

# CONGRESSO NAZIONALE SIFE

Rigenerazione Ossea con tecniche di fissazione interna ed esterna.  
Prevenzione e trattamento delle infezioni ossee in traumatologia

27-28 Ottobre 2023

**MILANO**

**SIFE**  
SOCIETÀ ITALIANA  
FISSAZIONE ESTERNA

## I difetti ossei: trattamento biologico e non **IL PERONE VASCOLARIZZATO**

*Bruno BATTISTON*

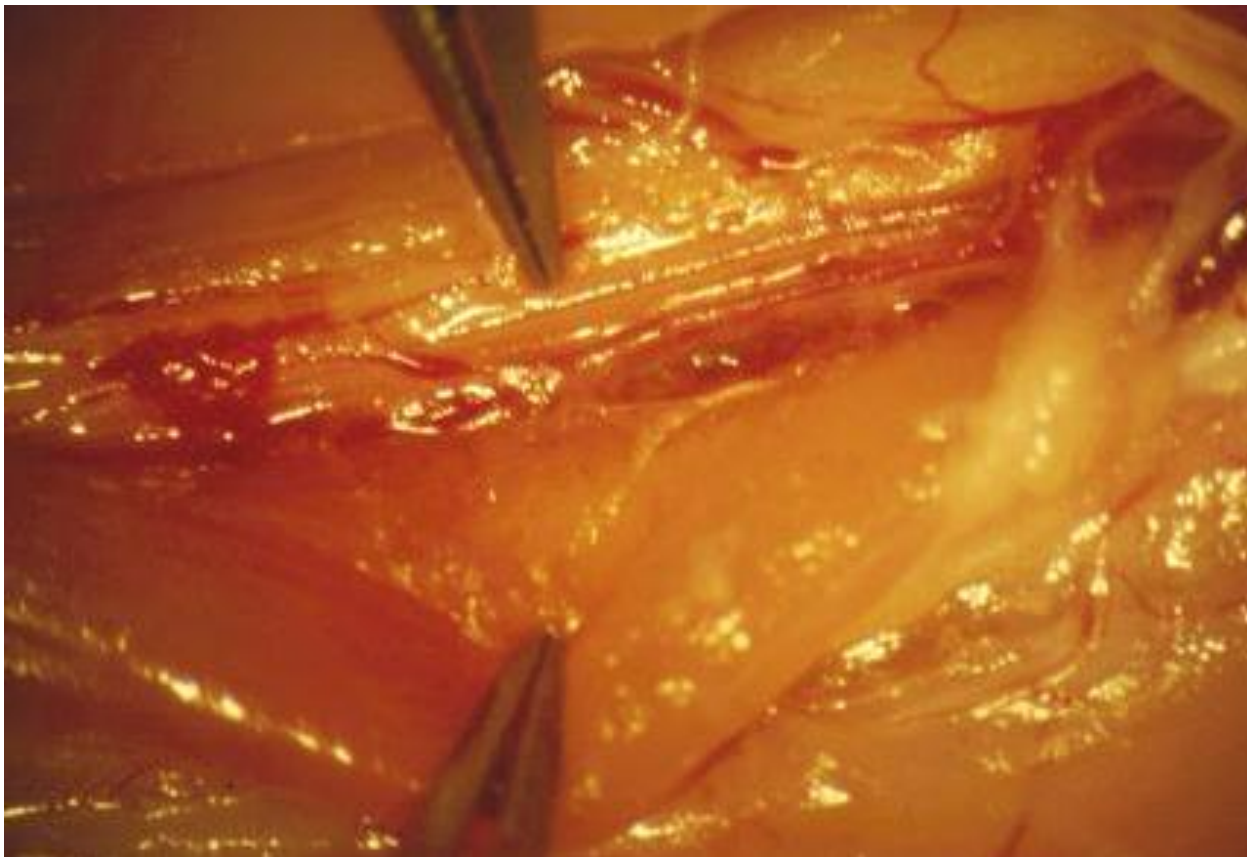
Direttore U.O.C. Traumatologia ad indirizzo Chirurgia della Mano e Microchirurgia  
Dipartimento di Ortopedia e Traumatologia C.T.O. - Città della Salute e scienza - Torino

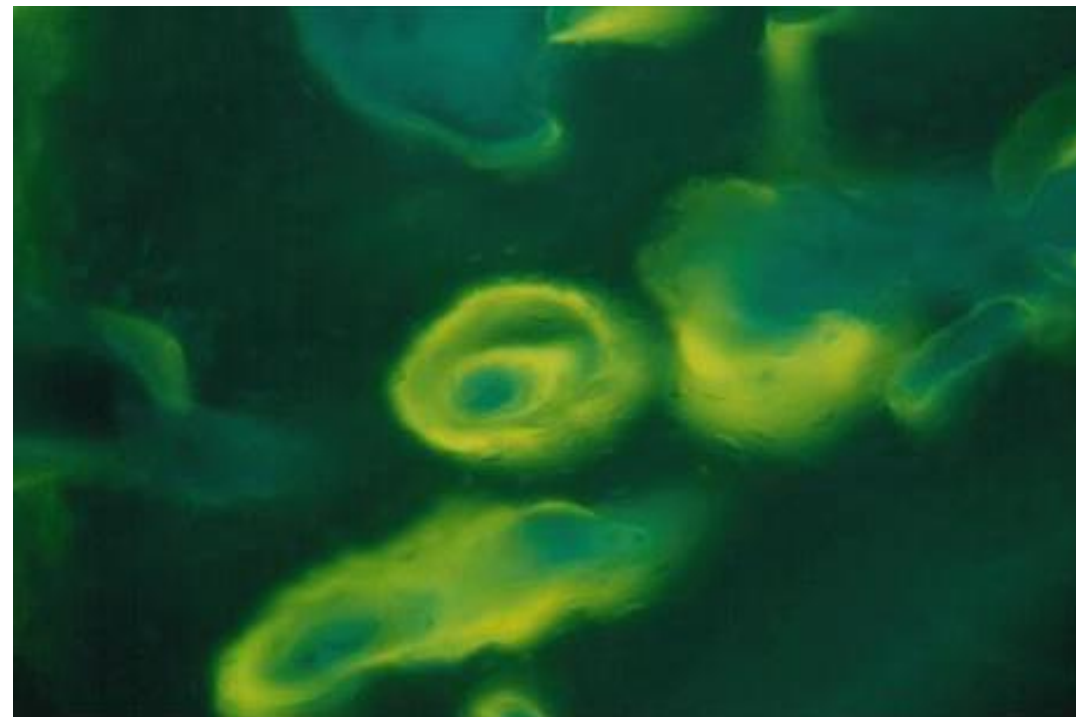
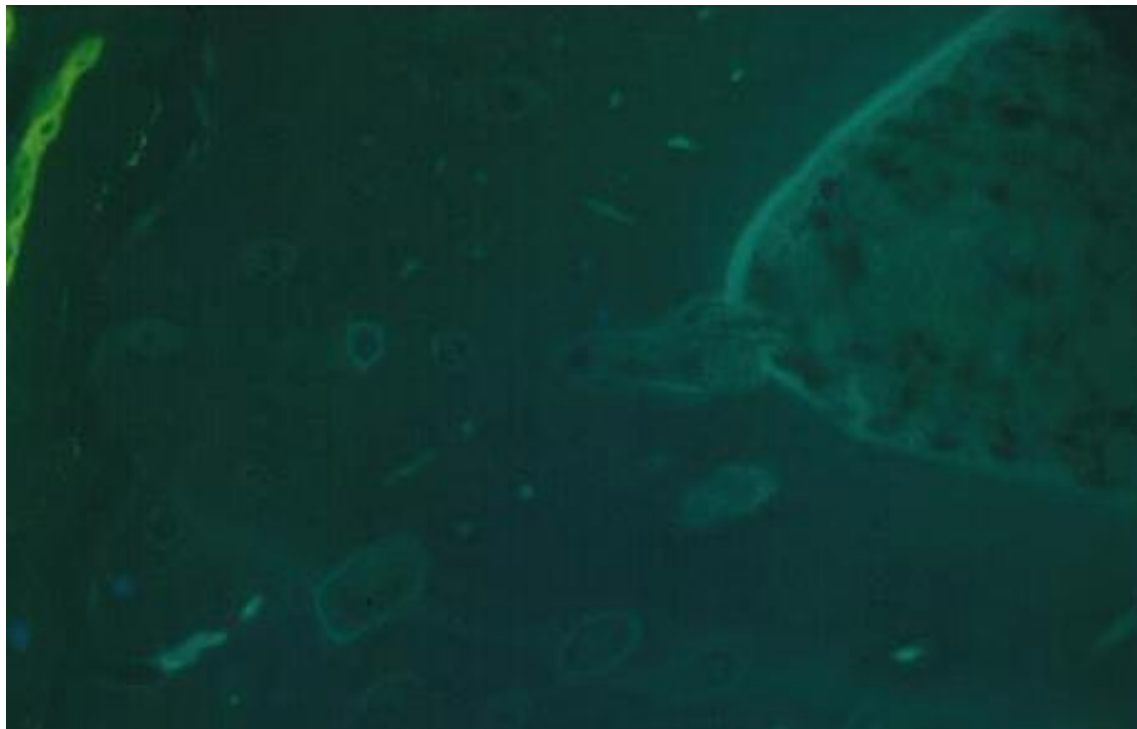
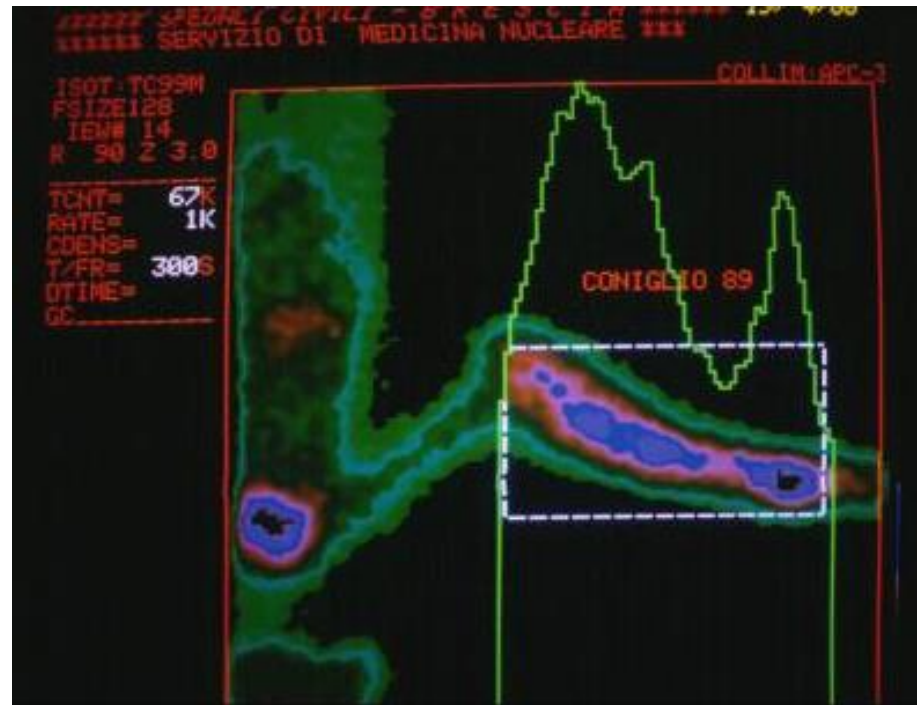


