

Bone Transport with TSF

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 HSS

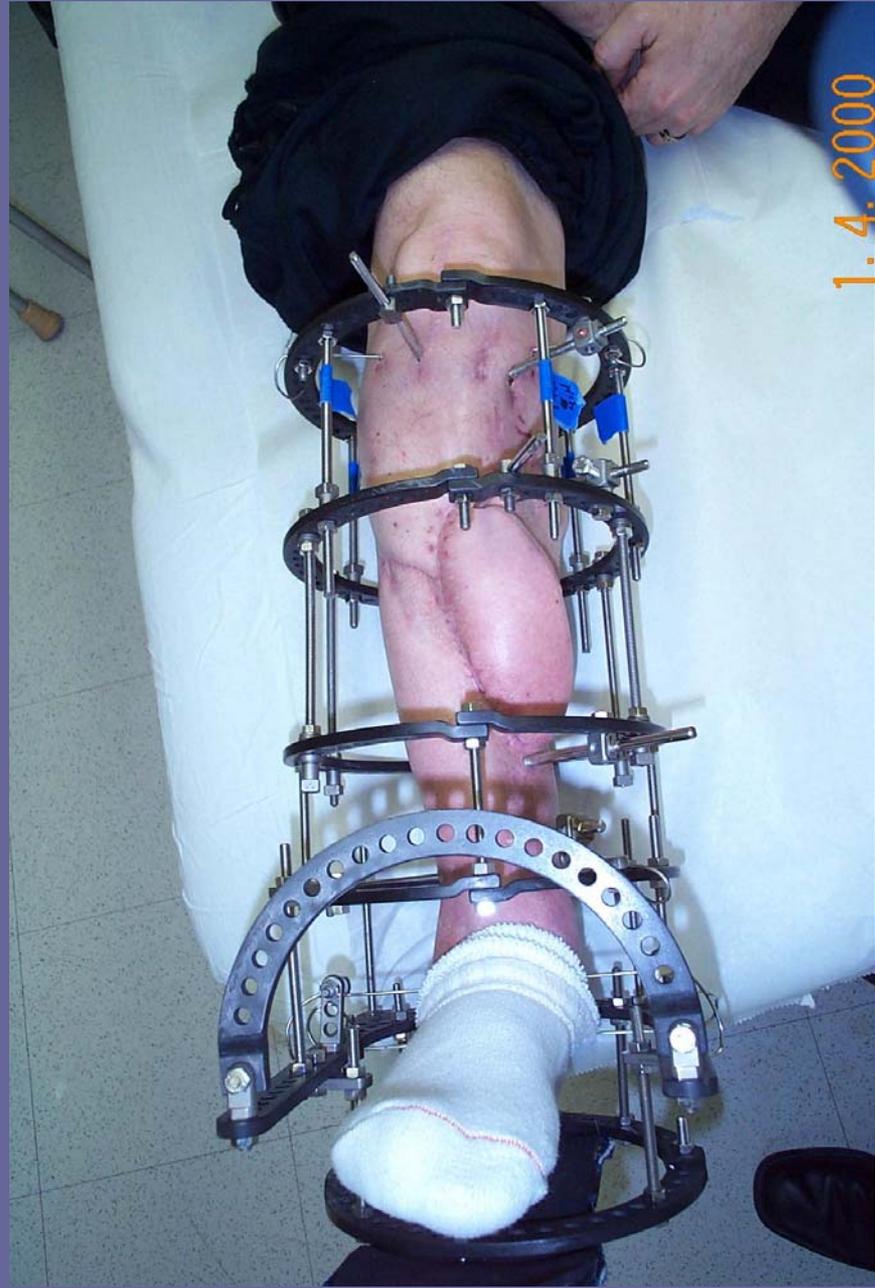


Limb Lengthening

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SURGERY



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Problems with classic Ilizarov frame

- Complicated frame application
 - Need to achieve alignment at surgery
 - Arched olive wire technique
- Poor control of transport fragment
- Docking difficulty
 - Mal-alignment
 - Poor bony contact
 - Require frame modification
- Deformity of lengthening regenerate



