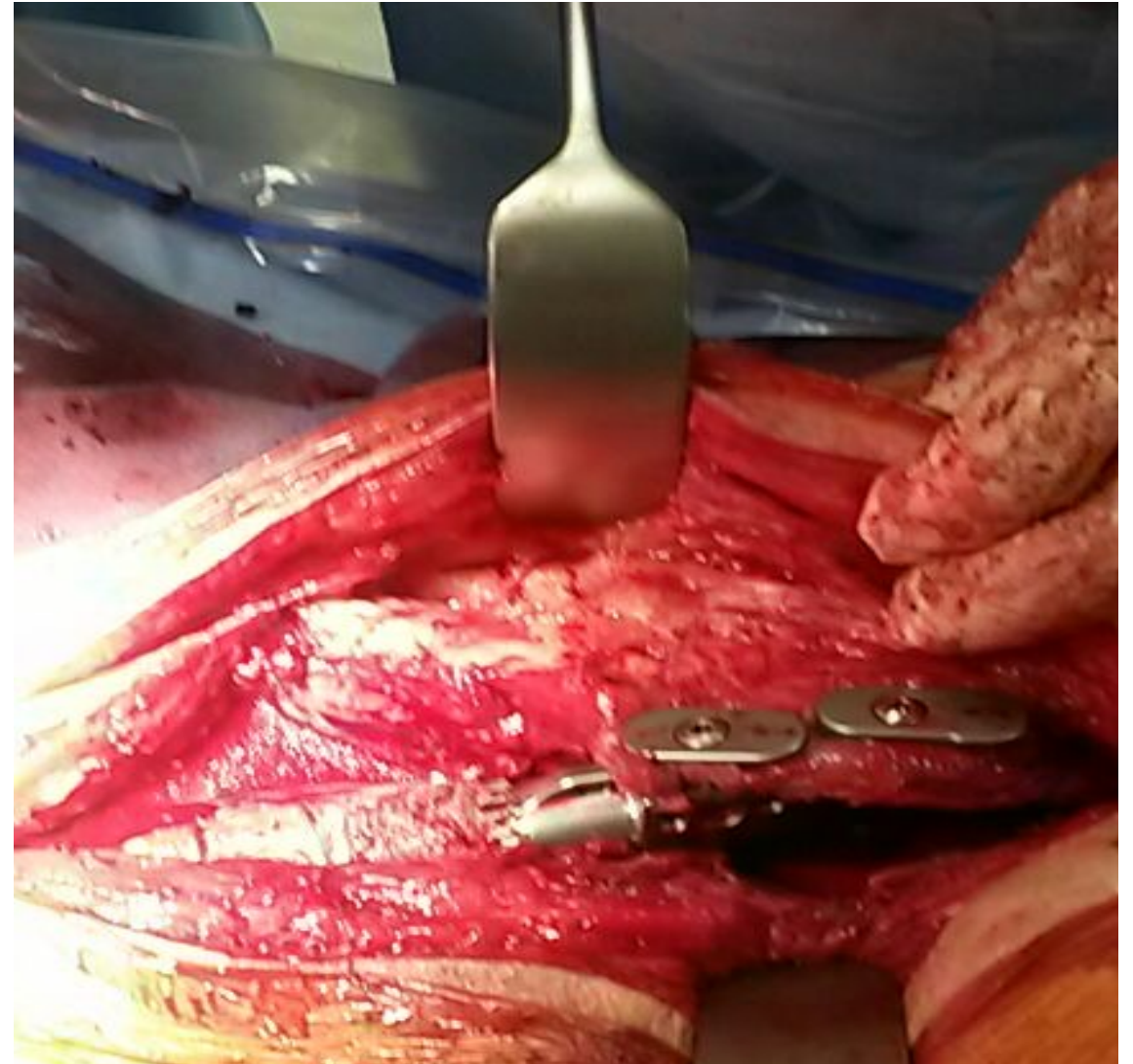
S-Glucosio	94	mg/dL	70 - 99
<i>Alterata glicemia a digiuno per valori compresi tra 100 e 125</i>			
<i>Diabete Mellito per valori = o &gt; 126 se confermato da 2° prelievo o OGTT o HbA1c = o &gt; 6.5 % o HbA1c = o &gt; 48 mmol/mol</i>			
S-Urea	36	mg/dL	10 - 50
S-Creatinina	1.2	mg/dL	0.6 - 1.4