Gruppo di Chirurgia della  
Mano e dell'Arto Superiore  
del C.T.O. di Torino

**RICERCA SPERIMENTALE**  
**Battiston et al., GIOT 1989**

**Innesti ossei vascolarizzati  
versus avascolari nel coniglio**

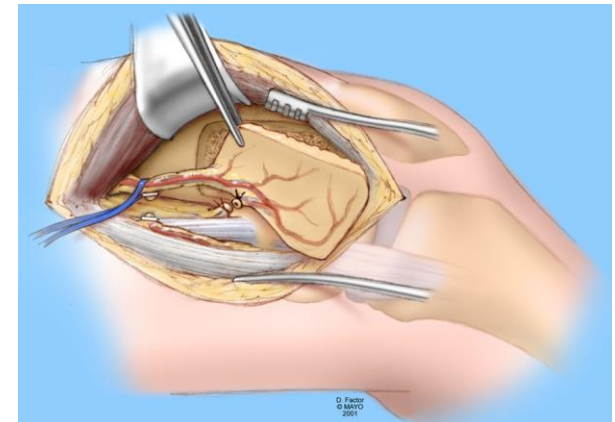
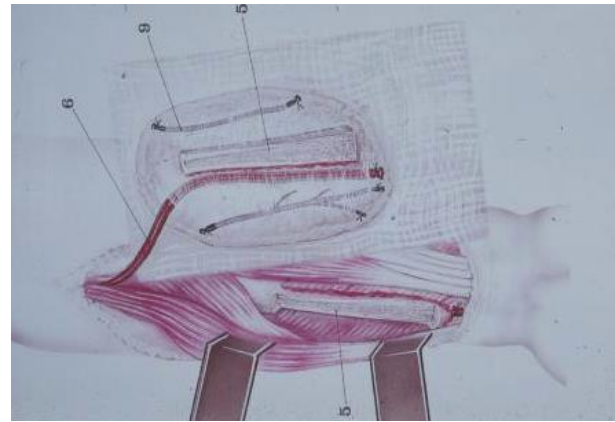
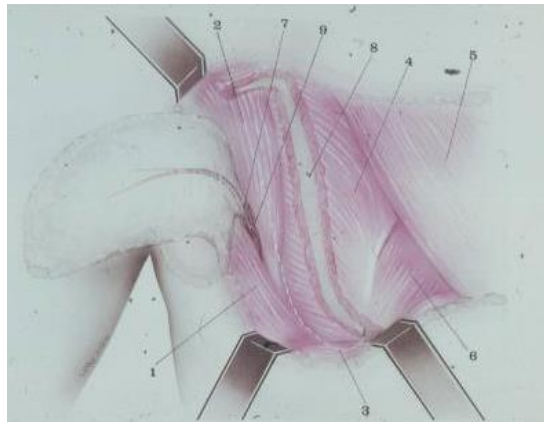
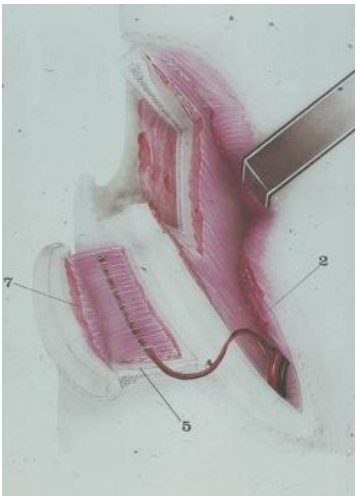






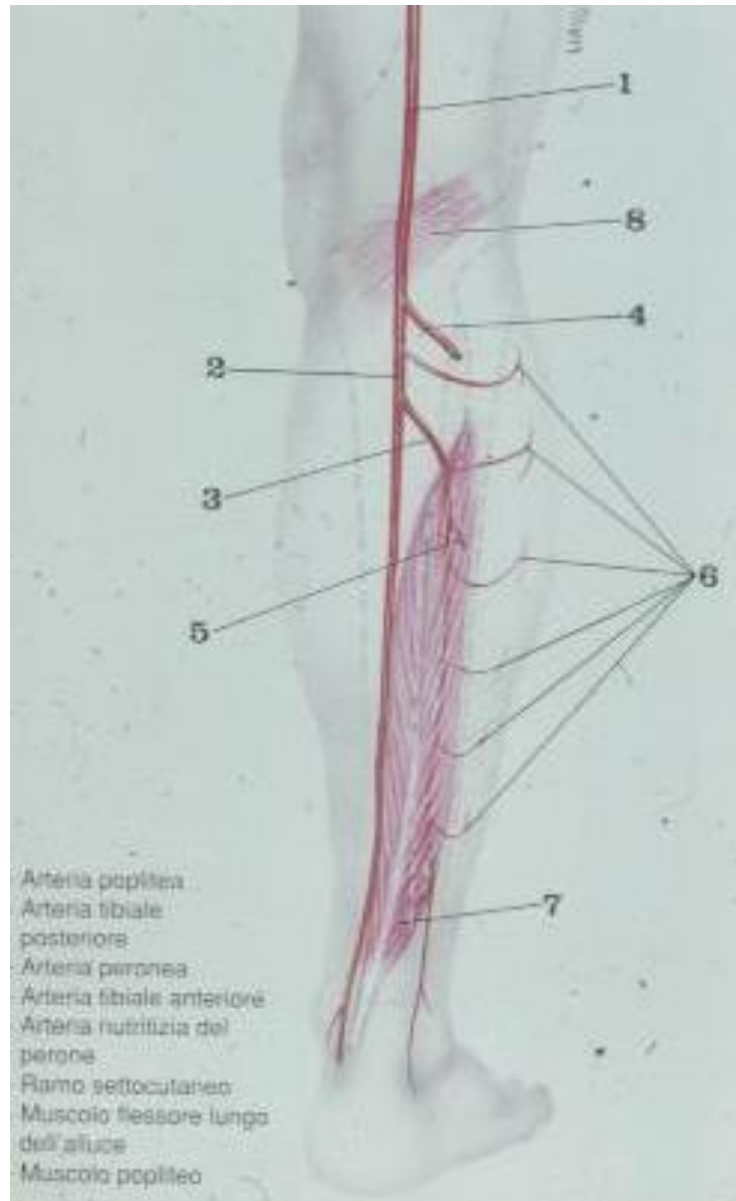
# STUDI ANATOMICI

hanno portato all'identificazione di numerosi innesti ossei che possono essere trasferiti ricostituendone la vascolarizzazione