Infected rod, draining sinuses



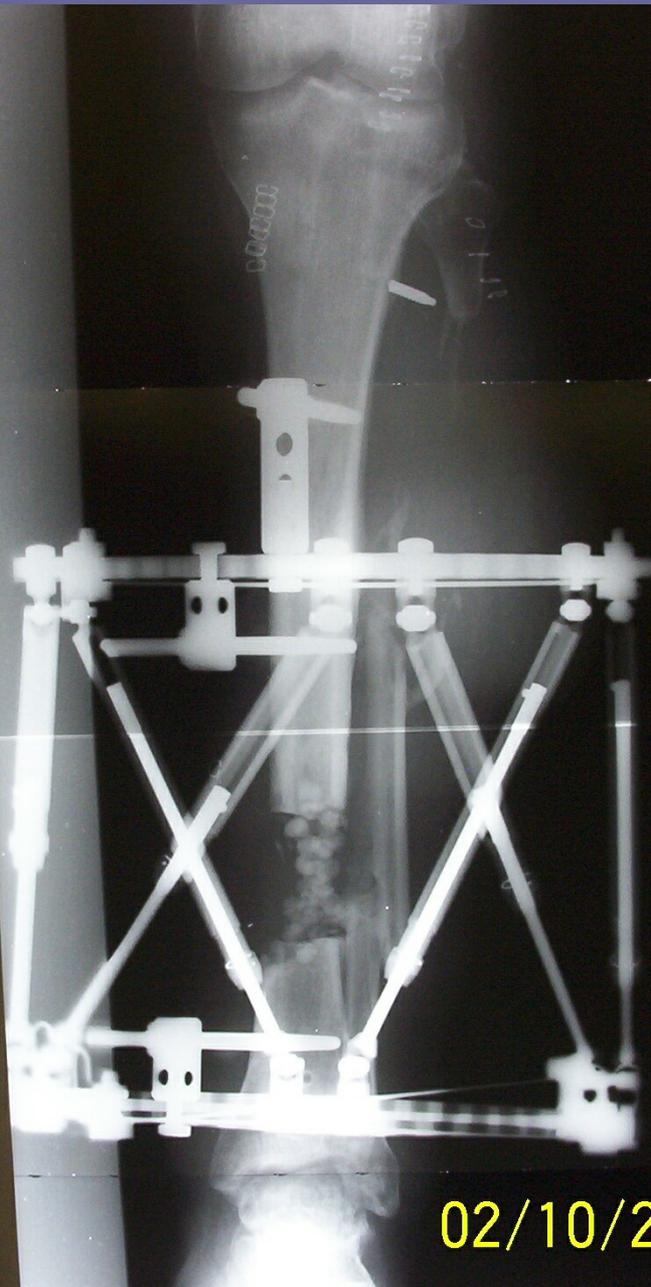
equinus



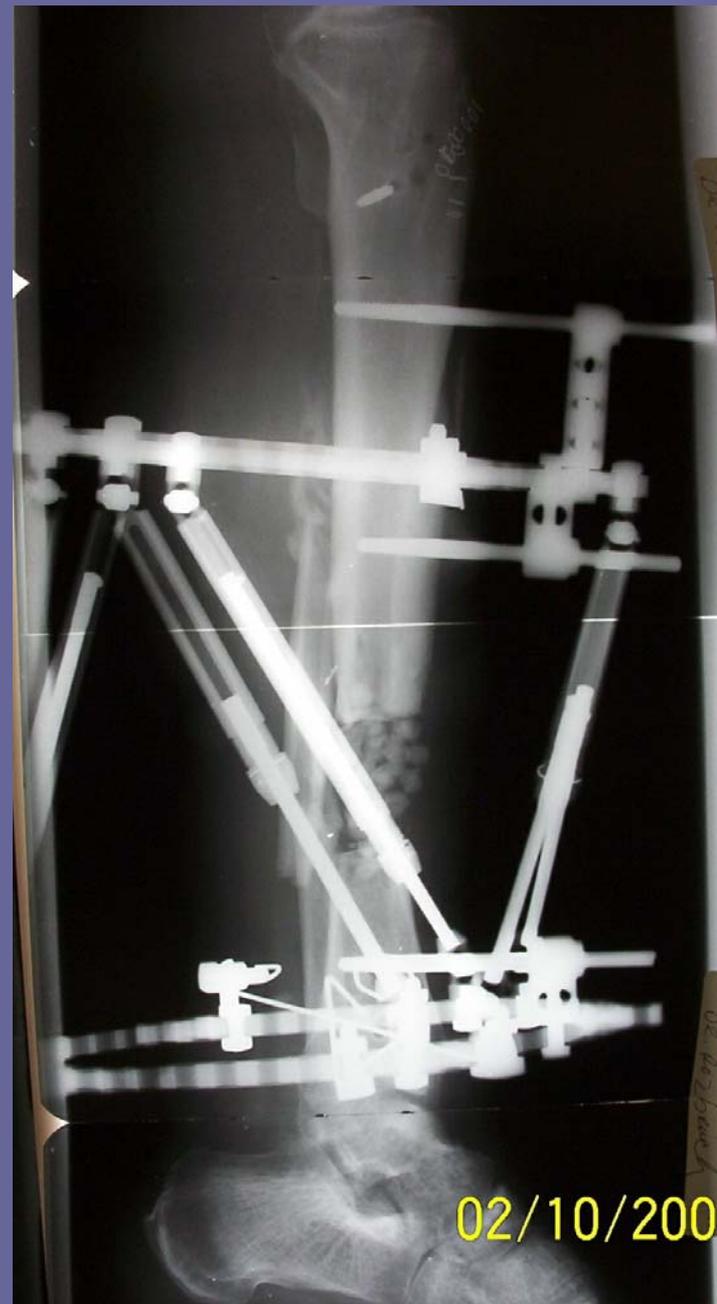


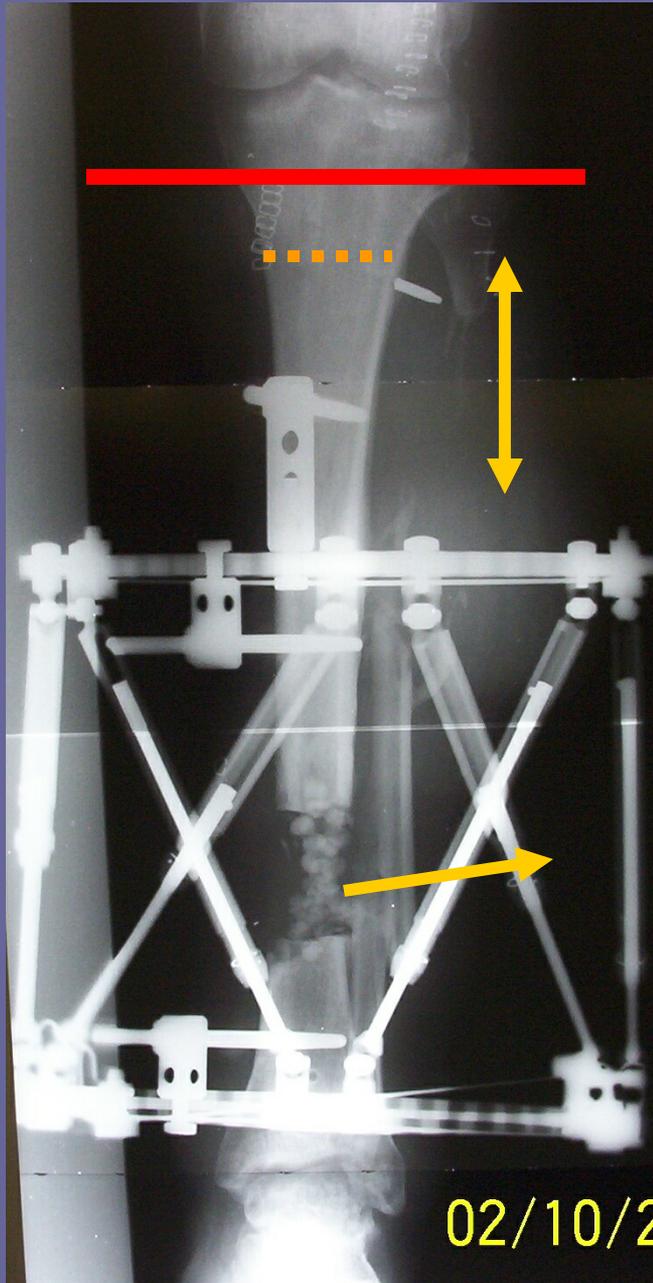
Infected nonunion
3 cm LLD
5 cm defect
Retained hardware
flaps



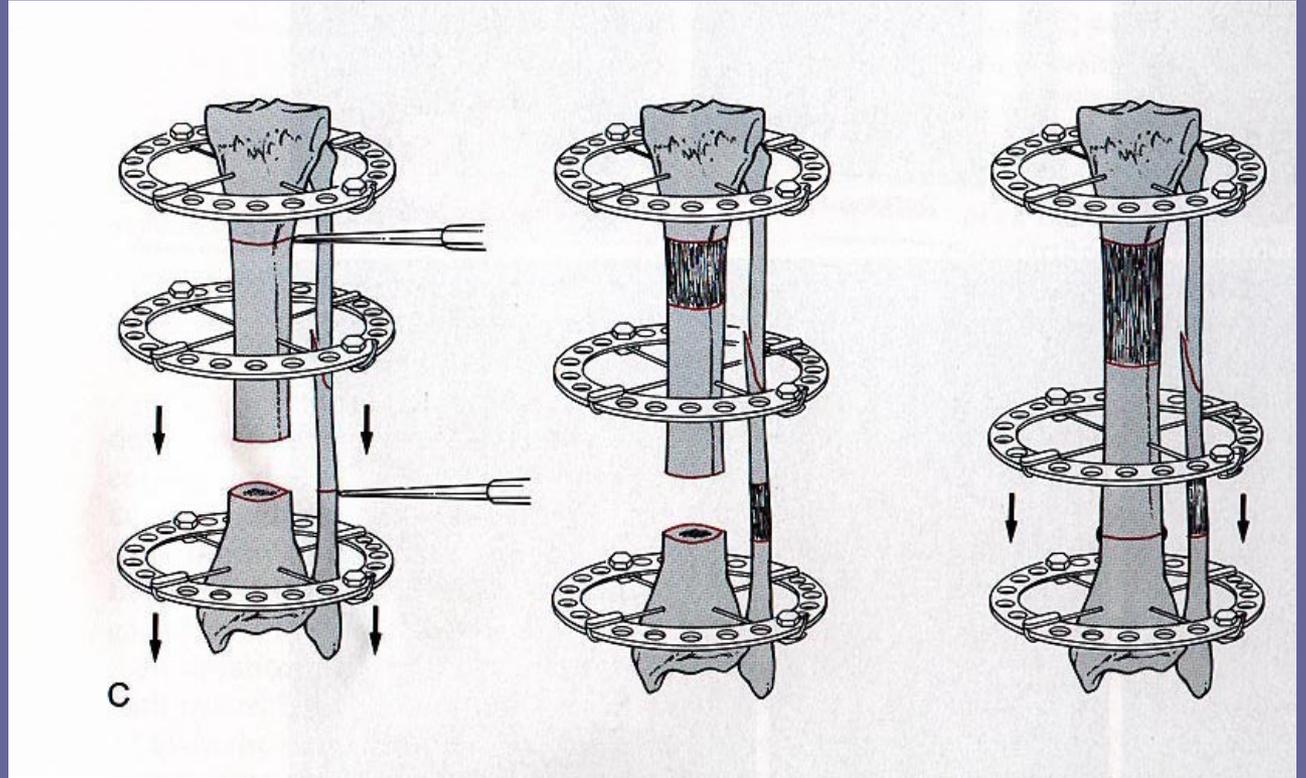
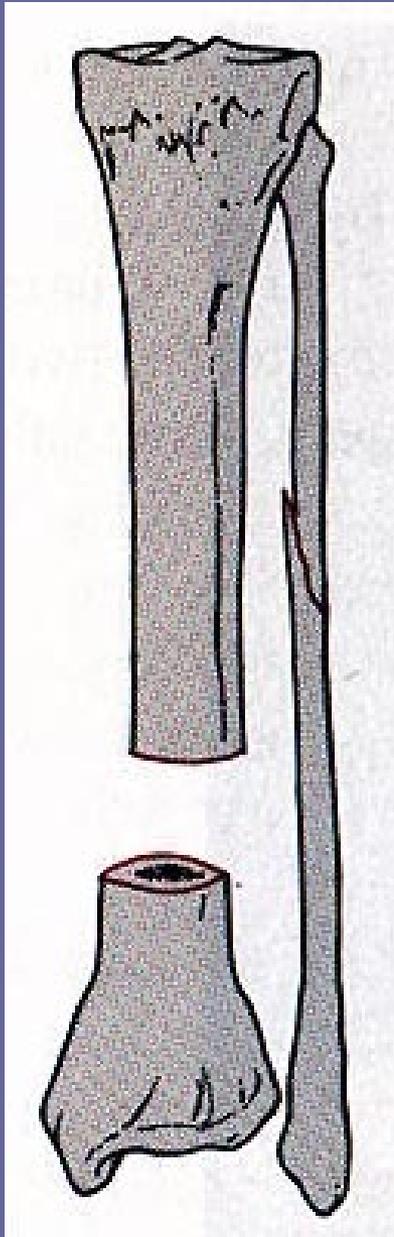


Removal hardware
Resect dead bone
Square edges
Insert antibiotic beads
Rings first method





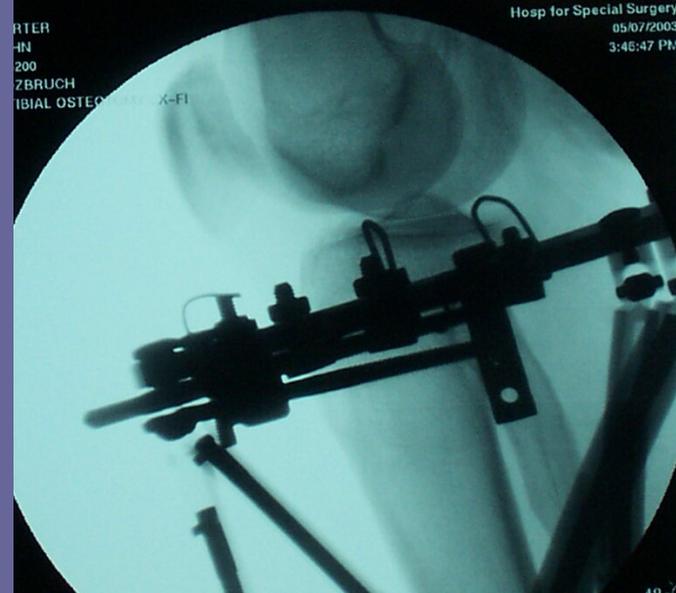
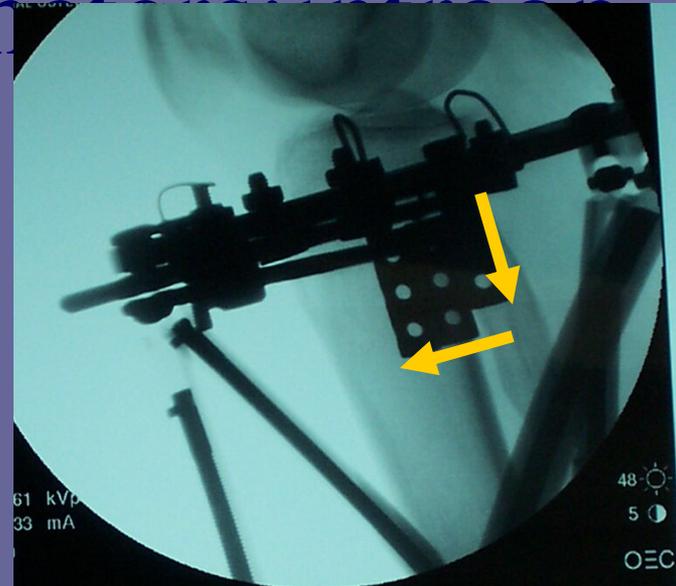
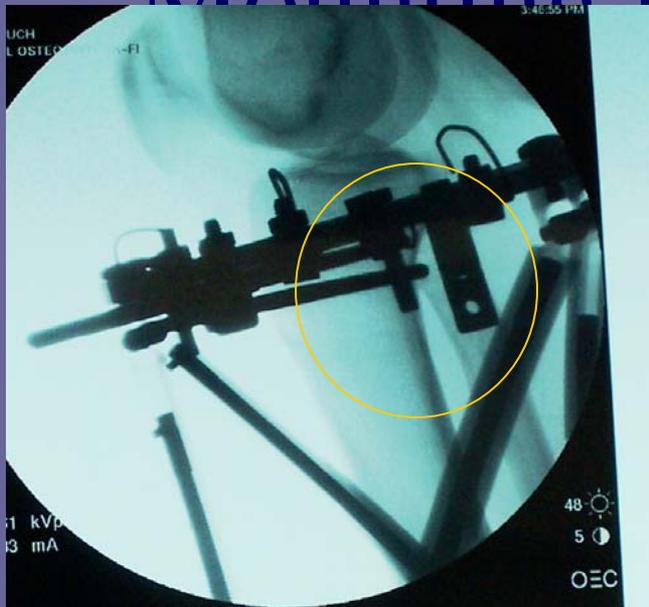
6 weeks later
Apply proximal ring
Establish mounting parameters
Perform proximal tibia osteotomy
Remove beads
Begin transport