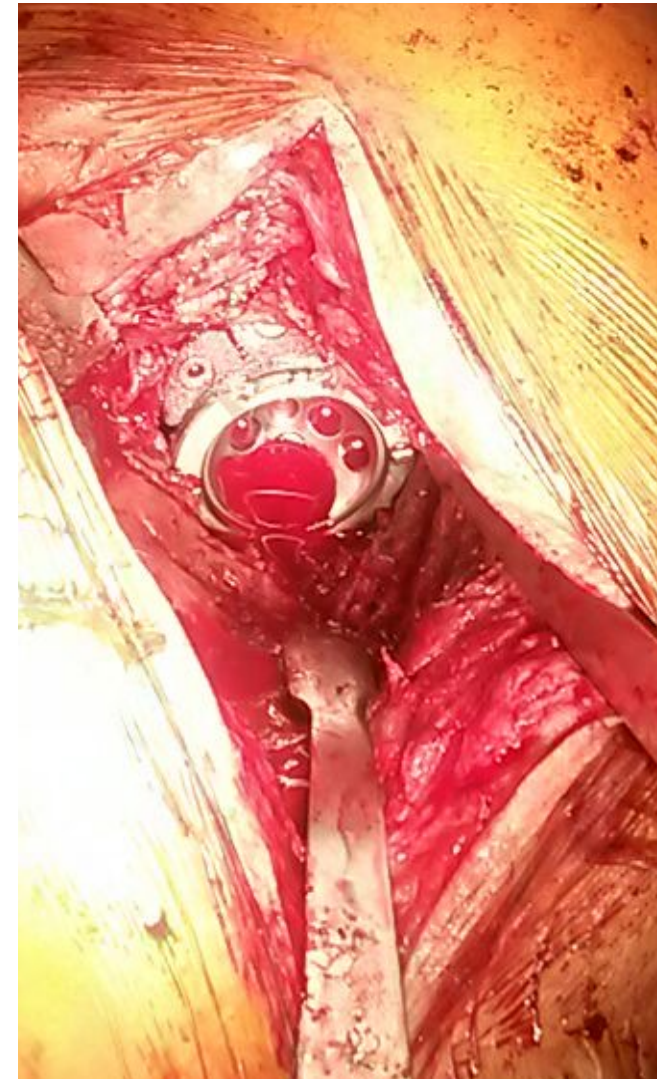
17/04/2014

# Intraoperative view



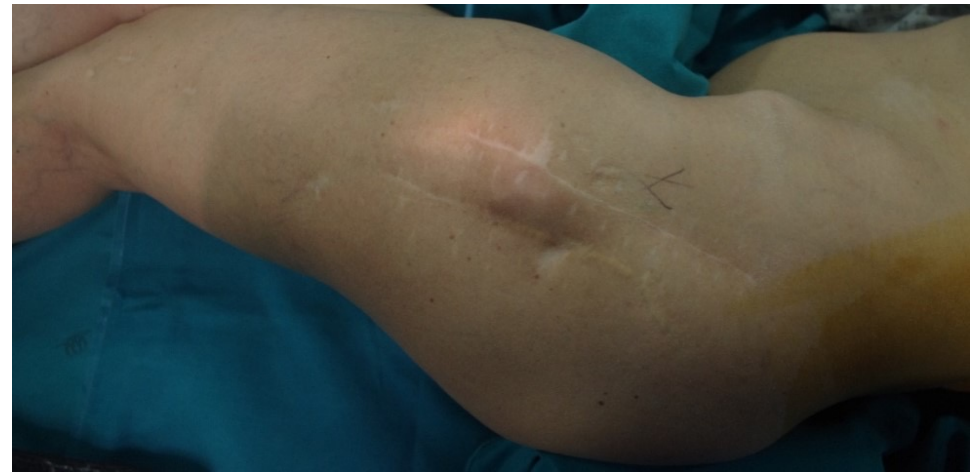


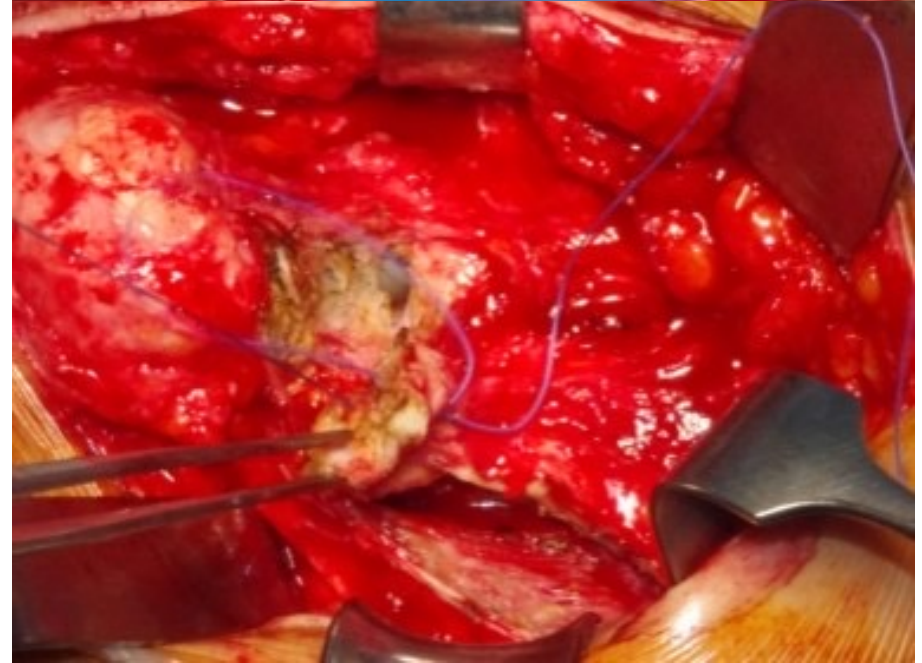
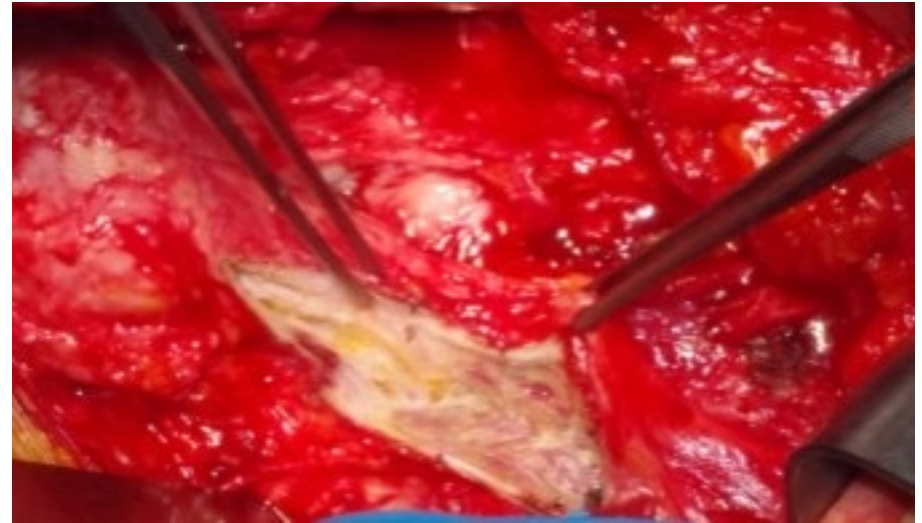
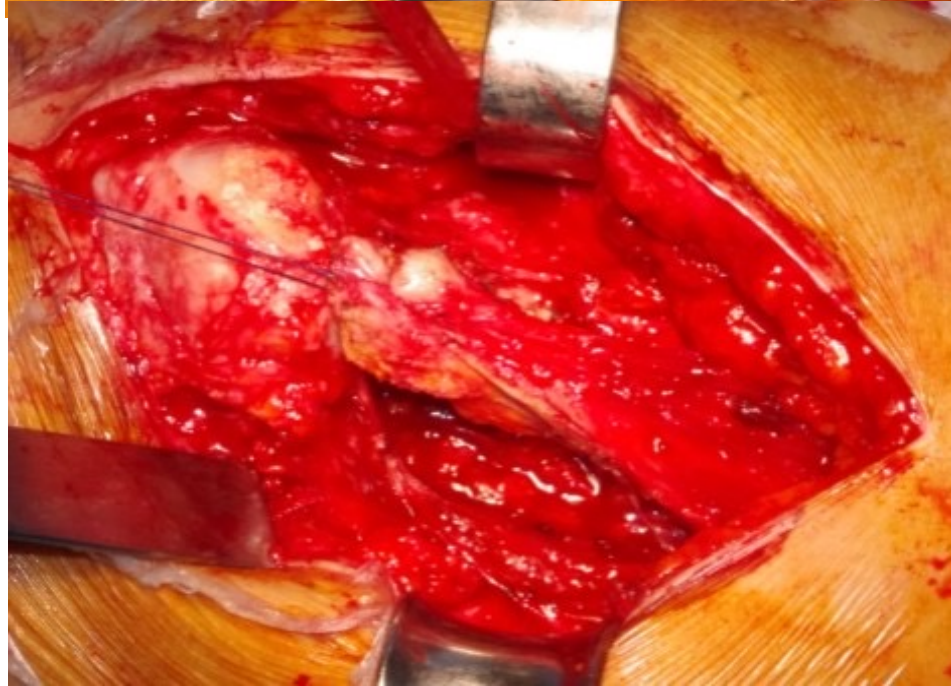