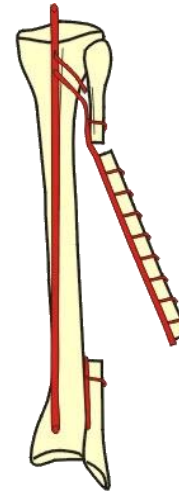
# PERONE VASCOLARE





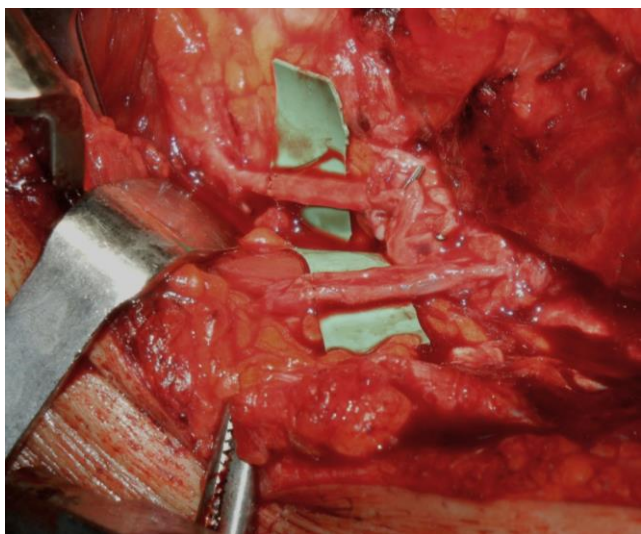
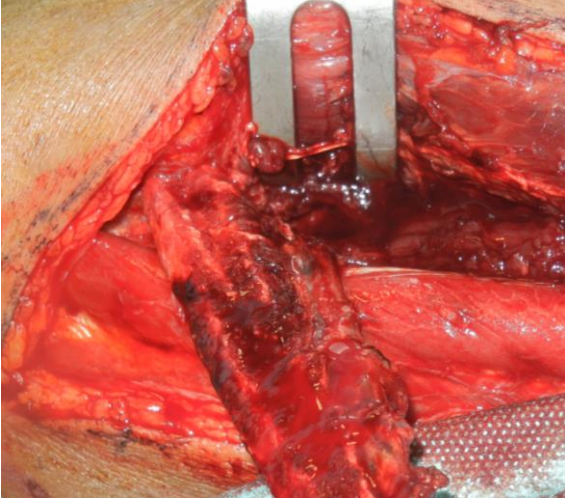
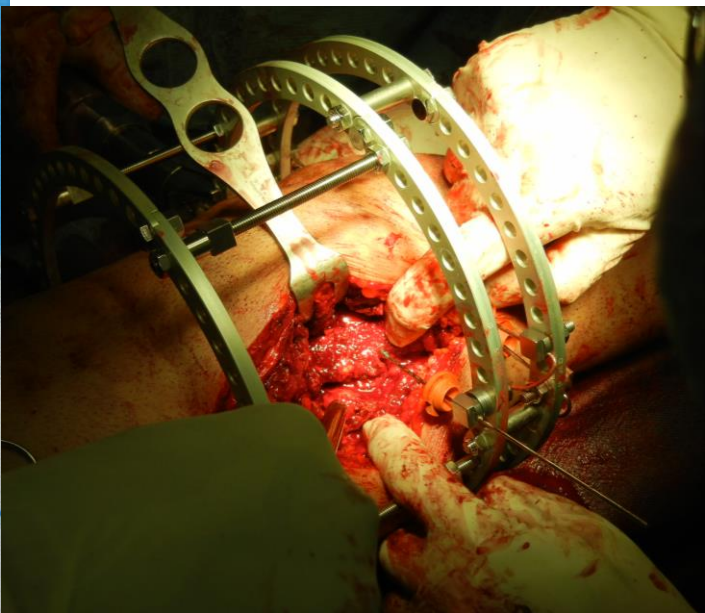
PERDITE DI SOSTANZA

POST - TRAUMATICHE







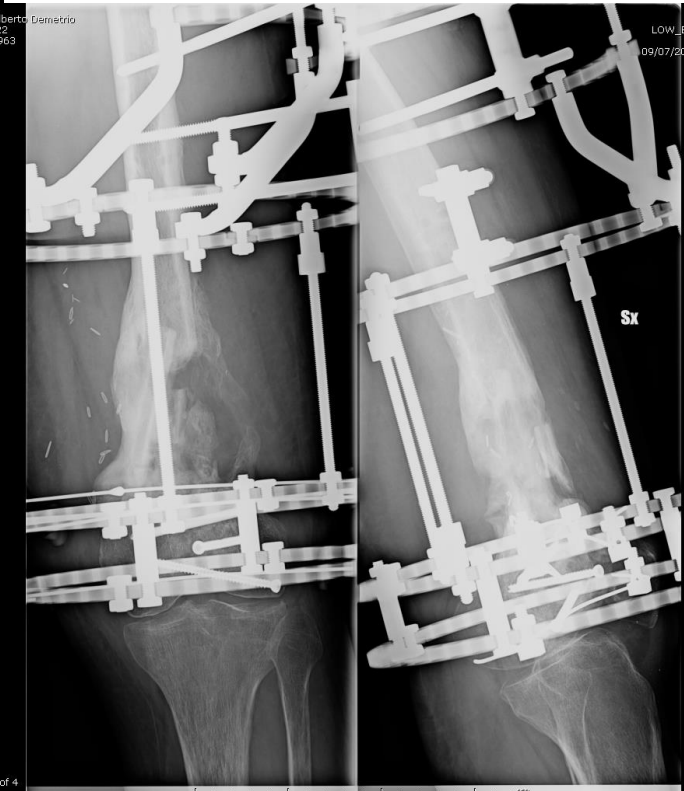






SN

Girino, Alberto Demetrio  
 35005122  
 10/05/1963  
 49 YEAR  
 M



Sx

C.T.O. (TO)  
 LOW\_EXM, FEMORE  
 FEMORE  
 09/07/2012 11:37:17  
 61246719

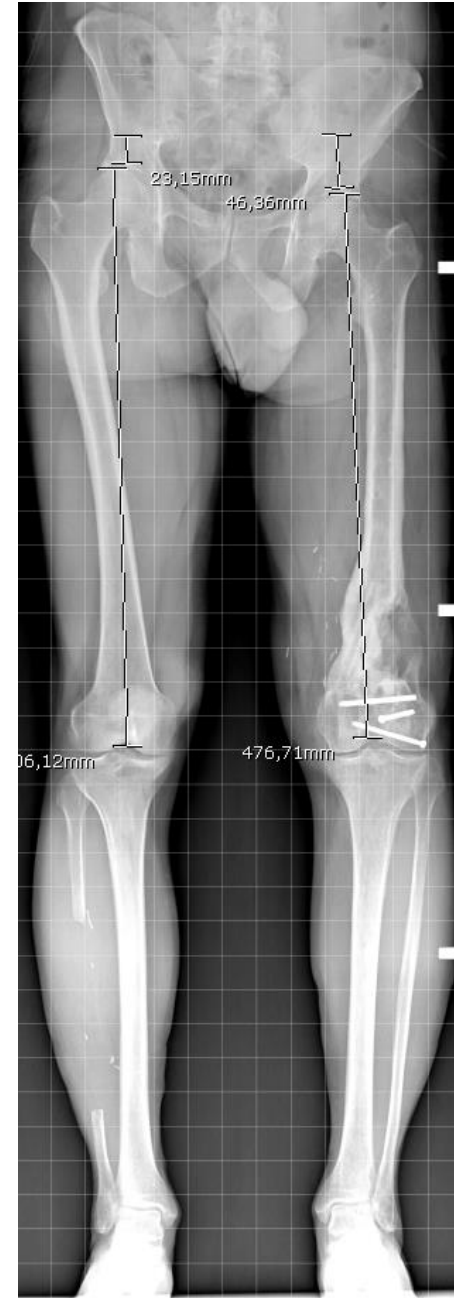
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IM: 1001



SN







# **PATIENTS AND METHODS**

## **A RETROSPECTIVE COMPARATIVE COHORT STUDY**

### **COHORT A**

- **10 Patients**
- **10 Atrophic Nonunions**
- **Min. 1 Operation Failed**
- **Free Doi-bishop Flap**
- **Follow Up Until Union**

### **COHORT B**

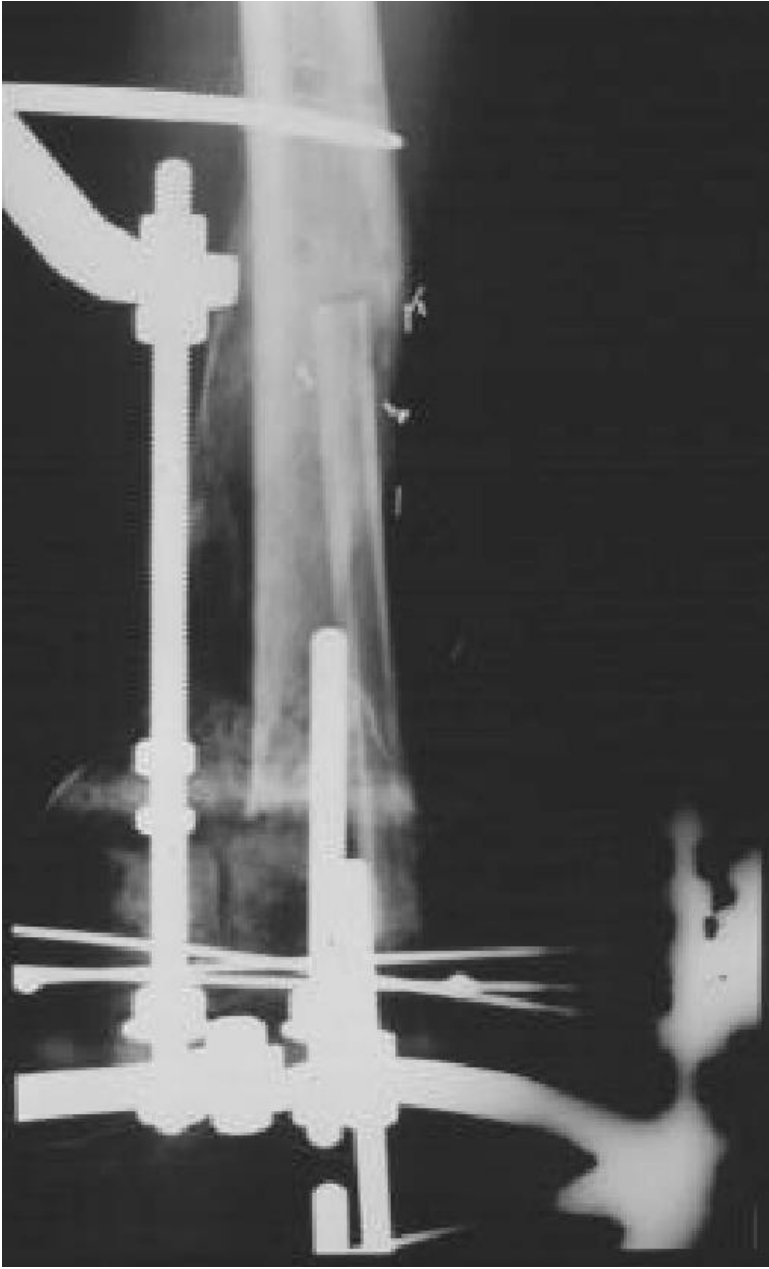
- **10 Patients**
- **10 Atrophic Nonunions**
- **Min. 1 Operation Failed**
- **Standard Cancellous Bone Graft**
- **Whatever Biologic or Pharmacologic Factor**
- **Follow Up Until Union**



# RESULTS

- **Comparable Healing Rate (100% Vs 90%)**
- **Significative Shorter Healing Time (3,2 Vs 8,8 Months)**
- **Juxtacortical Bony Bridges as Early as 6 To 8 Weeks**
- **No Vascular or Septic Complications**
- **No Donor Site Morbidity**
- **Early Mobilization of Limbs**







# Treatment of acute bone defects in severe lower limb Trauma

[B Battiston](#)<sup>1</sup>, [D Santoro](#)<sup>2</sup>, [R Lo Baido](#)<sup>2</sup>, [F Pasquero](#)<sup>2</sup>

Affiliations + expand

PMID: 31708086 DOI: [10.1016/j.injury.2019.10.046](#)

## Abstract

**Purpose:** To present our experience in the management of acute large bone defects treated with the use of vascularized fibular grafts supported by Ilizarov circular external frames.