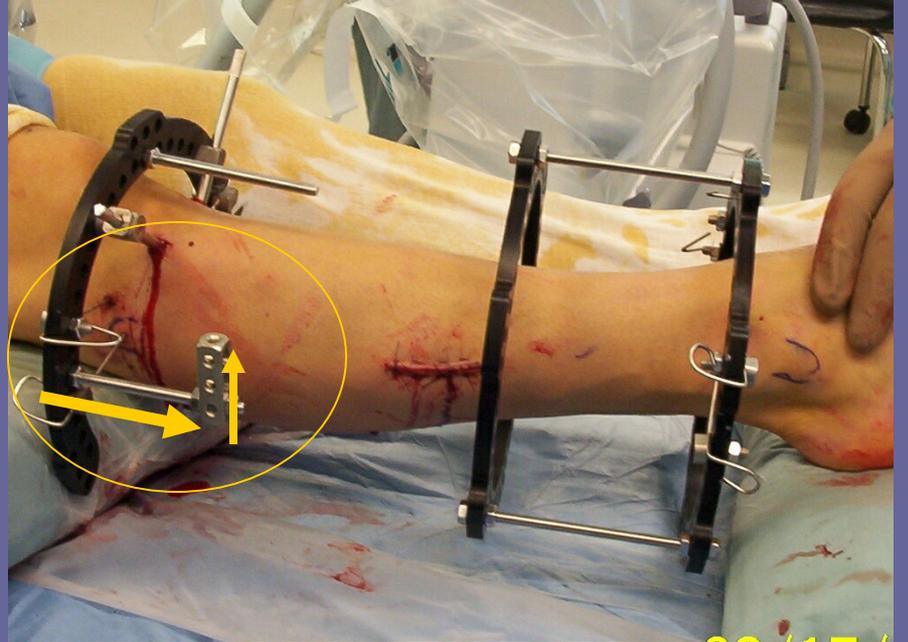
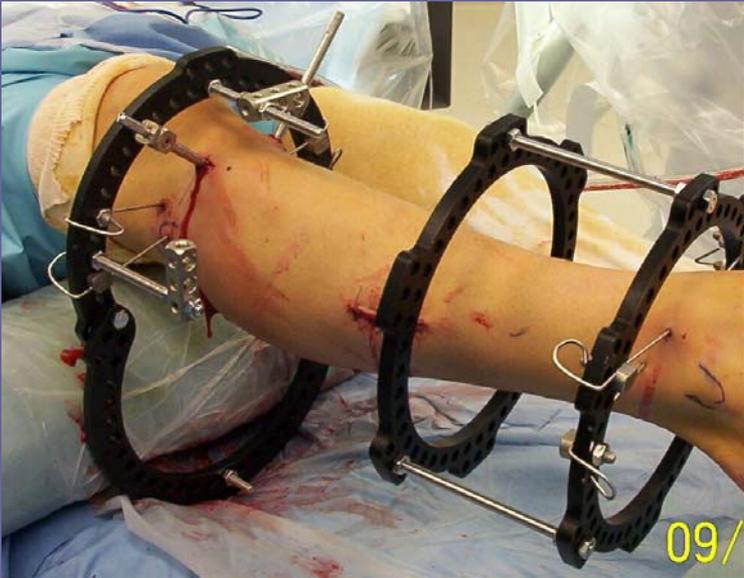
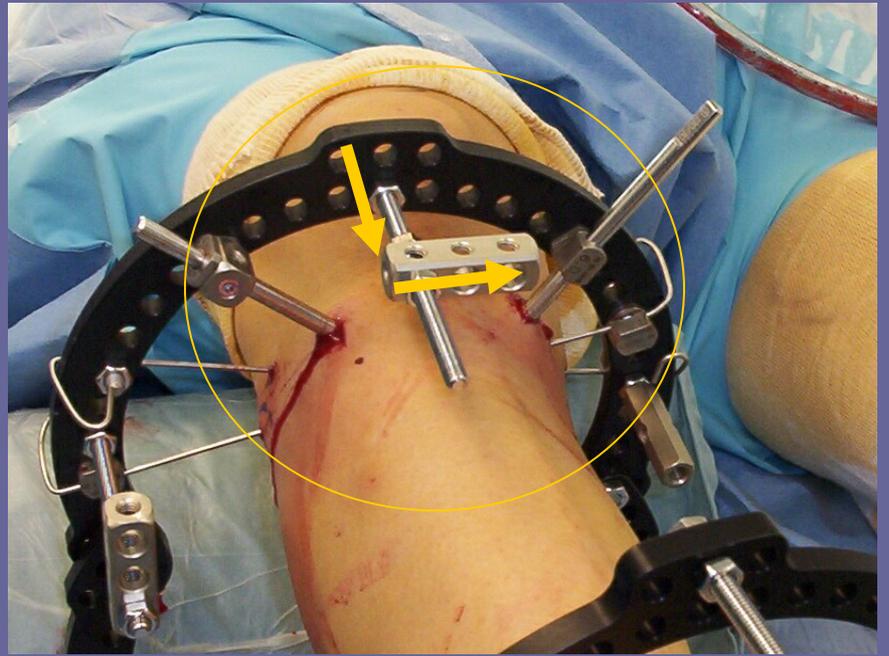