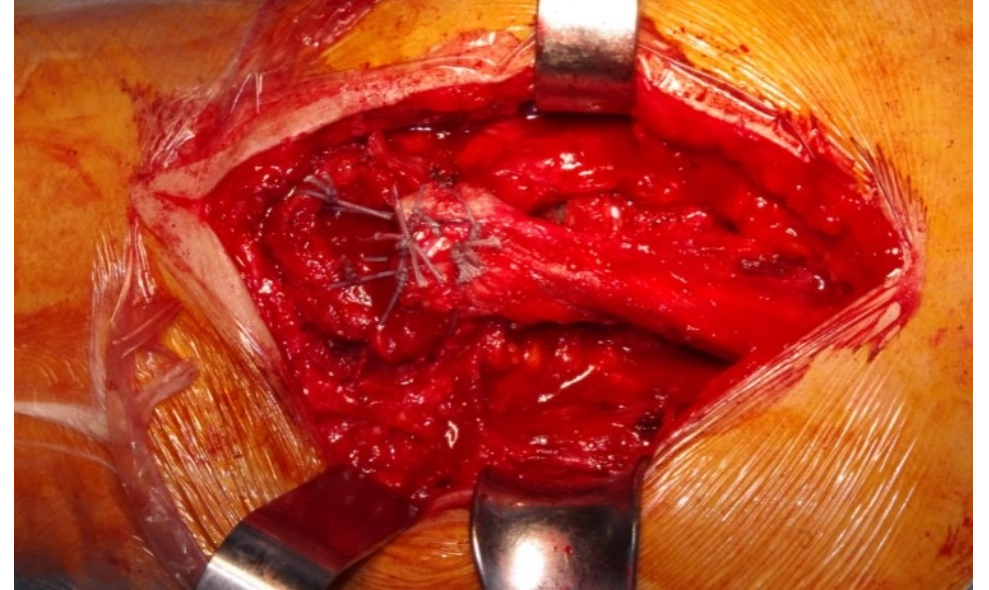
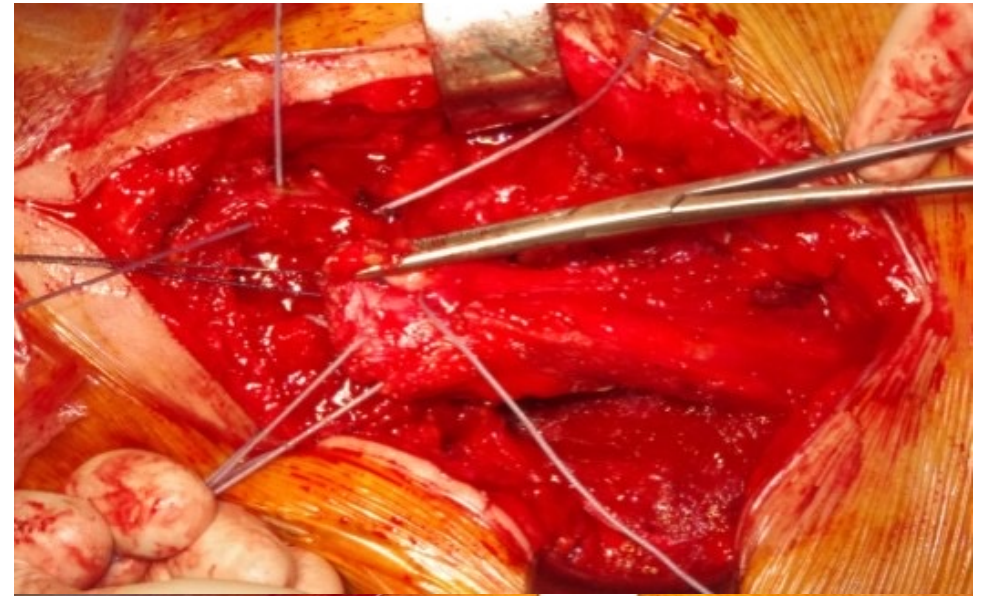
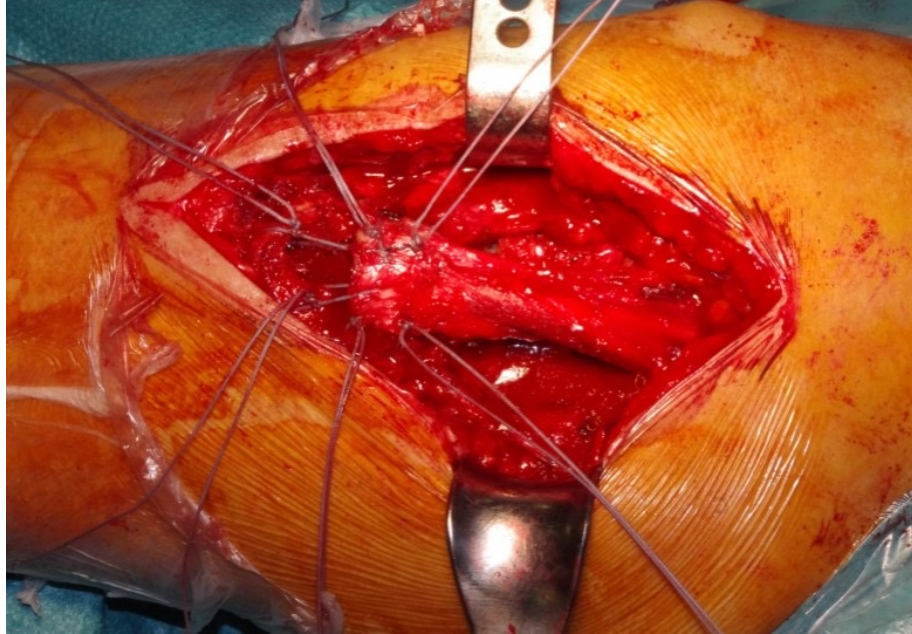