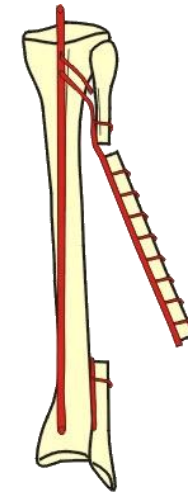
**Patients and methods:** During a period of 6 years (from 2007 to 2013) 8 patients with acute large bone defects (IVB according to Winquist modified classification) were treated at our institution with early bone reconstruction by means of microvascular fibular grafts. All patients were evaluated by the use of the following parameters: X-ray consolidation, discharge time, duration of treatment, malalignment of the lower limb and final leg length discrepancy, knee and ankle mobility (ROM), pain (VAS), number of eventual additive treatments (plastic surgery, etc.), walking independence (use of crutches), possibility to get back to work, subjective evaluation about the treatment and the result (SF-36, personal feelings about circular external fixator dressing) **RESULTS:** The mean treatment time, often connected to the mean consolidation time, was 61 weeks and the mean number of operations was 7.6. Six of the eight patients got back to their previous daily activities and work, without any further issues.

**Discussion:** based on our experience, Ilizarov and fibular vascular grafts are not alternatives, as often reported in literature. Their combined use, especially in lesions as those classified as Winquist IV B, can represent an effective tool in the surgeon's hands to solve the most difficult cases of acute bone loss caused by severe high-energy traumas.

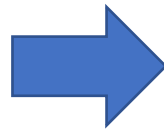
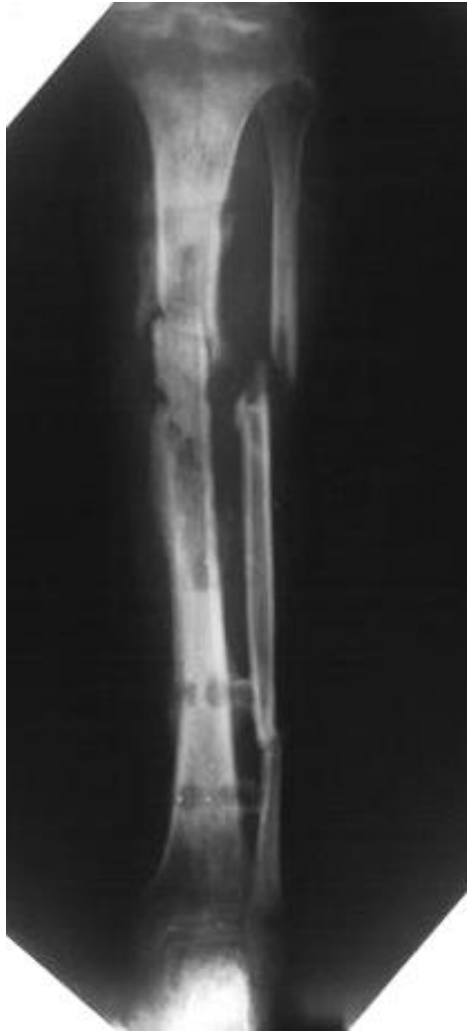
**Keywords:** Acute bone defects; Lower limb; Trauma.

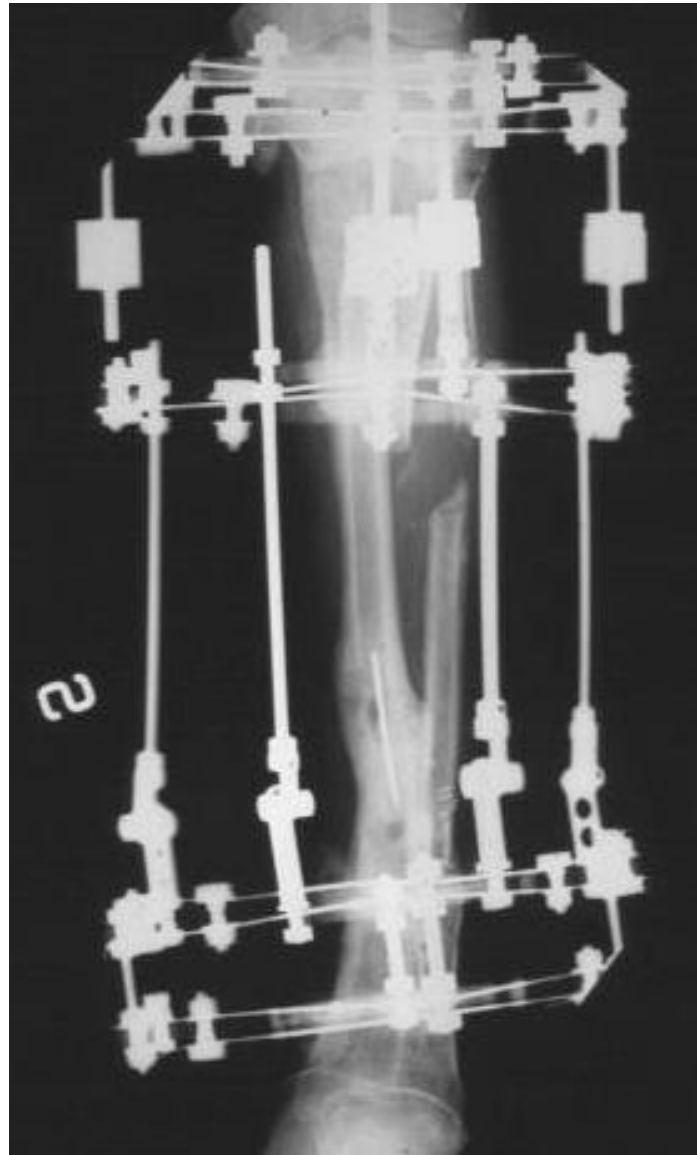
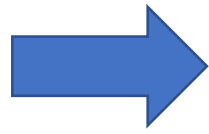
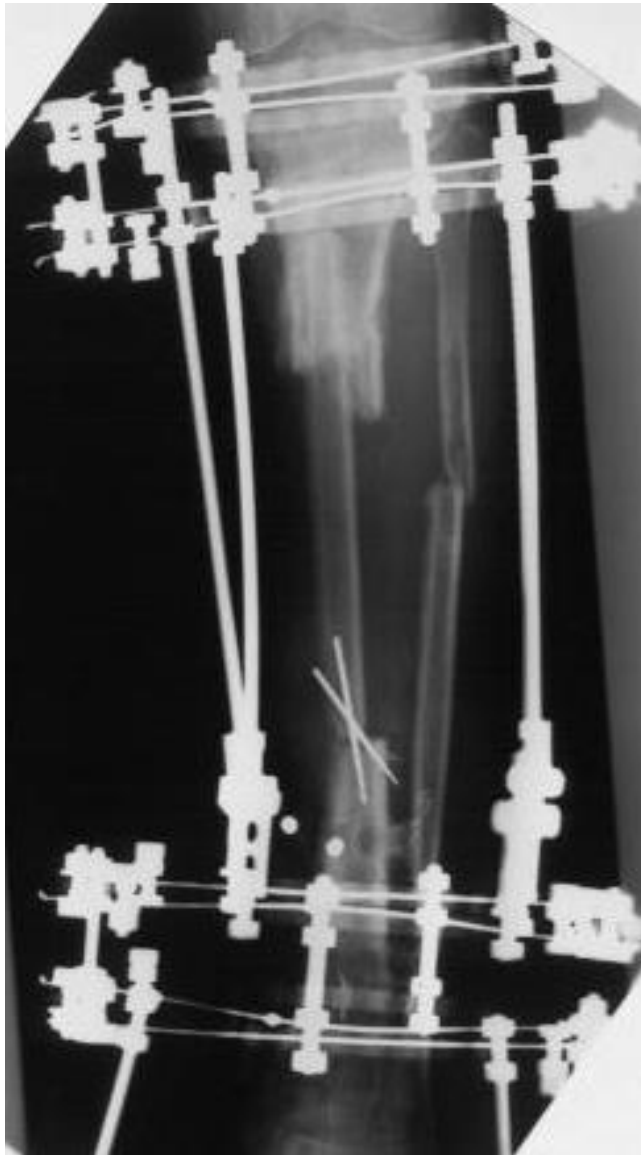
NECROSI ED

OSTEOMIELITI



**Osteomyelite infetta di tibia in frattura ampiamente esposta. già trattata con 2 interventi di fissazione esterna. Due tempi. 1) resezione e copertura con lembo. 2) innesto osseo di perone vascolarizzato**