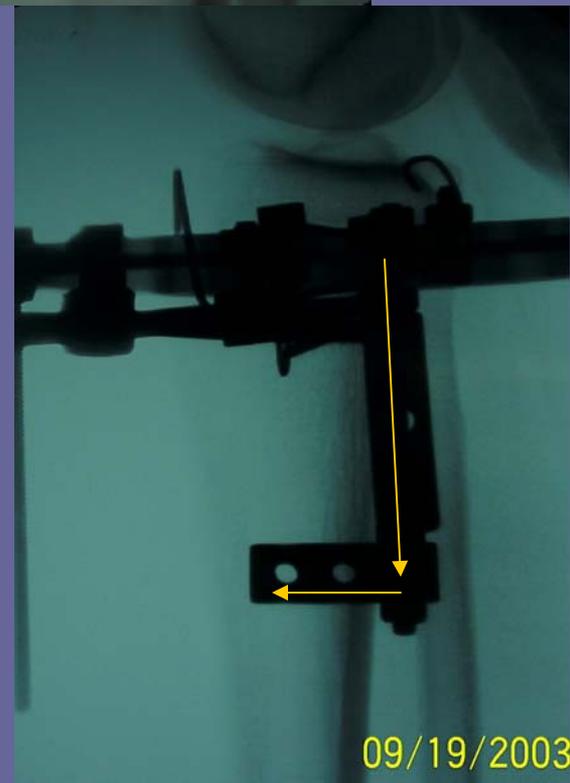
Establish Mounting parameters

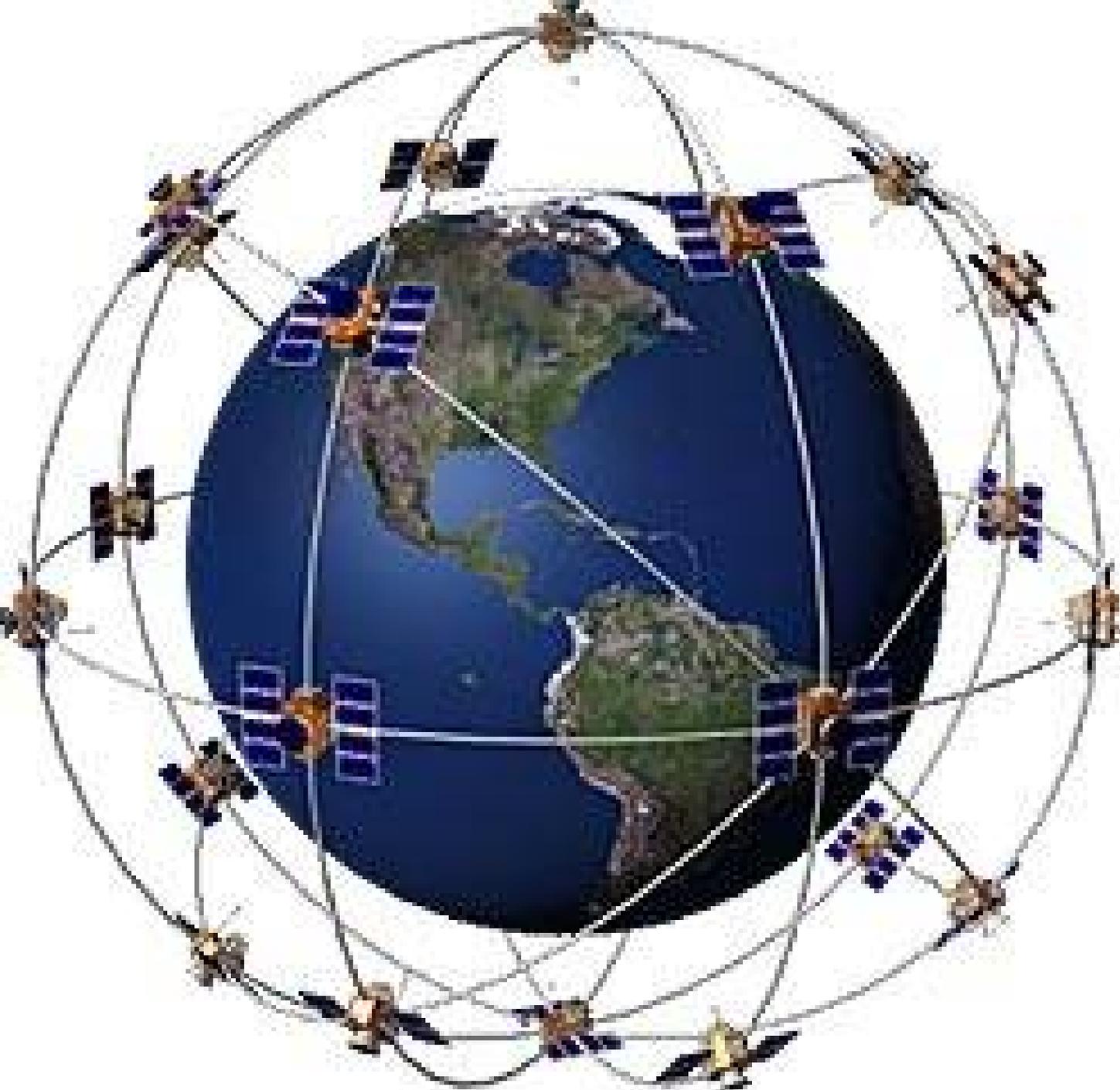


Mounting parameters instrument



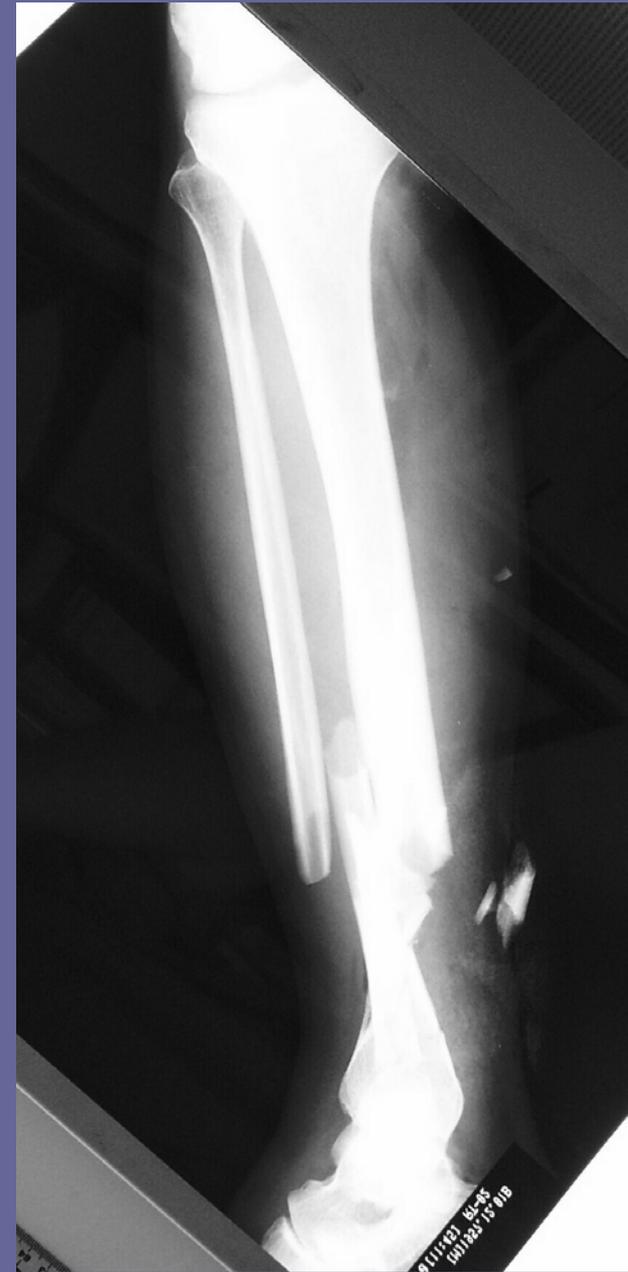






Virtual hinge
“global positioning”
Defined point
Relative to the
Reference ring

MCA
Open grade 3B
Bone loss



FRISZELL
NICHOLAS
6-23-26
ROZBRUCH
LIZAROV LEFT TIBIA

Hosp for S

FRISZELL
NICHOLAS
6-23-26

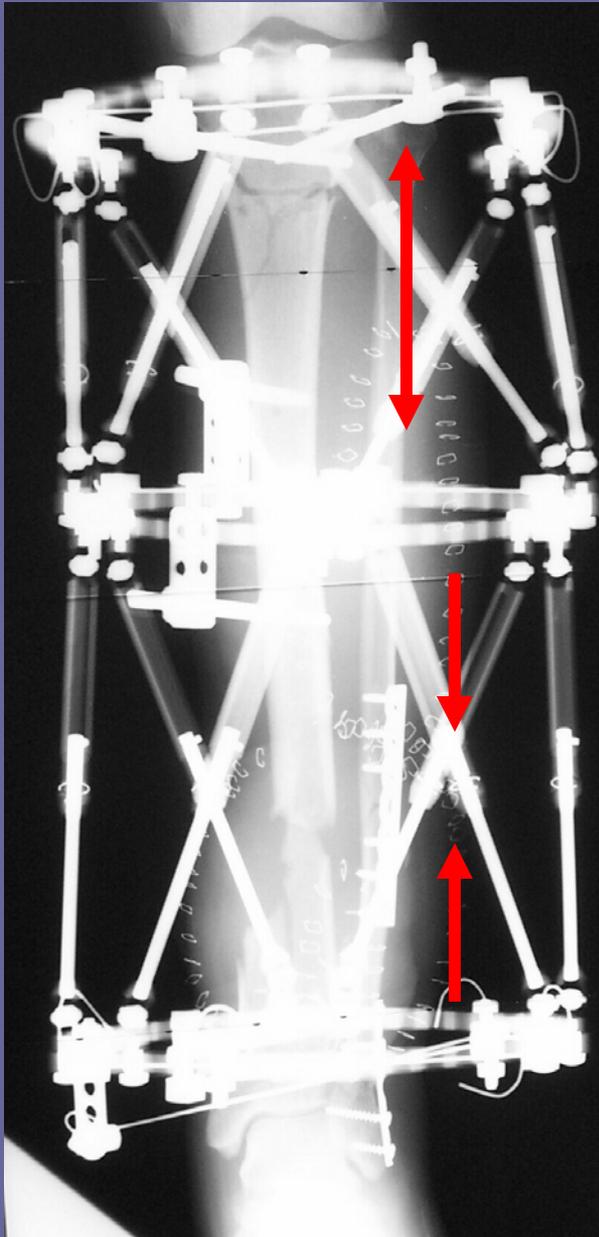
S ROBERT

Hosp for Special S
07/1
6:59