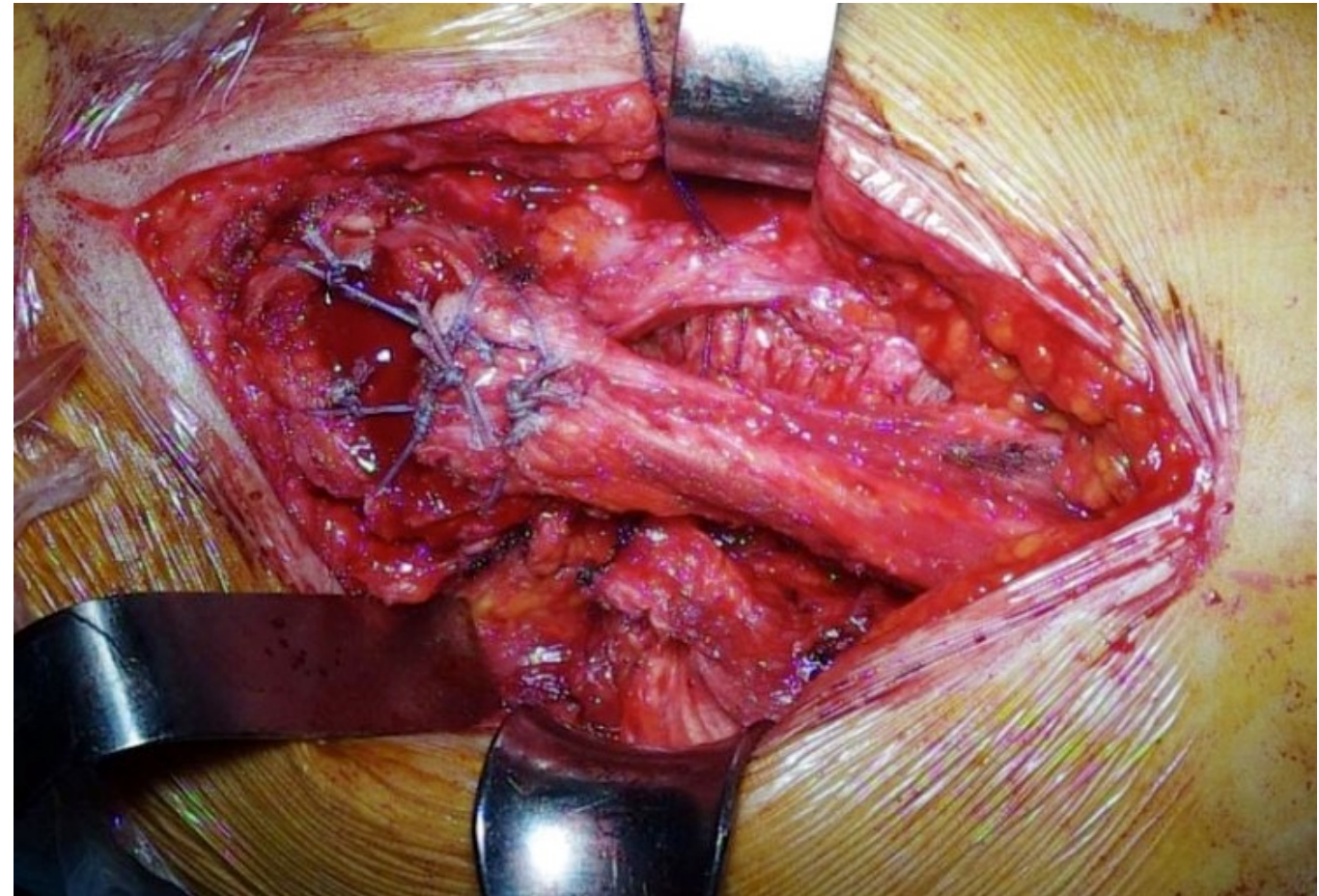
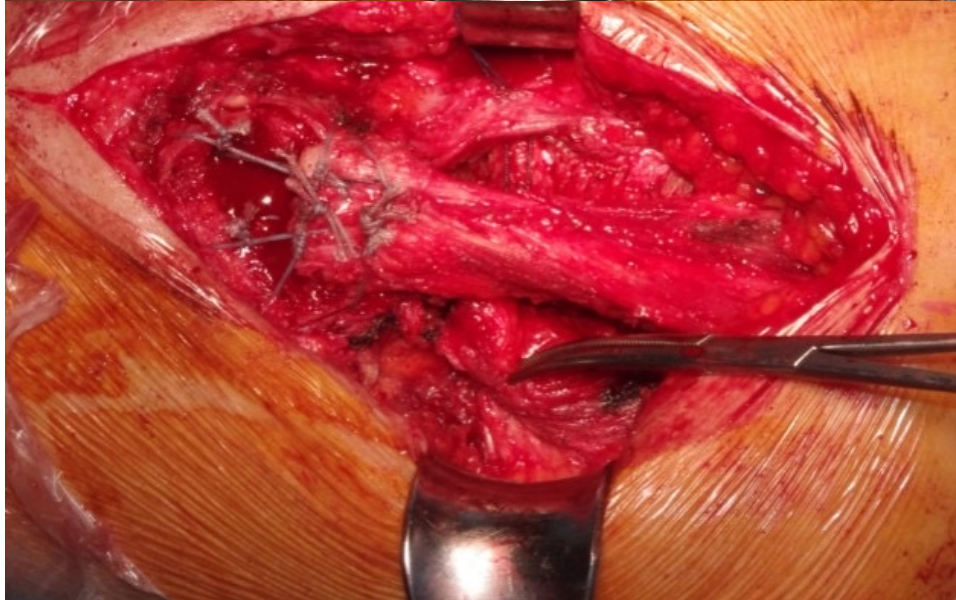
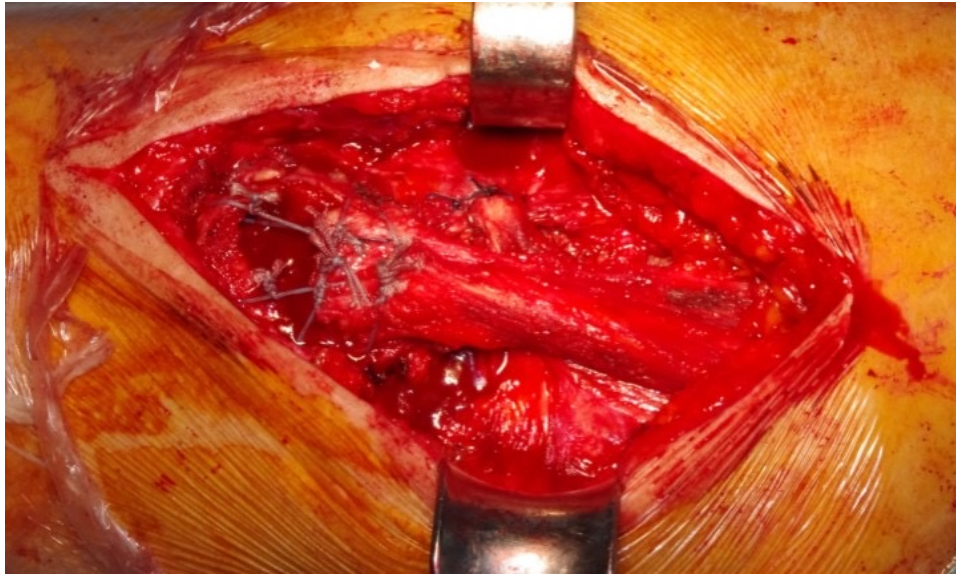
# Whiteside Technique