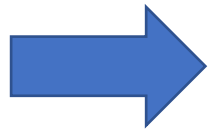
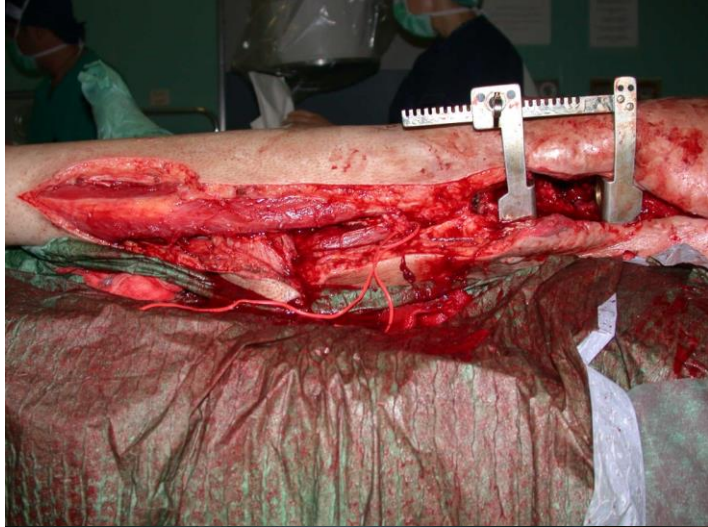






**Osteomielite infetta di femore in p.d.s. già trattata con 3 interventi di fissazione esterna (damage control, innesto osseo, trasporto con Ilizarov) : 1 tempo**







PAULUZZI ALESSANDRO  
31SLM481347  
1  
FEMORE  
Acct# 954576  
Pos. paziente: SUPINO  
Visualizza pos.: AP

Az. Osp. S. Corona - Radiologia  
KODAK CR900  
2-feb-2006 11:29:20  
Desc. studio: FEMORE SINISTRO(2PR)



Az. Osp. S. C.

2-  
Desc. studio: FEMORE



Az. Osp. S. Cor

2-fe

Desc. studio: FEMORE

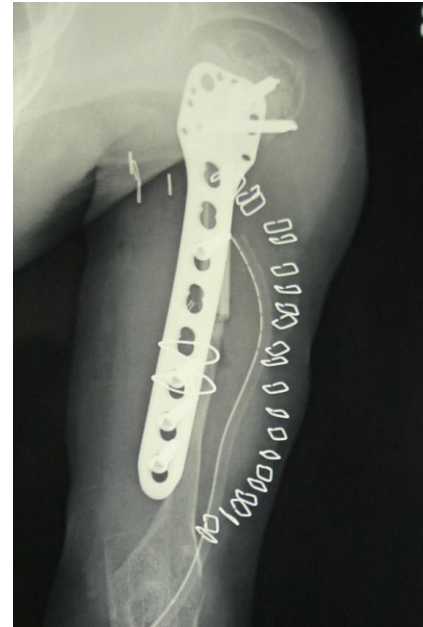
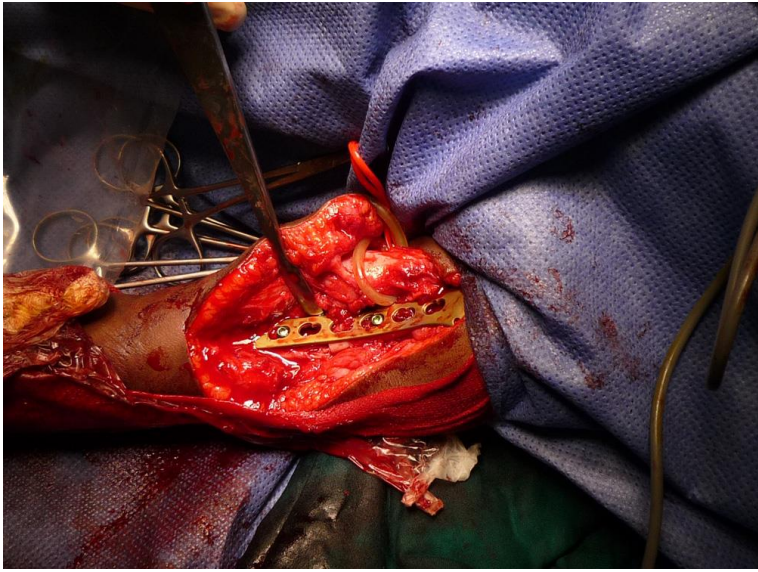
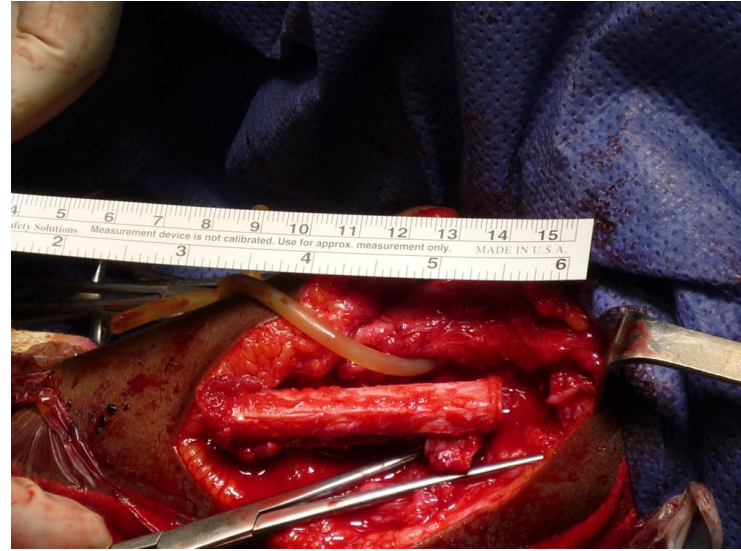
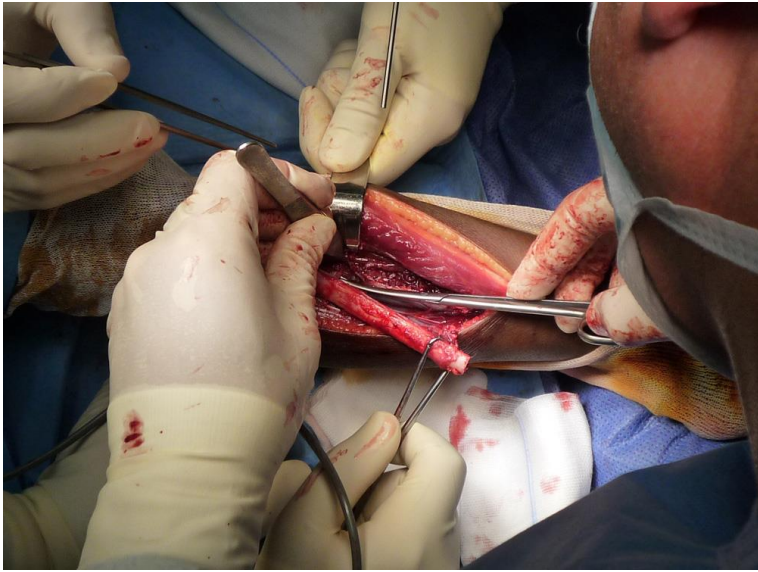




# Osteomyelite acuta ematogena non trattata in età infantile in bambina di famiglia immigrata







DIALLO,AYSSATA  
26/11/2003  
SESSO:F  
ETA':008Y



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RX OMIERO SN -RX GOMITO SN  
PROIEZIONE:T058 Omero SIN

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Azienda ULSS 6 Vicenza  
Ospedale di Vicenza  
PO\_VICENZA  
W 3080 - L 1847

DIALLO,AYSSATA  
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SESSO:F  
ETA':008Y



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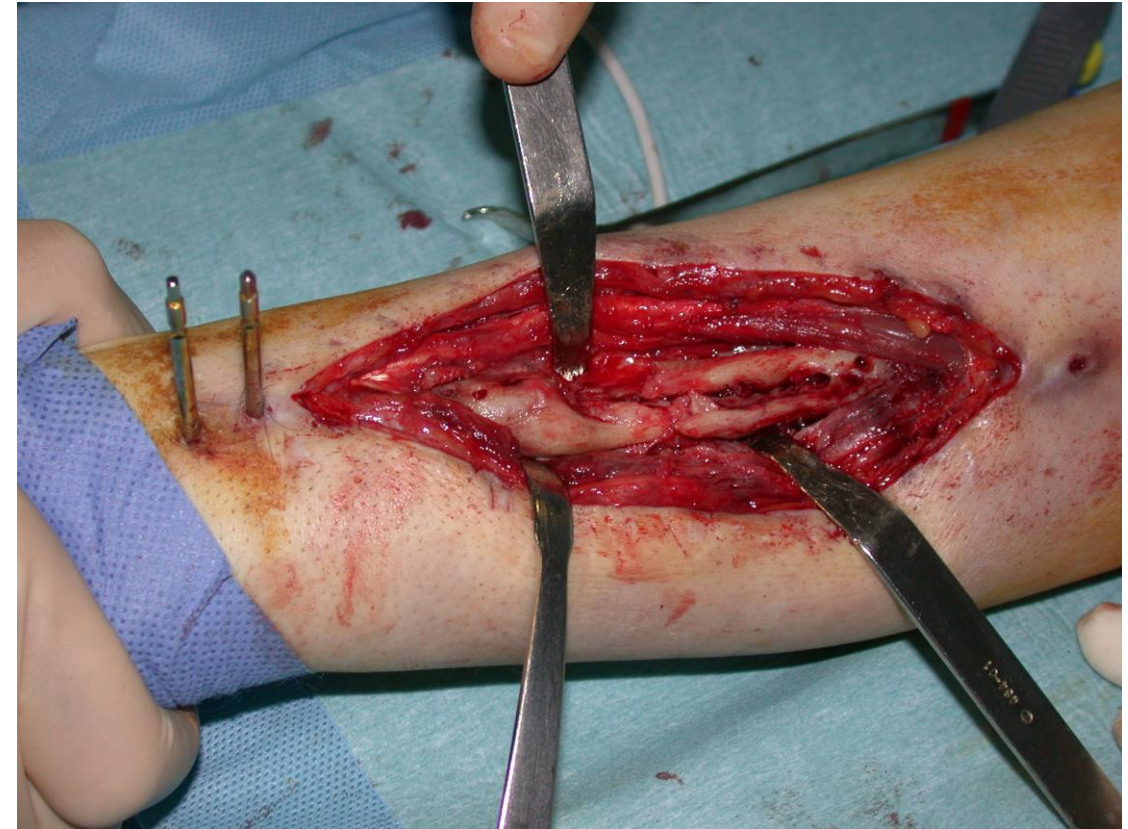
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W T626 : L 1141