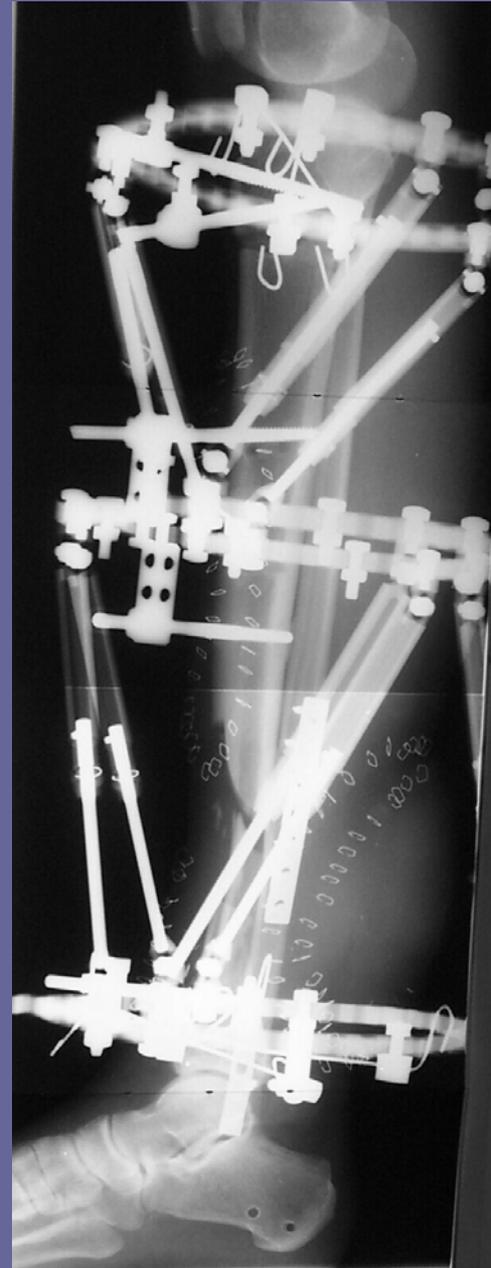
8 cm
defect

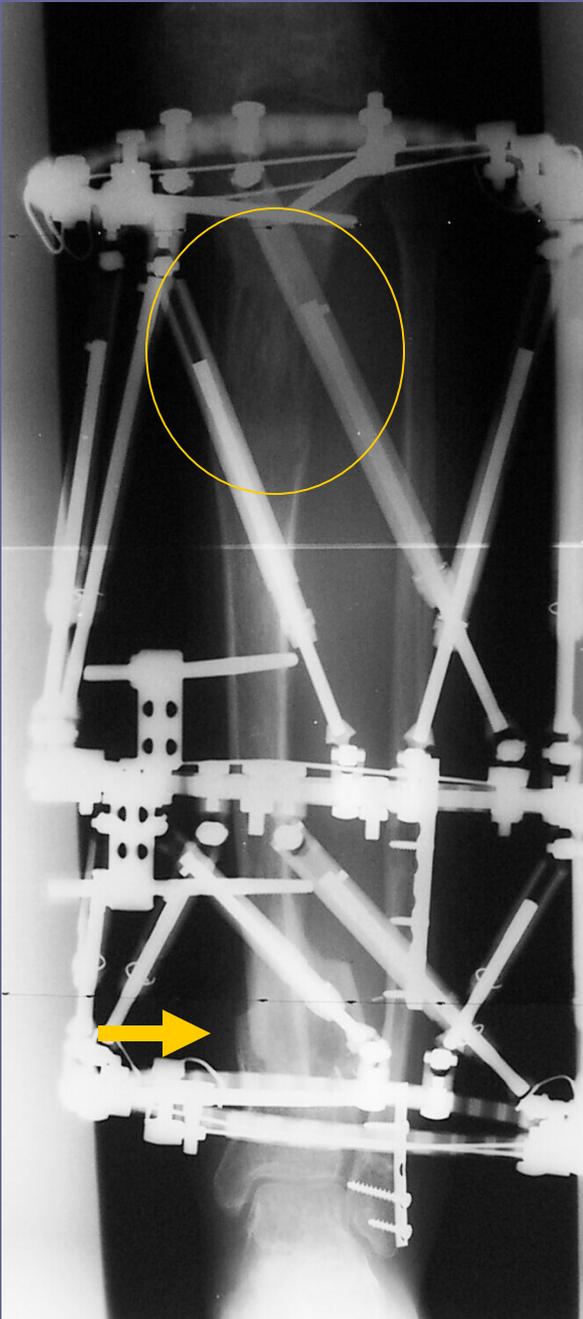
57 kVp
1.18 mA
86

52
10
C

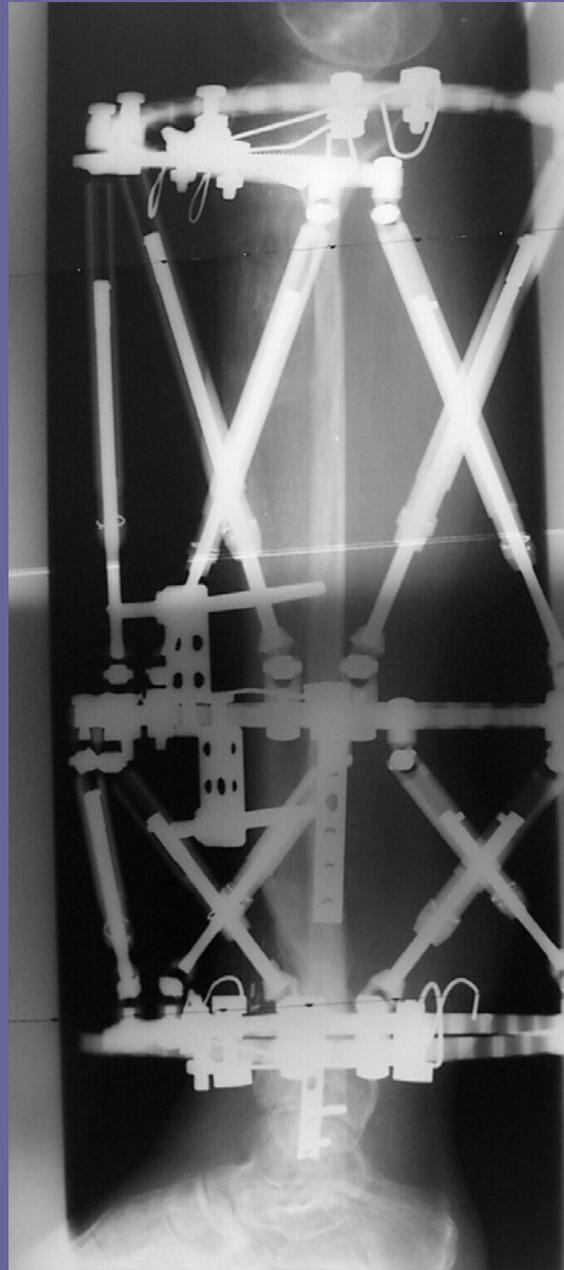


Control each
Segment
separately





BG
Docking
site





Fibula plating
Was already
Done
-prefer not
To have them



Tibia-talar Arthrodesis and Simultaneous tibia lengthening

Bone transport
for segmental tibia defect with
osteomyelitis

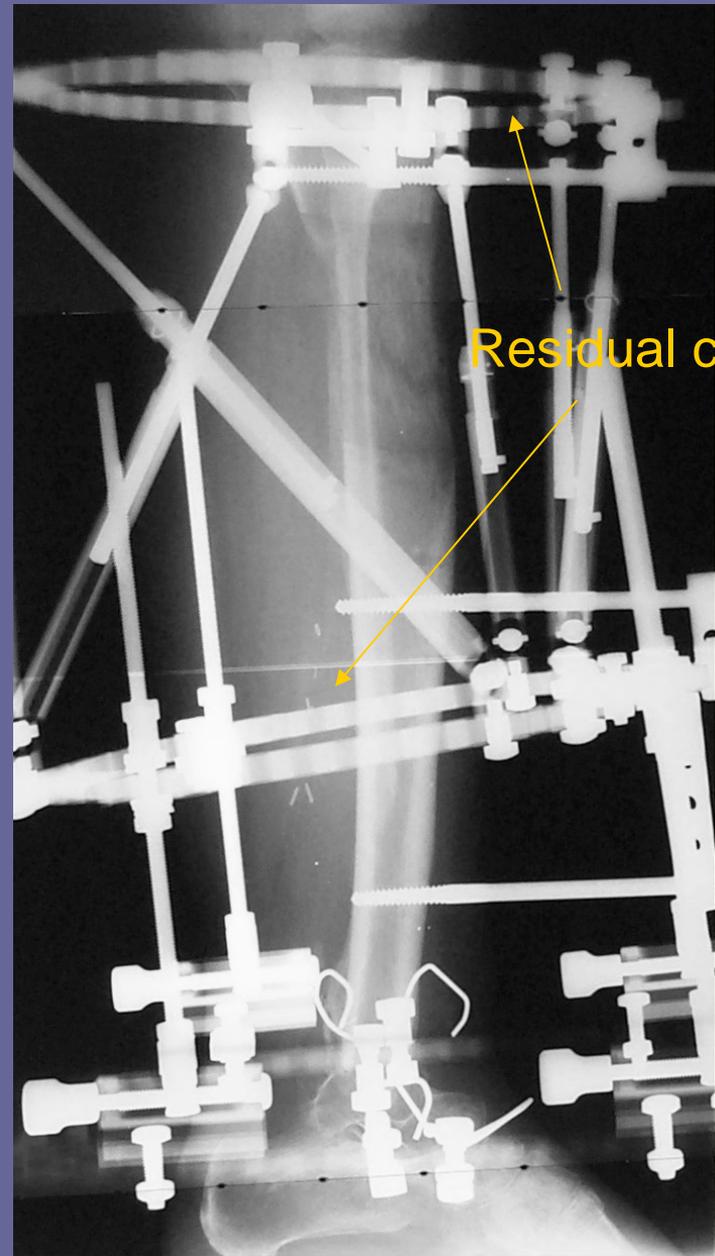
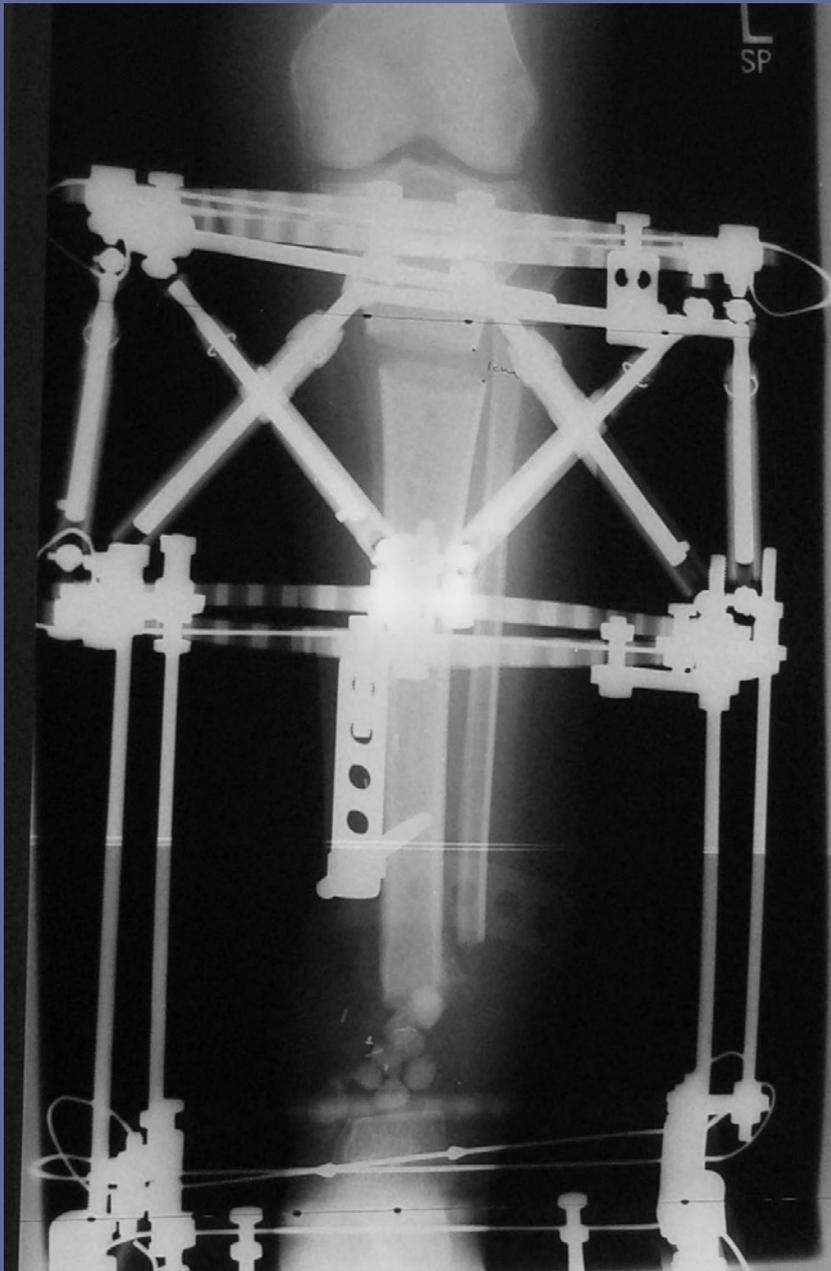