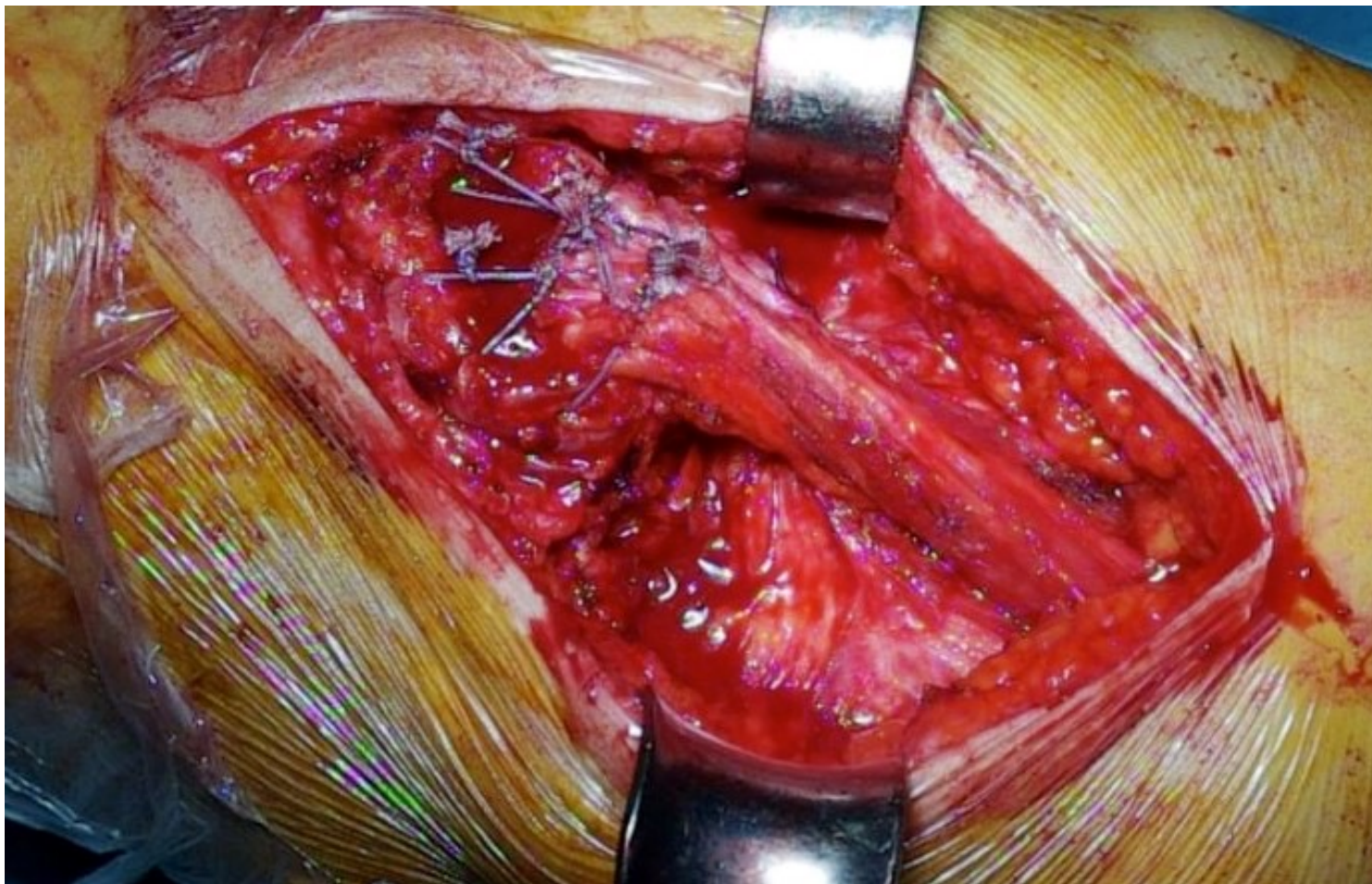
## Pre-operative



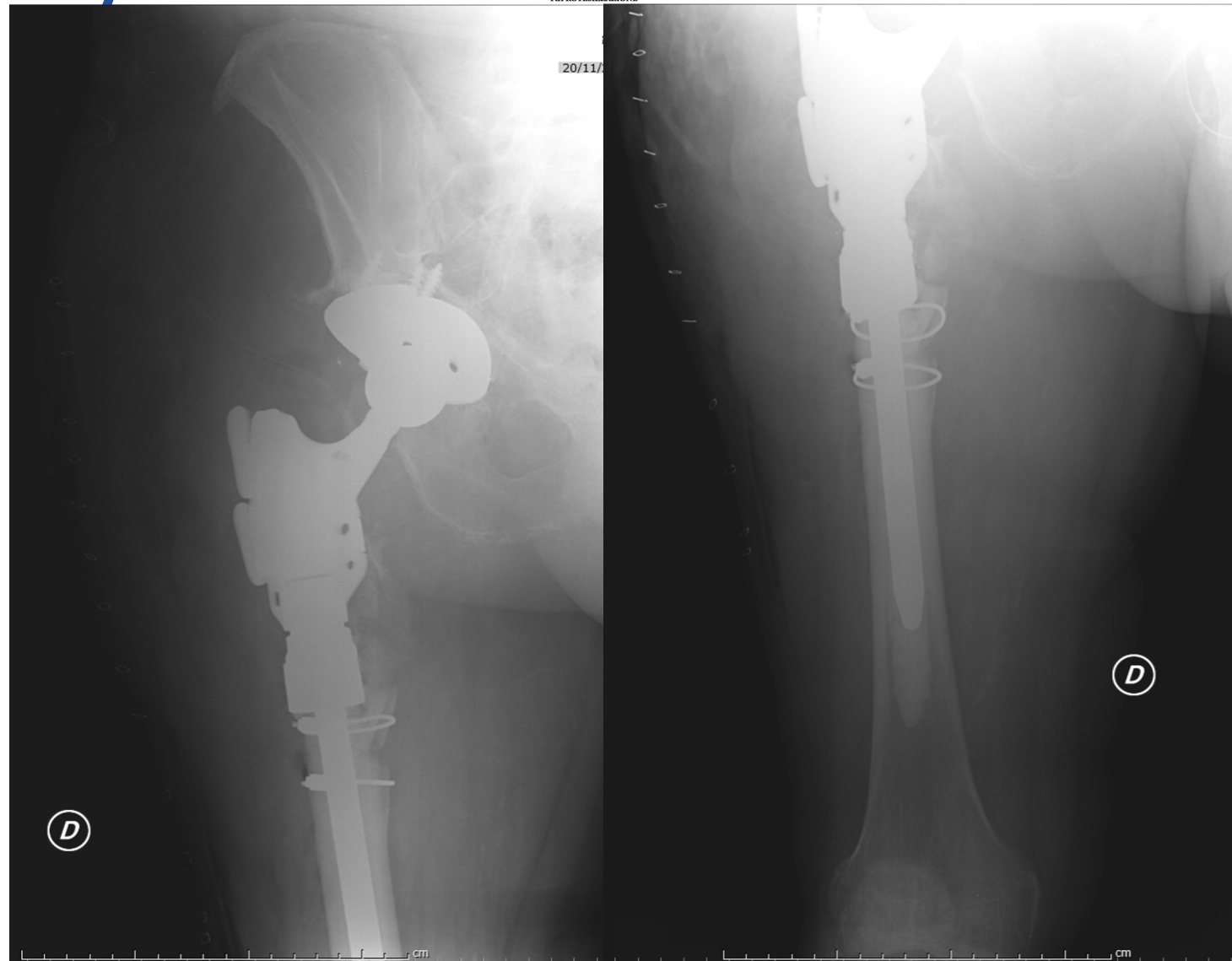






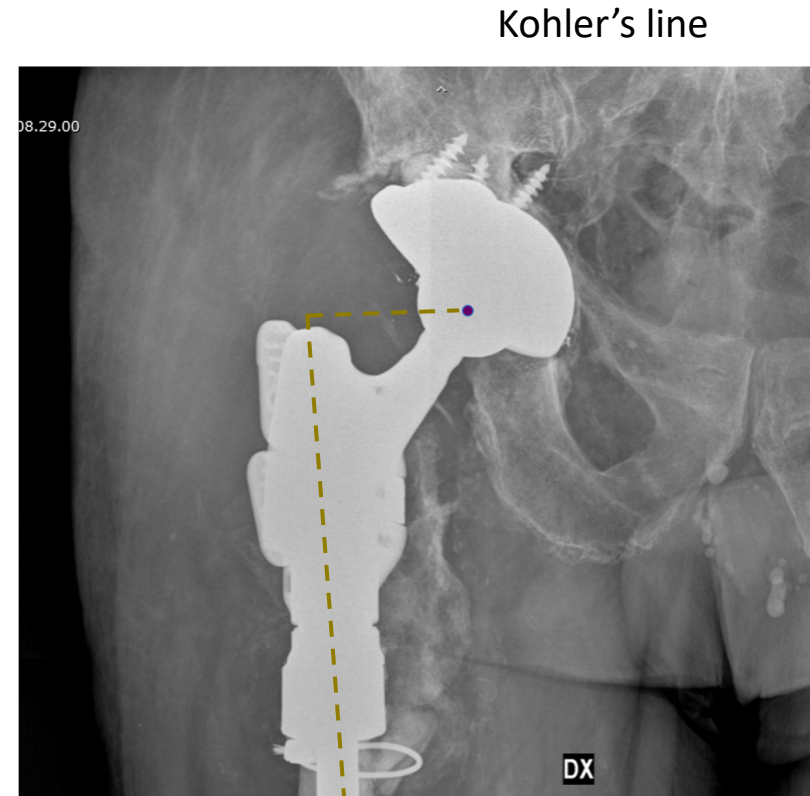