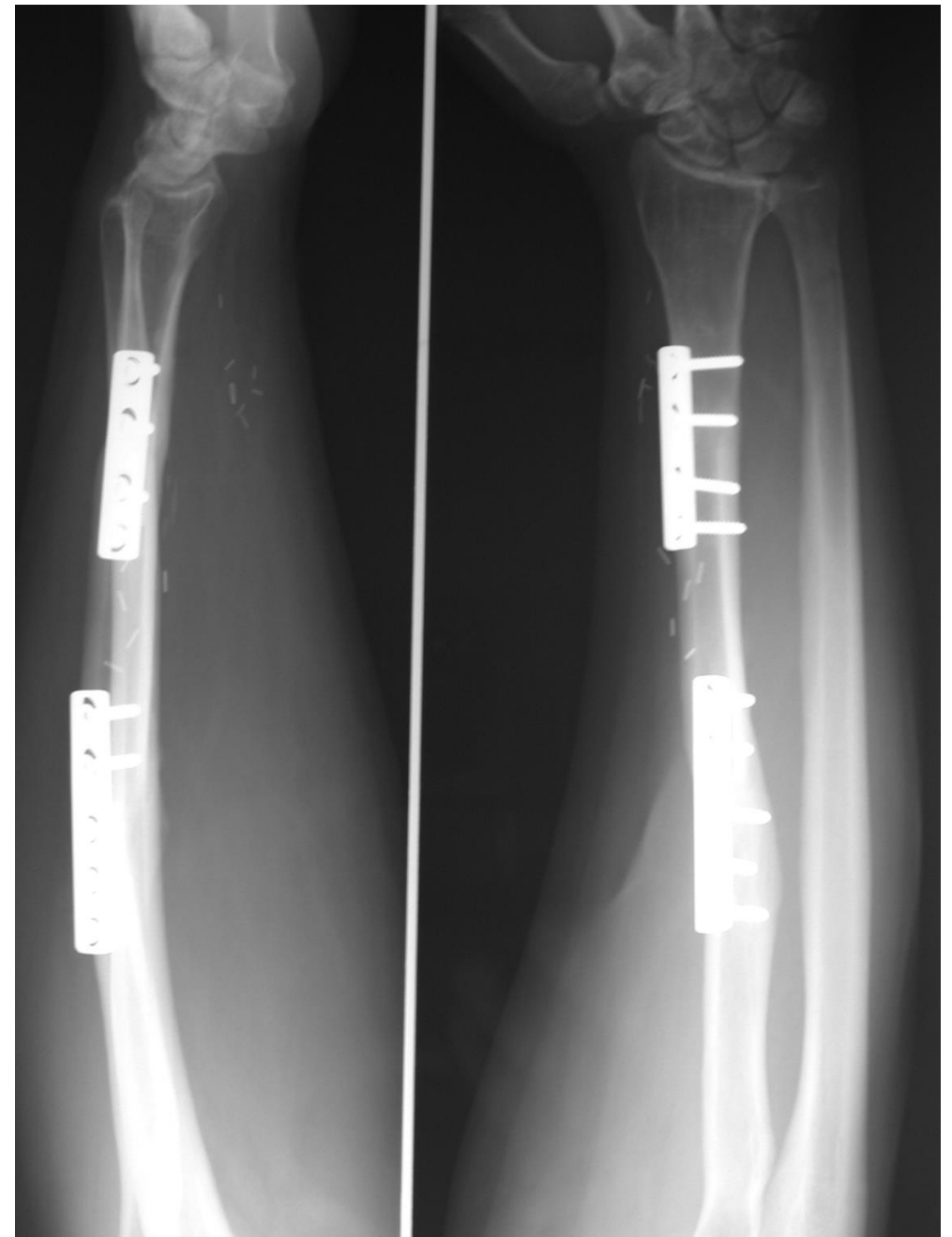


# Osteomielite acuta in frattura ampiamente esposta di avambraccio (già operata due volte). 1 tempo



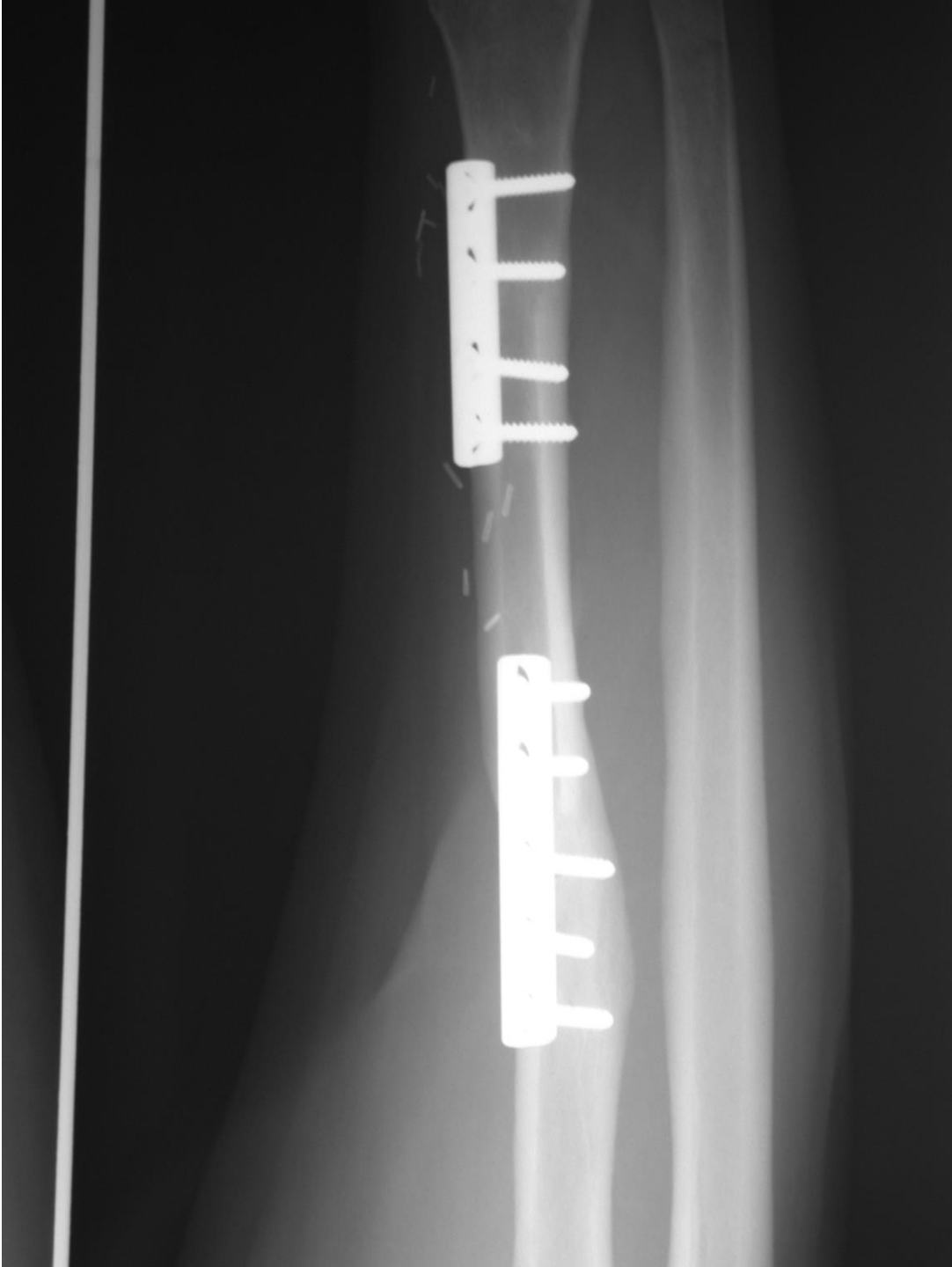


**70 giorni**



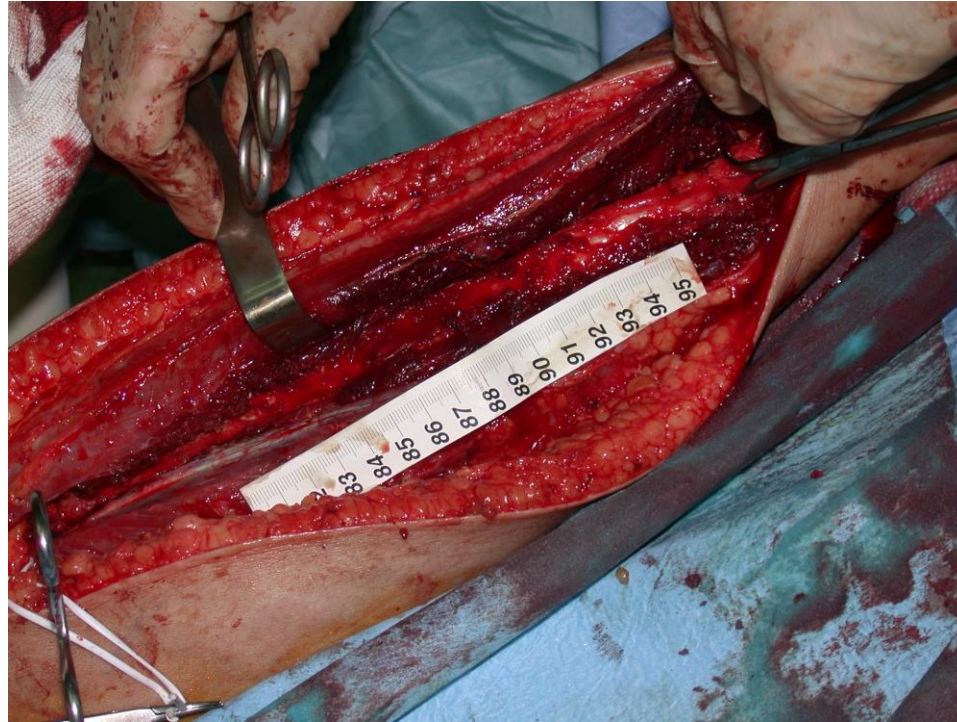
**6 mesi**







**LUNGHEZZA MEDIA DEL DIFETTO OSSEO : 8 cm  
(RANGE 5 cm - 15 cm)**

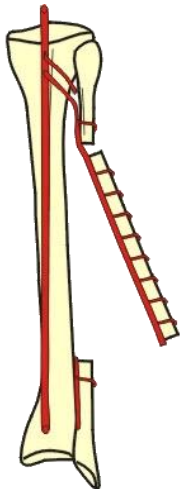


**DA 2 A 5 OPERAZIONI  
PRIMA DEL TRASFERIMENTO DI PERONE VASCOLARE**

***20% IN 1 TEMPO***

***80% IN 2 TEMPI***

- 1) Resezione e sterilizzazione, eventualmente con lembo di copertura nel primo tempo**