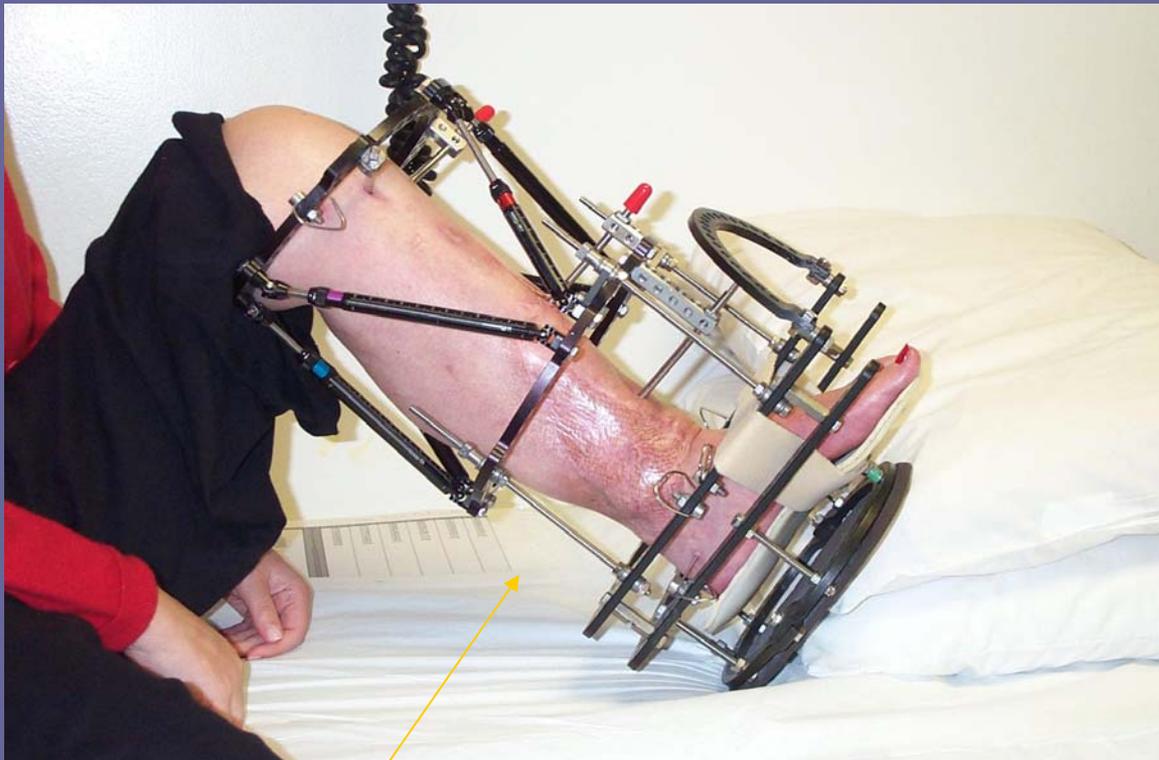
Boat explosion

Needs 7.5 cm lengthening and tibio-talar fusion

Infected

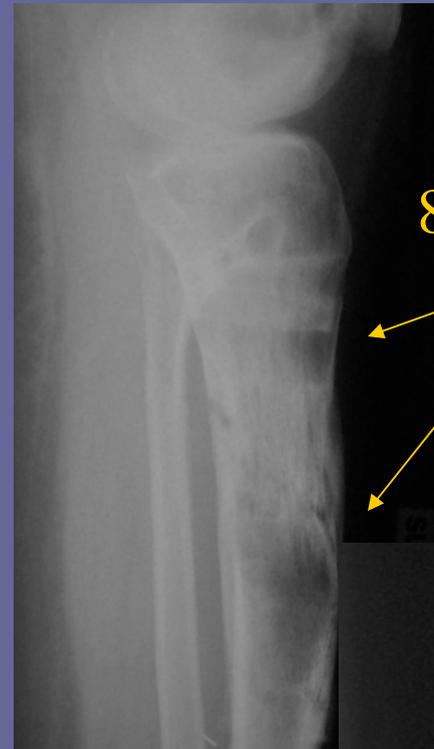




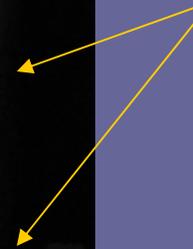


Iizarov rods

15 months



8 cm lengthening



Tibia
Diaphysis
To talus
fusion



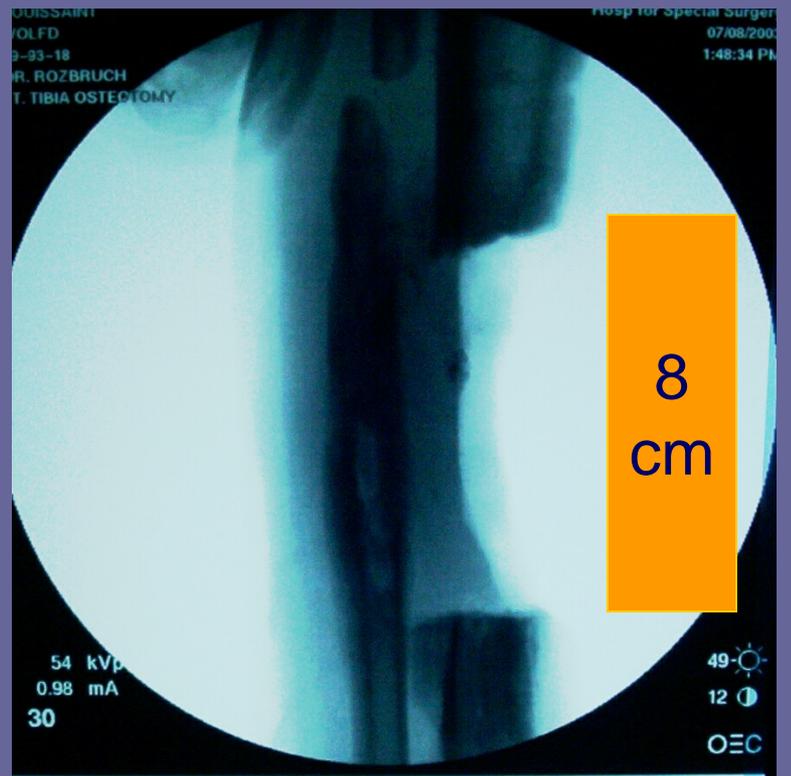


Bumper injury
Paramedic loading
Patient

Grade 3C
Vascular surgery
Flap coverage

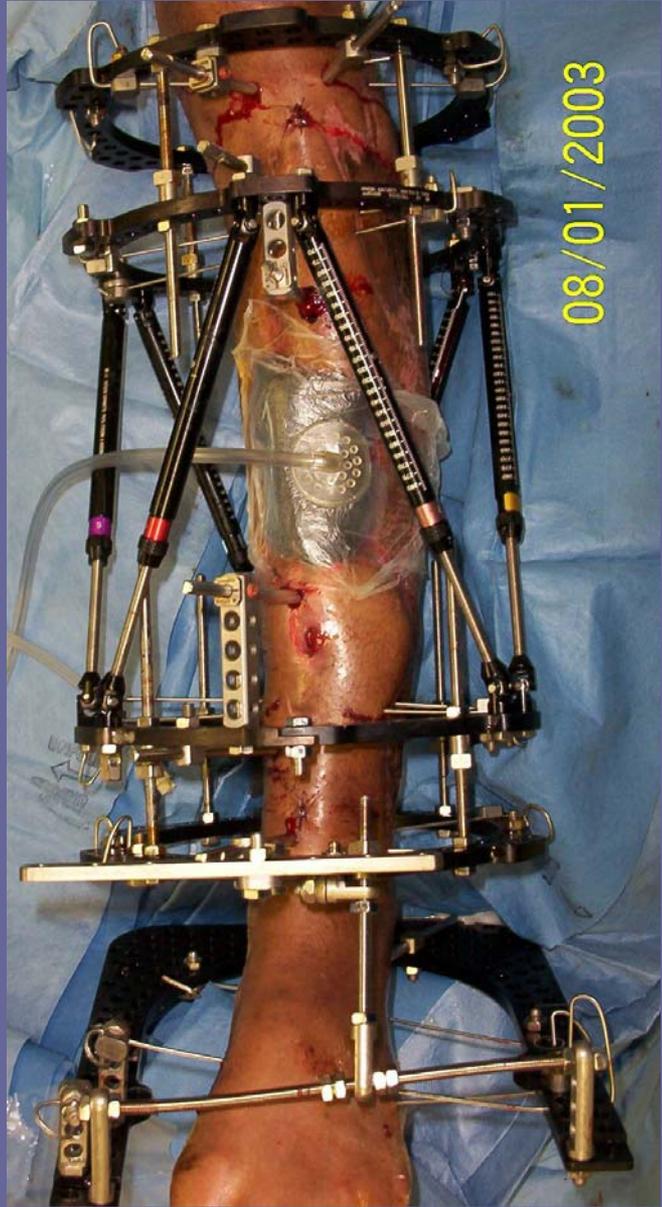
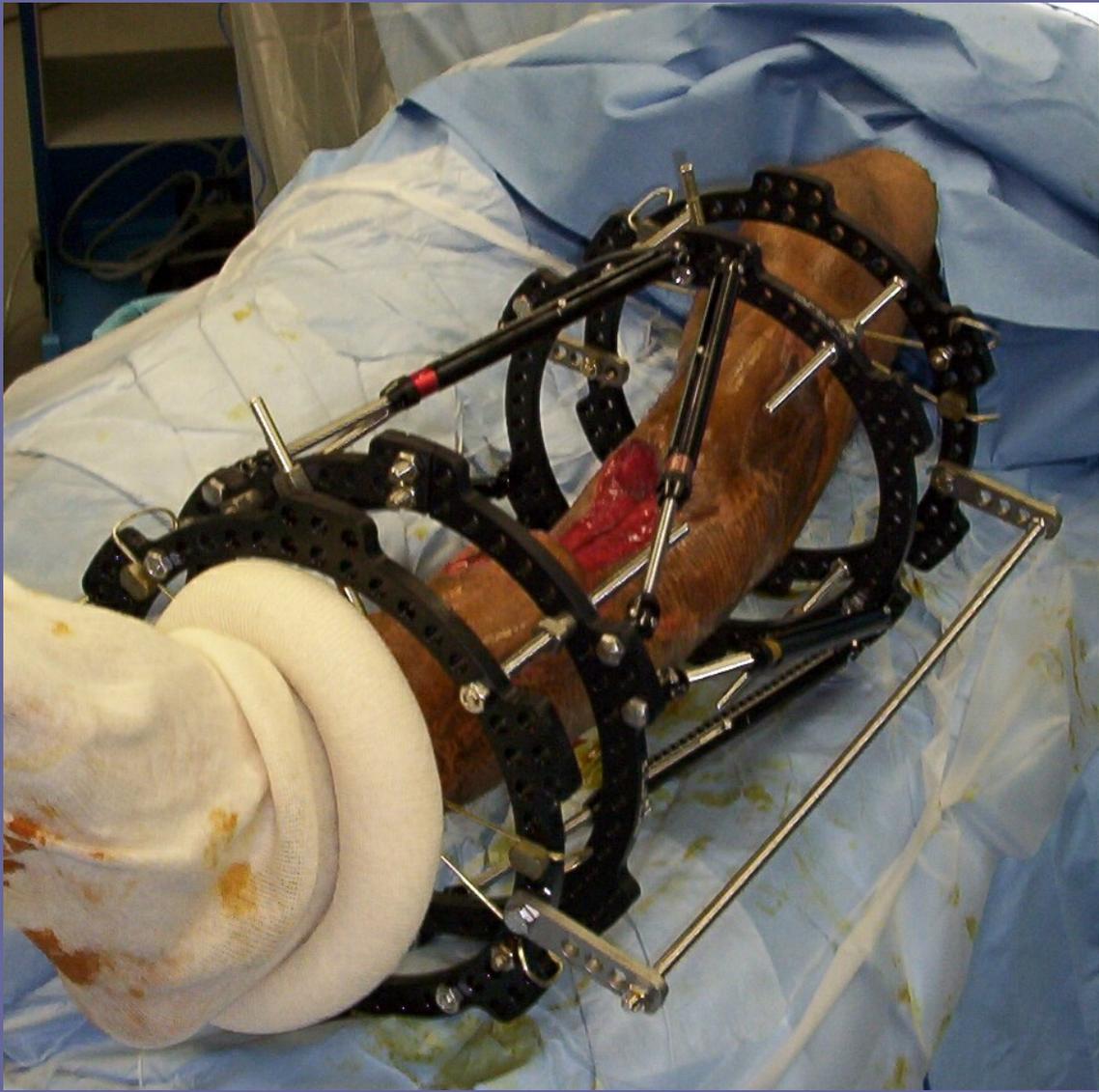
1 year later with
Draining sequestrum