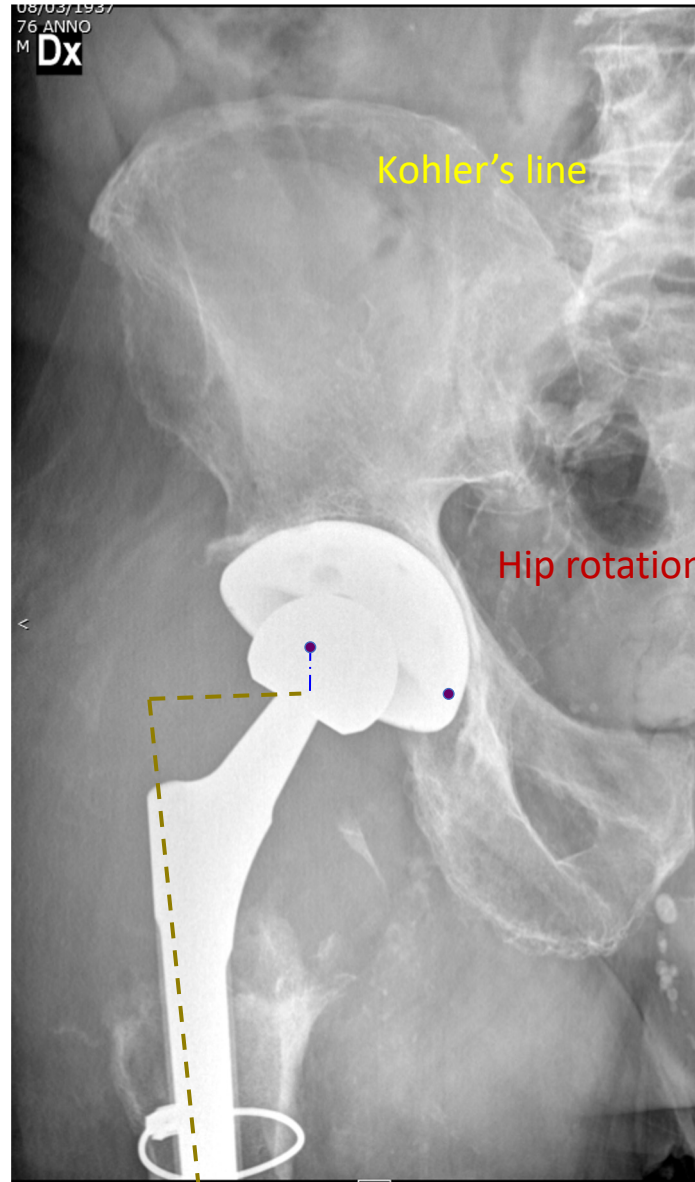


# Post operative X rays





# Pre-op VS post-op



# 1 month



2 months



5 months



6 months

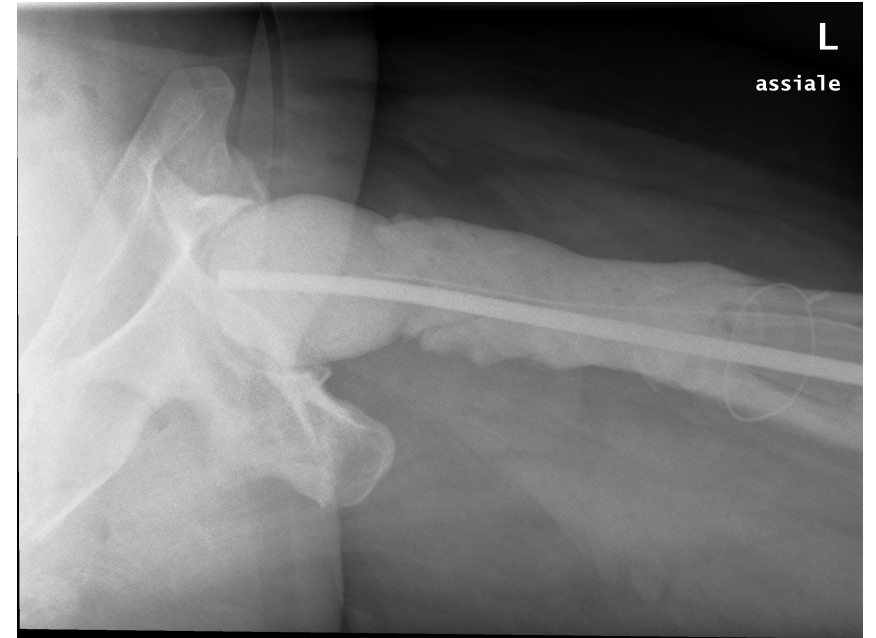


L.S.