- 2) Innesto osseo vascolarizzato nel secondo tempo**



# RISULTATI

**IN TUTTI I CASI L'INFEZIONE E' SCOMPARSA**

F.U. min 2 aa.

## ARTO SUPERIORE

CONSOLIDAZIONE  
RADIOGRAFICA  
MEDIA **4.1** MESI  
(range 2.5-6 m)

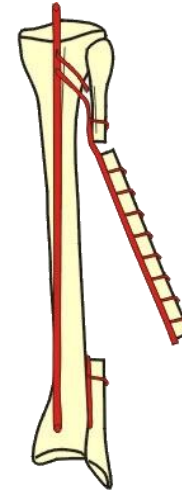
## ARTO INFERIORE

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RADIOGRAFICA  
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(range 2.5-6 m)

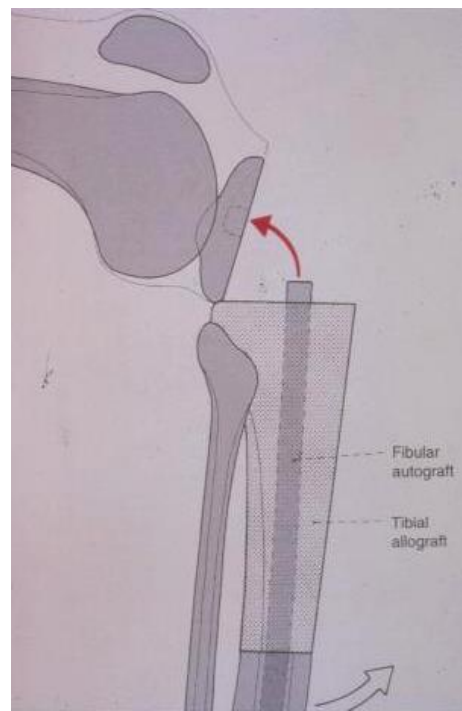
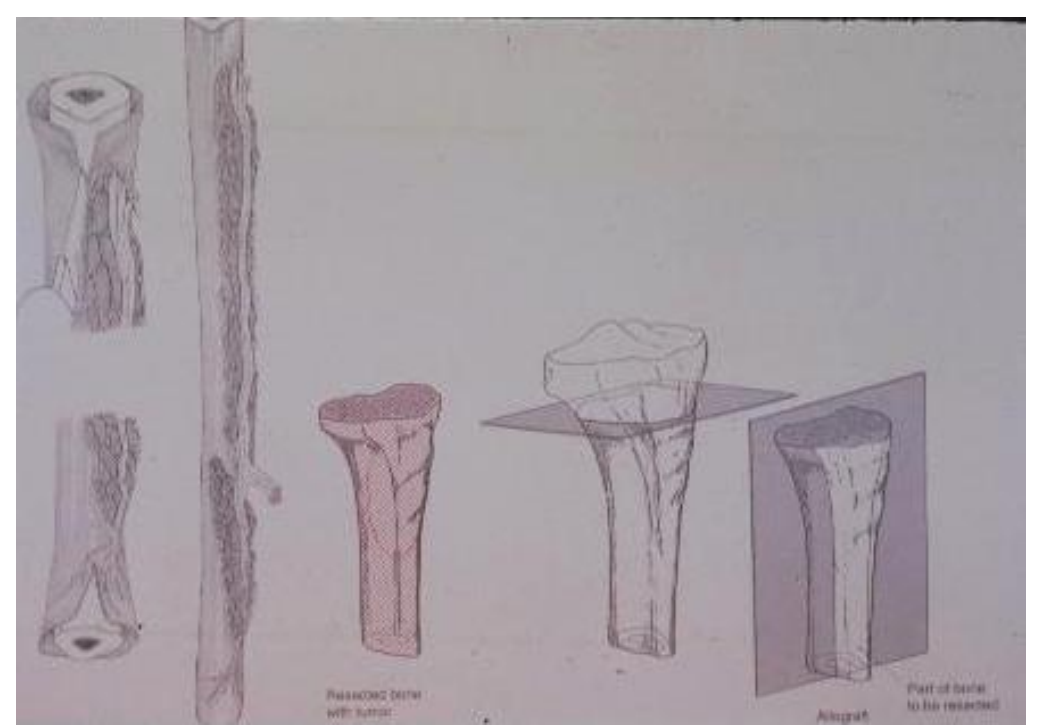
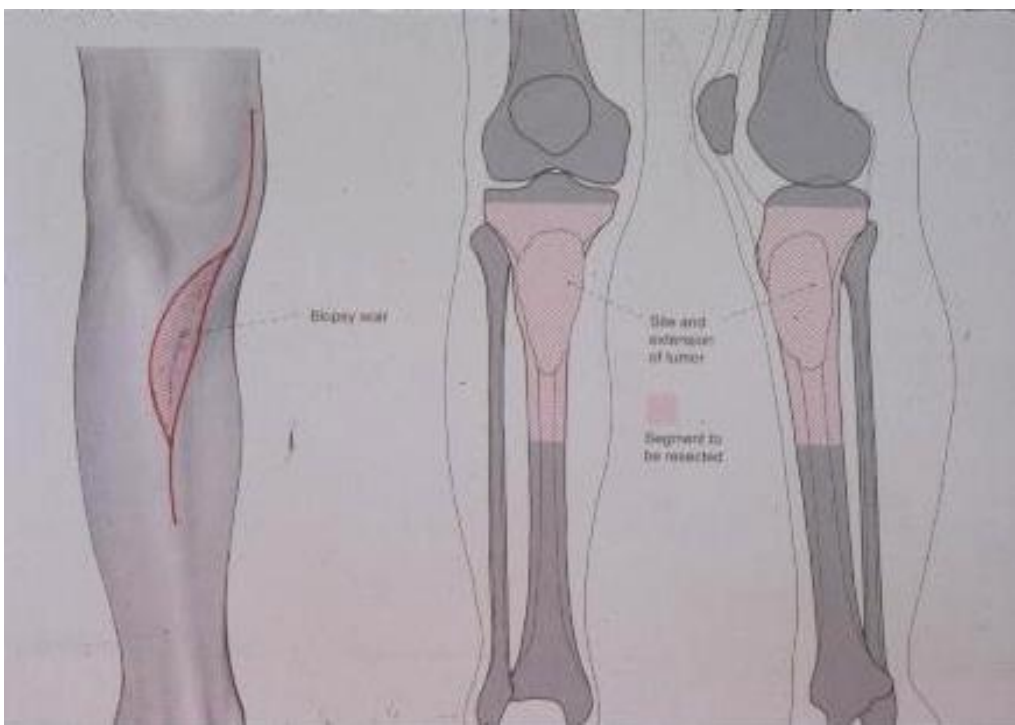
**RICOSTRUZIONE**

**DOPO EXERESI**

**ONCOLOGICHE**

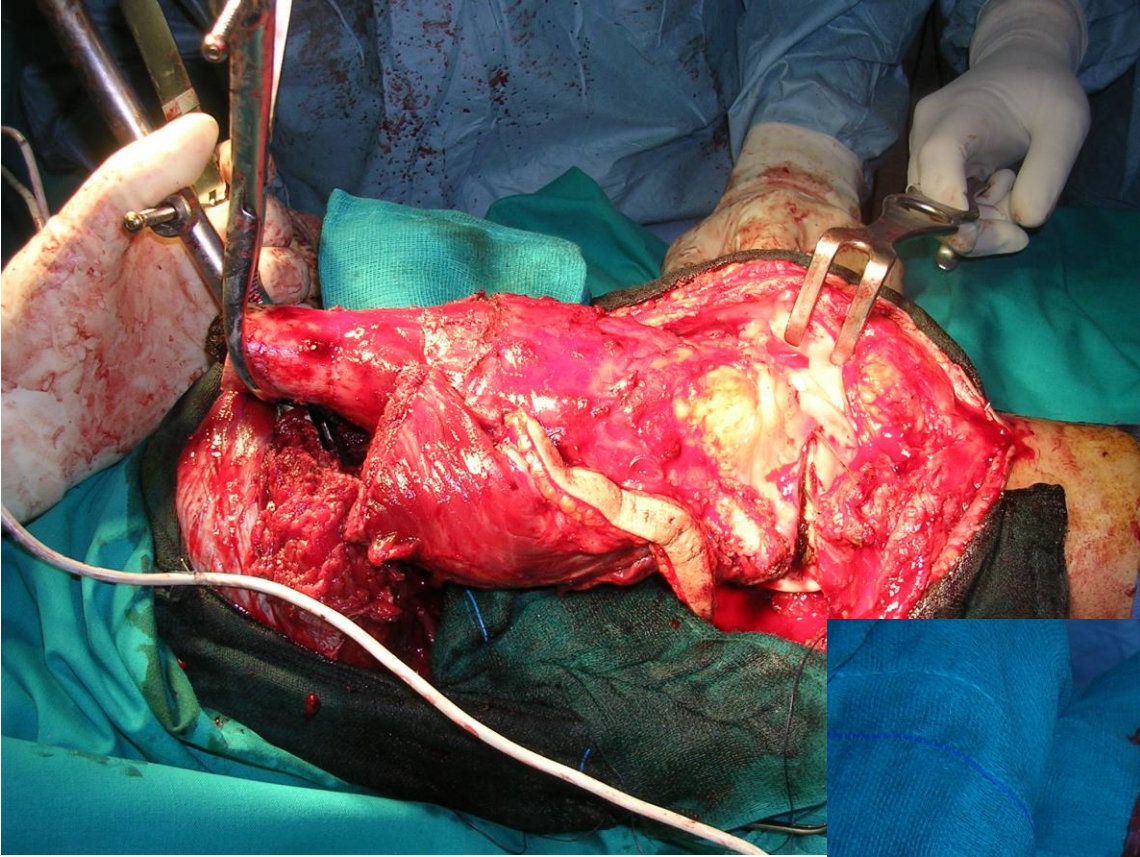




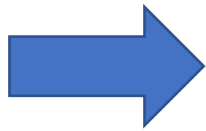
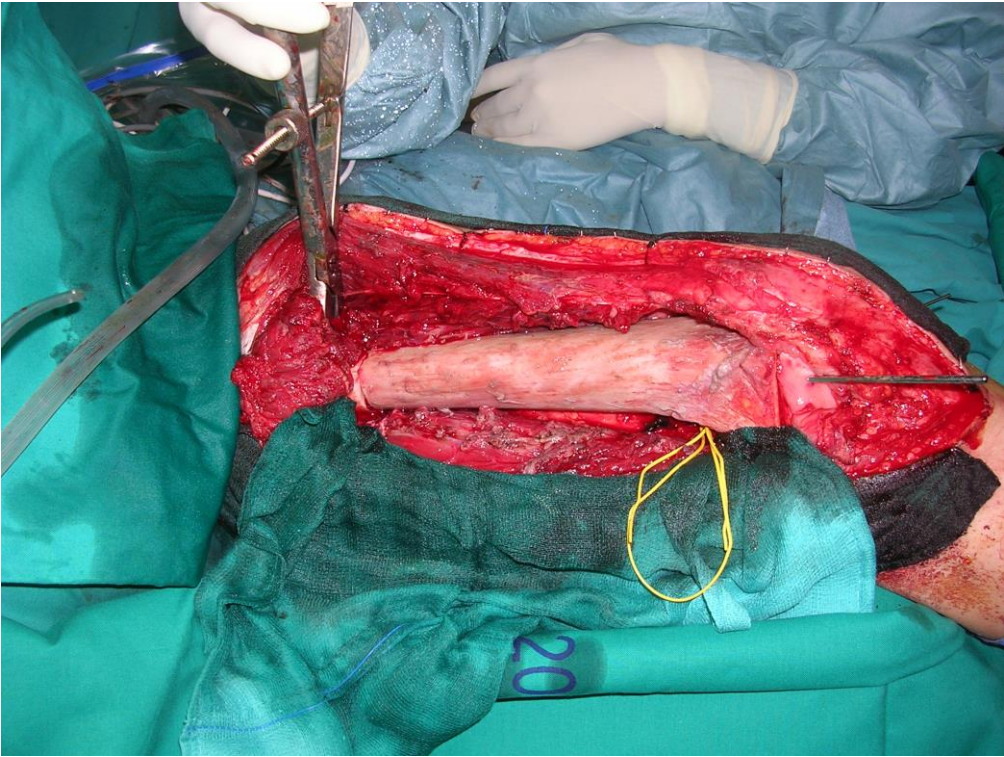






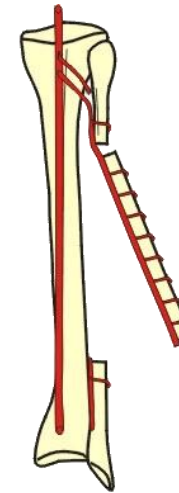




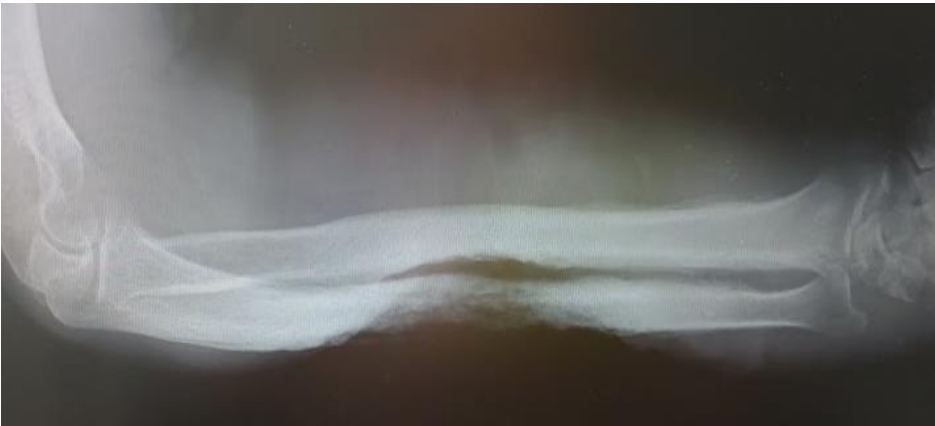




# LEMBO COMPOSITO (OSTEO-CUTANEO)



# UN TEMPO: osteocutaneo











## AVAMBRACCIO SINISTRO

FU 5 aa  
Settembre 2023



SN



23



deficit completo di estensione del polso e delle dita mano destra e sinistra, buona flessione polsi e dita.

QuickDASH score 11.8 SIN

## AVAMBRACCIO DESTRO

FU 5 aa  
Settembre 2023



DX

QuickDASH score 6.8 DX



DX

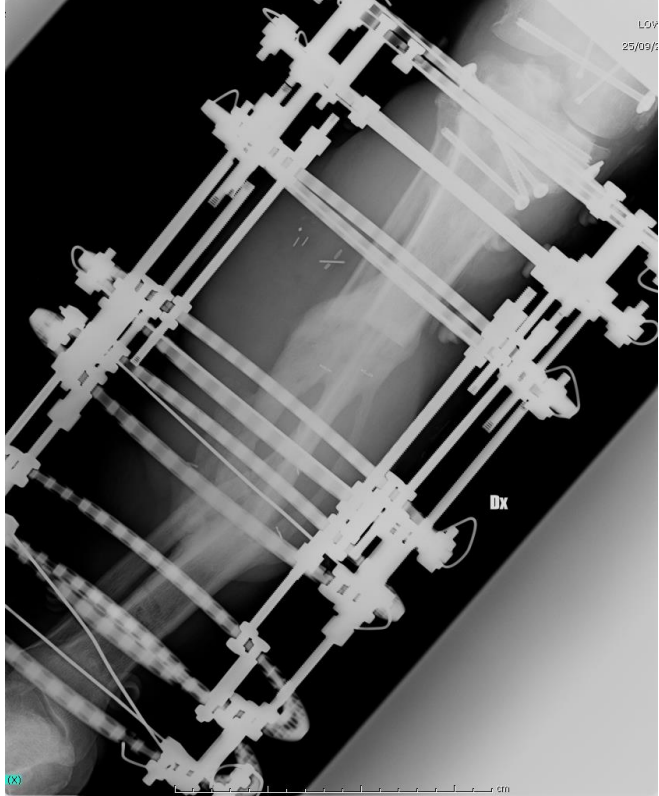
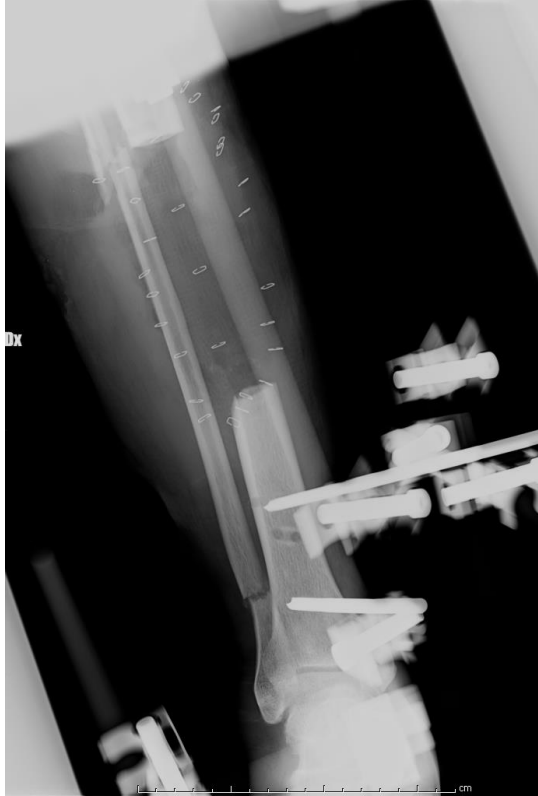
In programma intervento chirurgico di transfer flessori pro estensori valuta la effettiva necessità dell'intervento, dato che si è abituato a utilizzare nonostante tutto molto bene le mani e i polsi







# COMPLICAZIONI









***GRAZIE***



Gruppo di Chirurgia della  
Mano e dell'Arto Superiore  
del C.T.O. di Torino