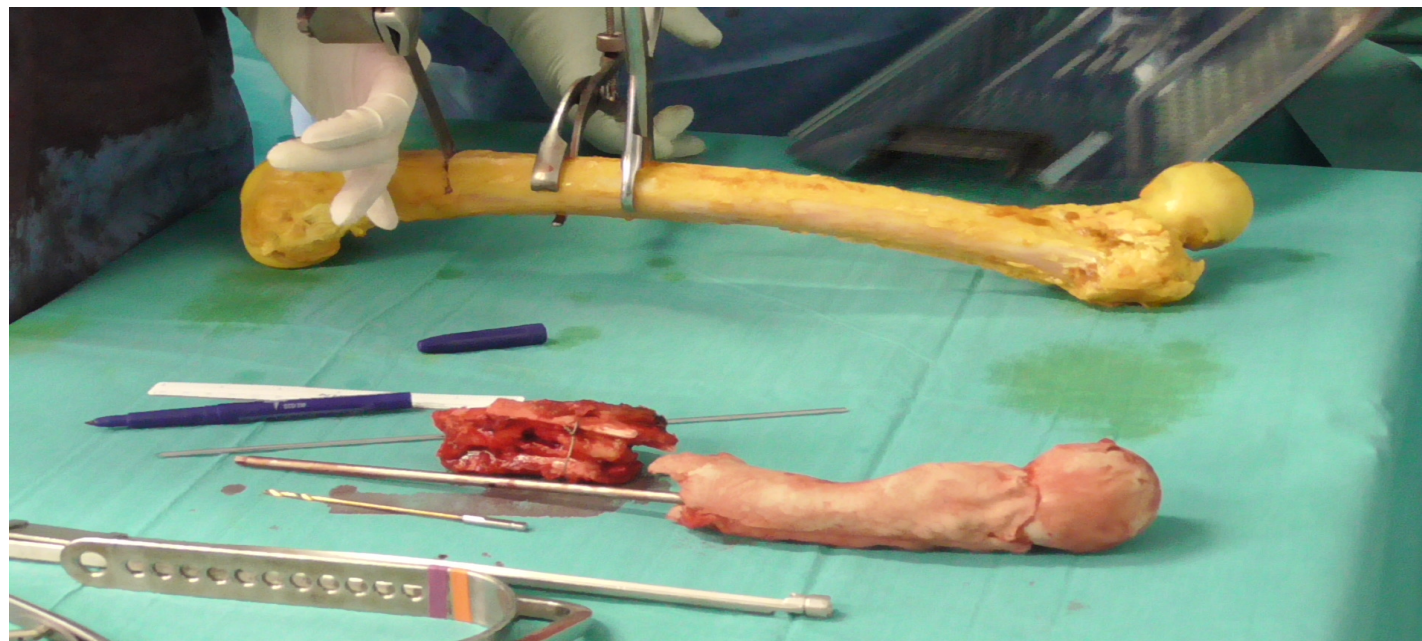
### Cenni Anamnestici

- Anno: 2015 Età: 48 Descrizione: Biopsia ossea femore sin per localizzazione secondaria di adenocarcinoma mammario Anestesia: generale Complicanze Anestesiologiche:
- Anno: 2015 Età: 48 Descrizione: Resezione del III prossimale femorale sin e sostituzione con Protesi modulare anallergica Anestesia: generale Complicanze Anestesiologiche:

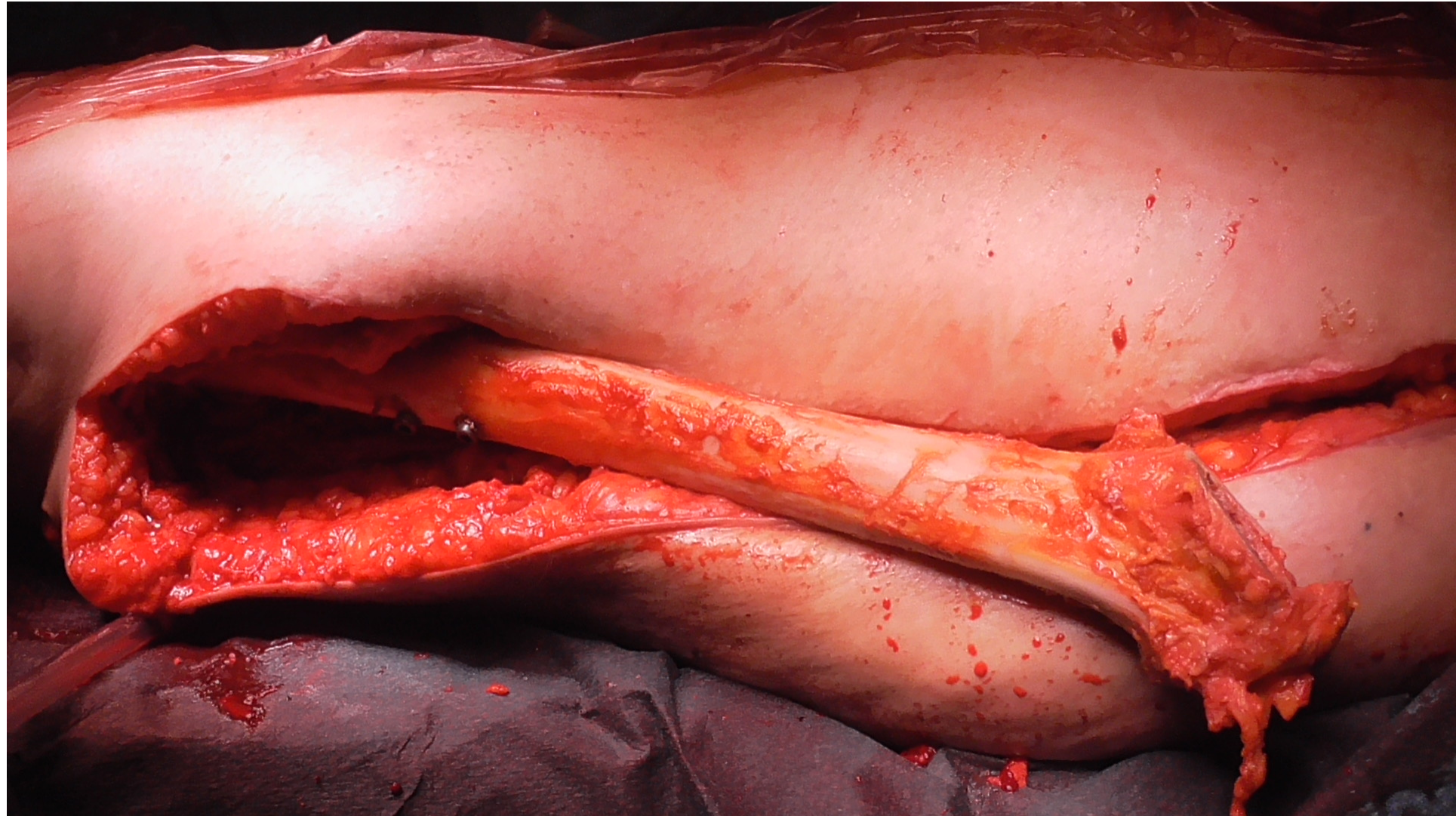


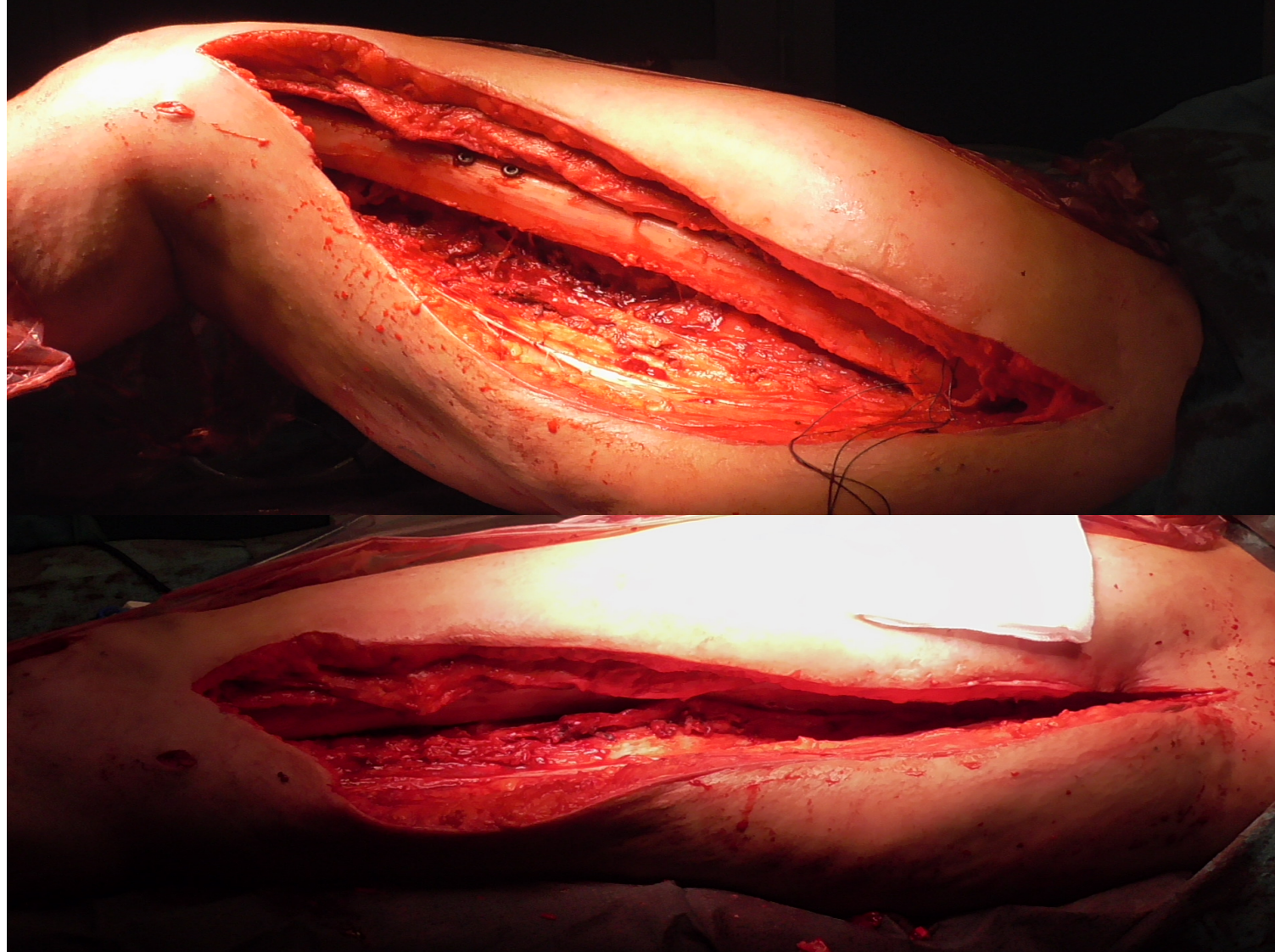




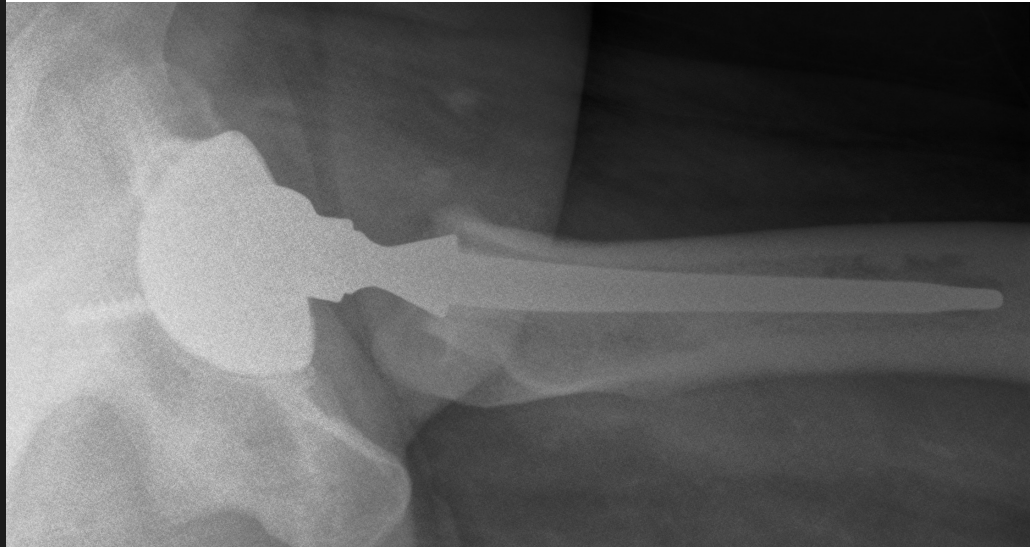


**IX Congresso Nazionale A.I.R.**  
Il Recupero delle geometrie articolari nelle revisioni protesiche  
Verona 7-8 marzo 2024





**IX Congresso Nazionale A.I.R.**  
Il Recupero delle geometrie articolari nelle revisioni protesiche  
Verona 7-8 marzo 2024



L.S.

Follow up

30 Dicembre 2019

26 Maggio 2020





5 ottobre 2020



7 ottobre 2020 – Post rimozione mezzo di sintesi





9 novembre 2020 - Controllo a 1 mese



# Conclusioni

- Il bone loss femorale rappresenta un problema raro ma rilevante in chirurgia protesica di revisione
- La radiografia molto spesso sottostima i difetti ossei femorali
- Chirurgia ad elevato rischio di complicanze
- Stretto follow-up e gestione/prevenzione tempestiva delle complicanze