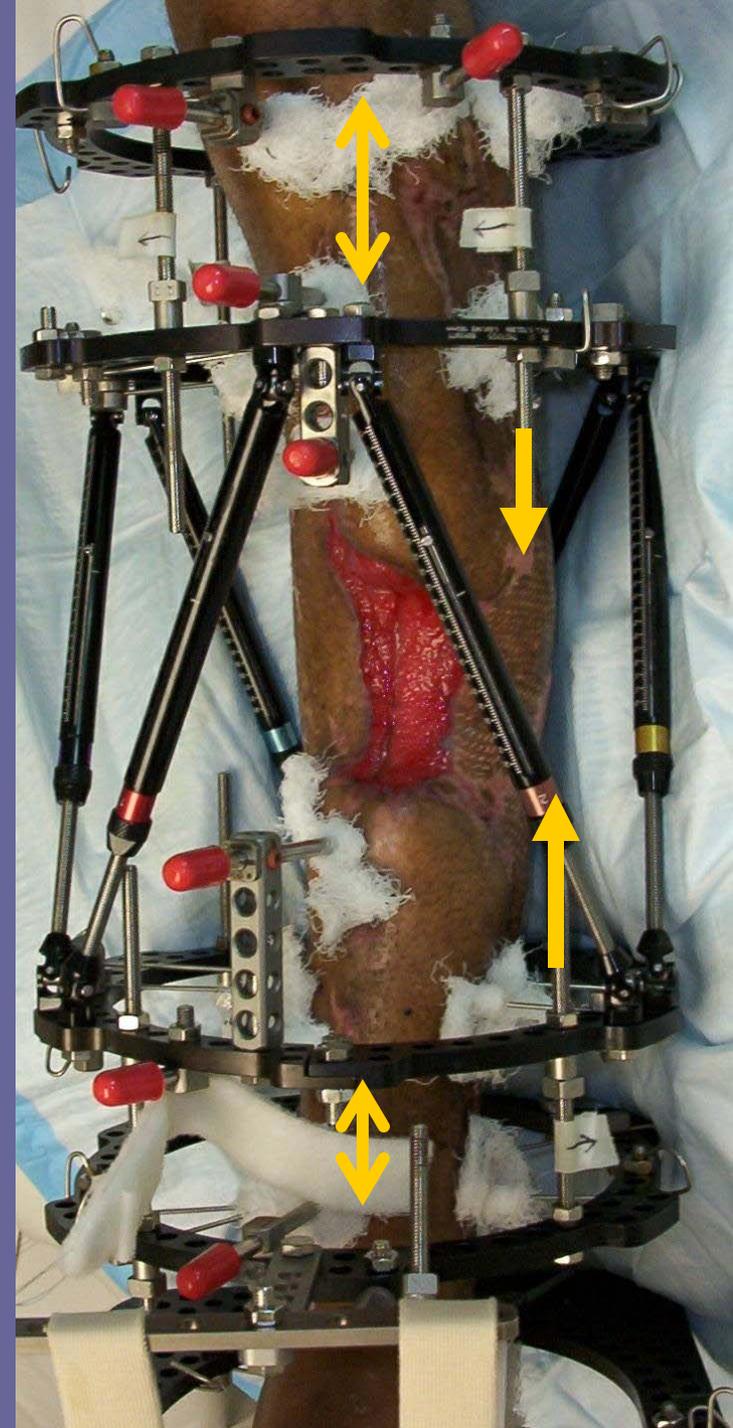


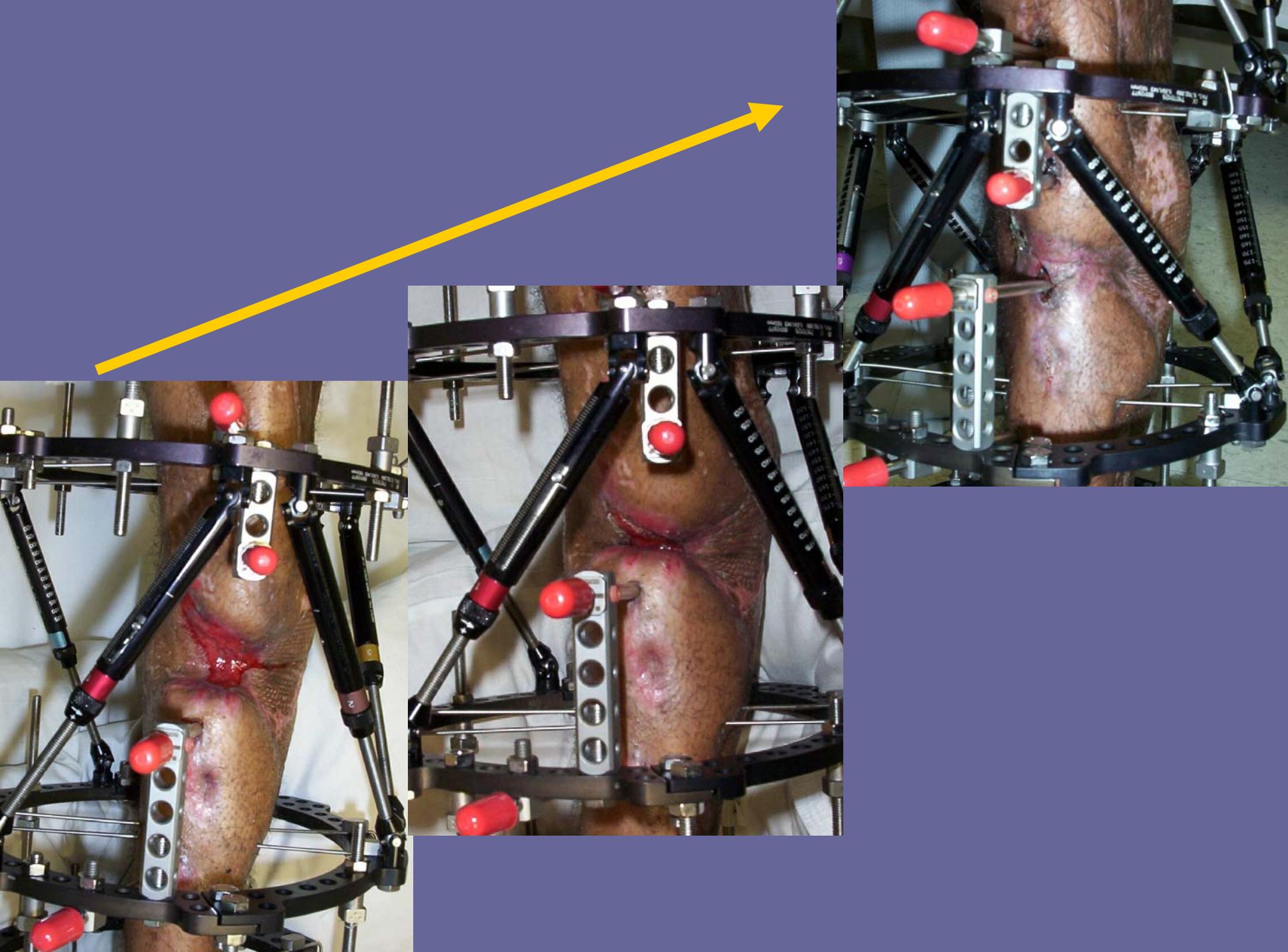
Not candidate
for another flap

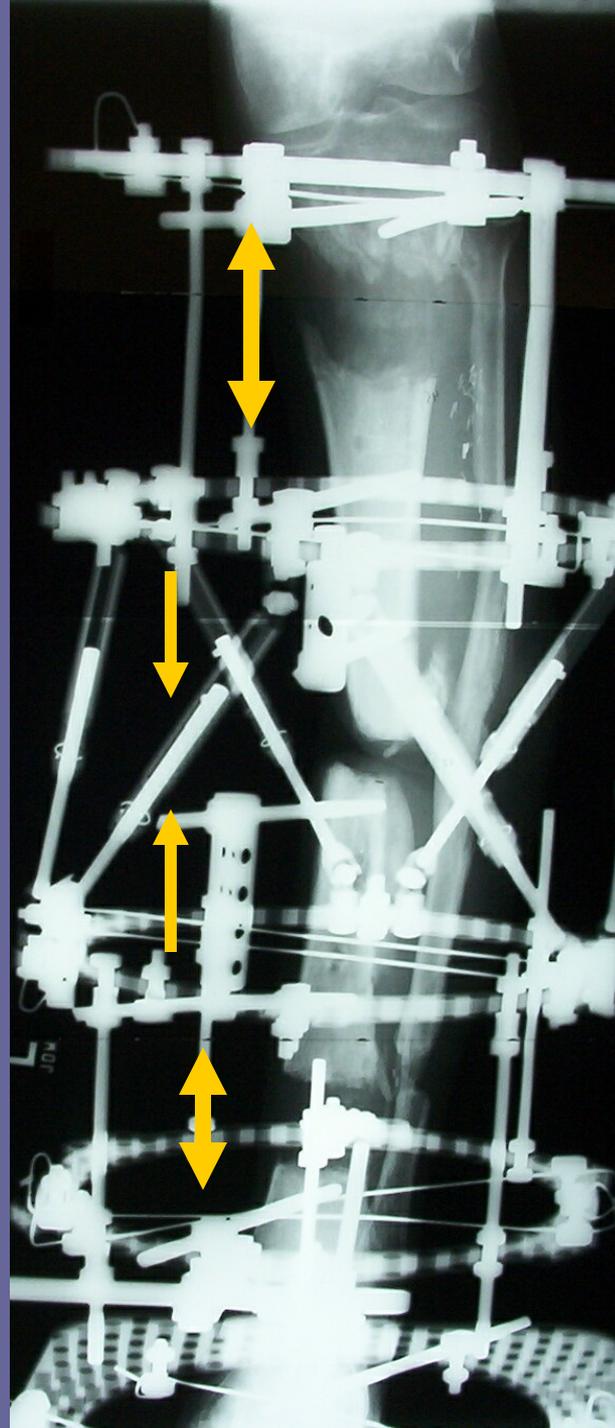


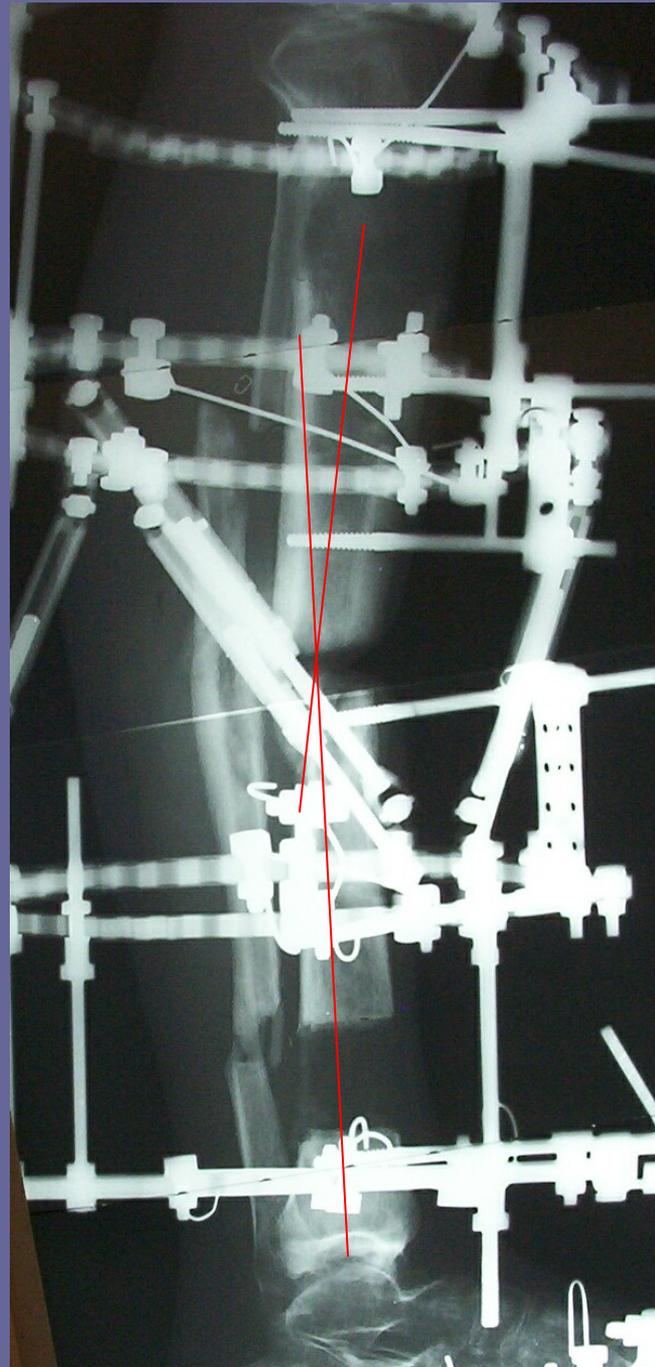


Trifocal
Transport
Of bone
And
Soft-tissue

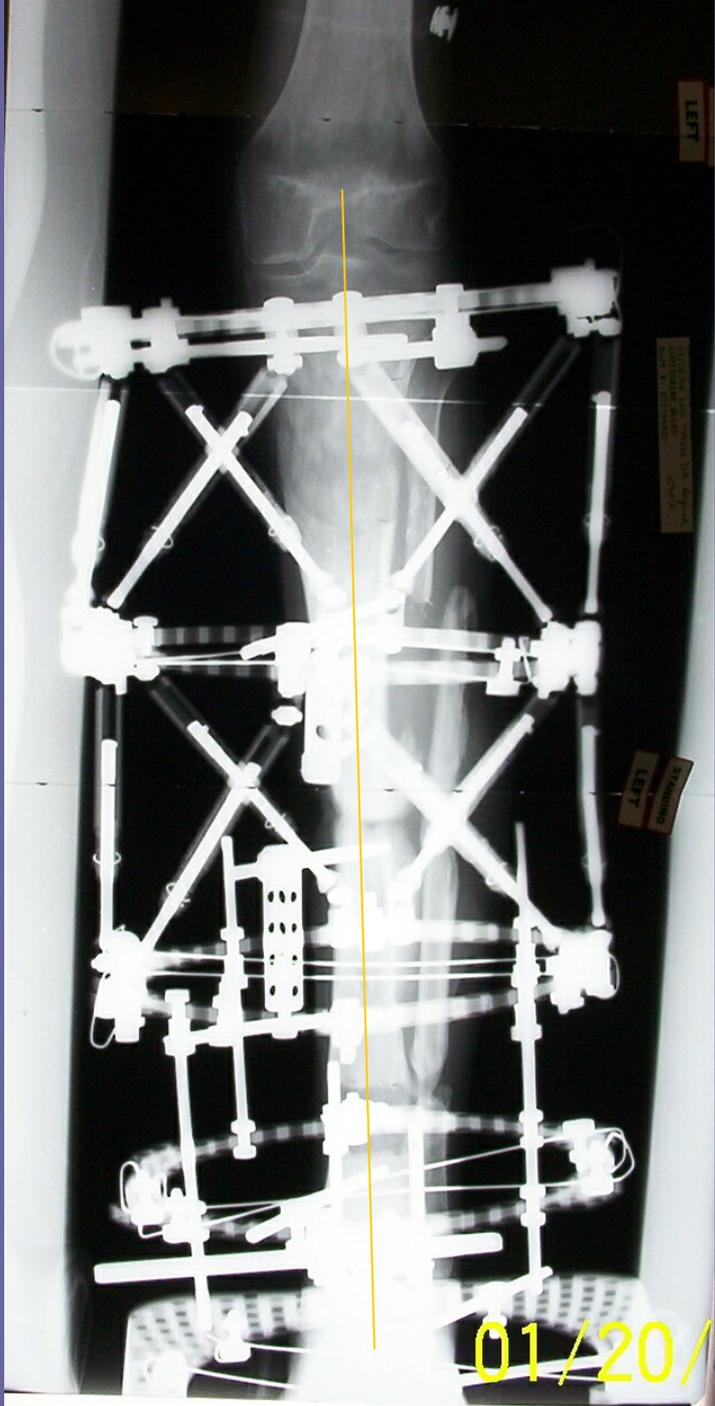




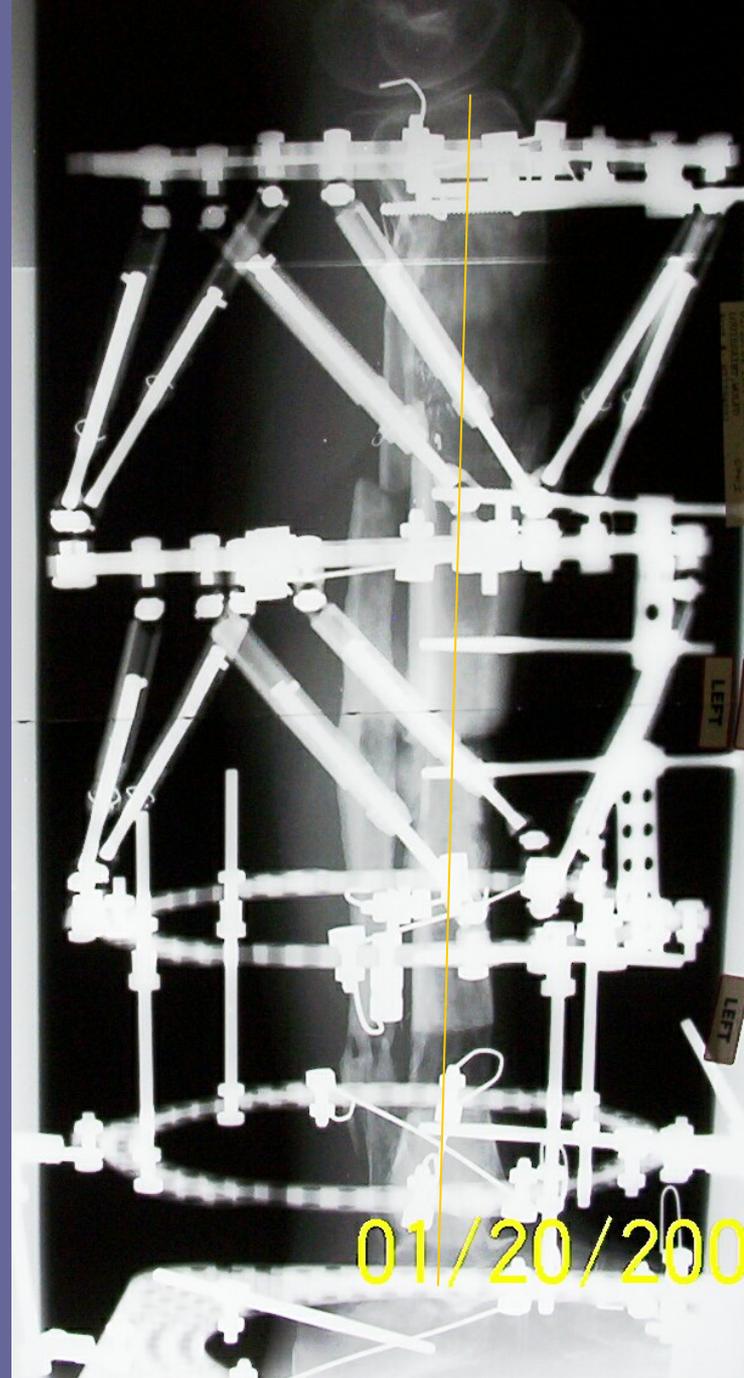




Residual correction
Of recurvatum and
LONG



Apply spatial
Struts
When there
Is room
To achieve
Excellent
alignment





01/20

He had
An equinus
contracture



01/20

Simultaneous Treatment of Bone and Soft-tissue Defects With the Ilizarov Method

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J. Tracey Watson, MD

Howard V. Katz, MD

Paul Freudigman, MD

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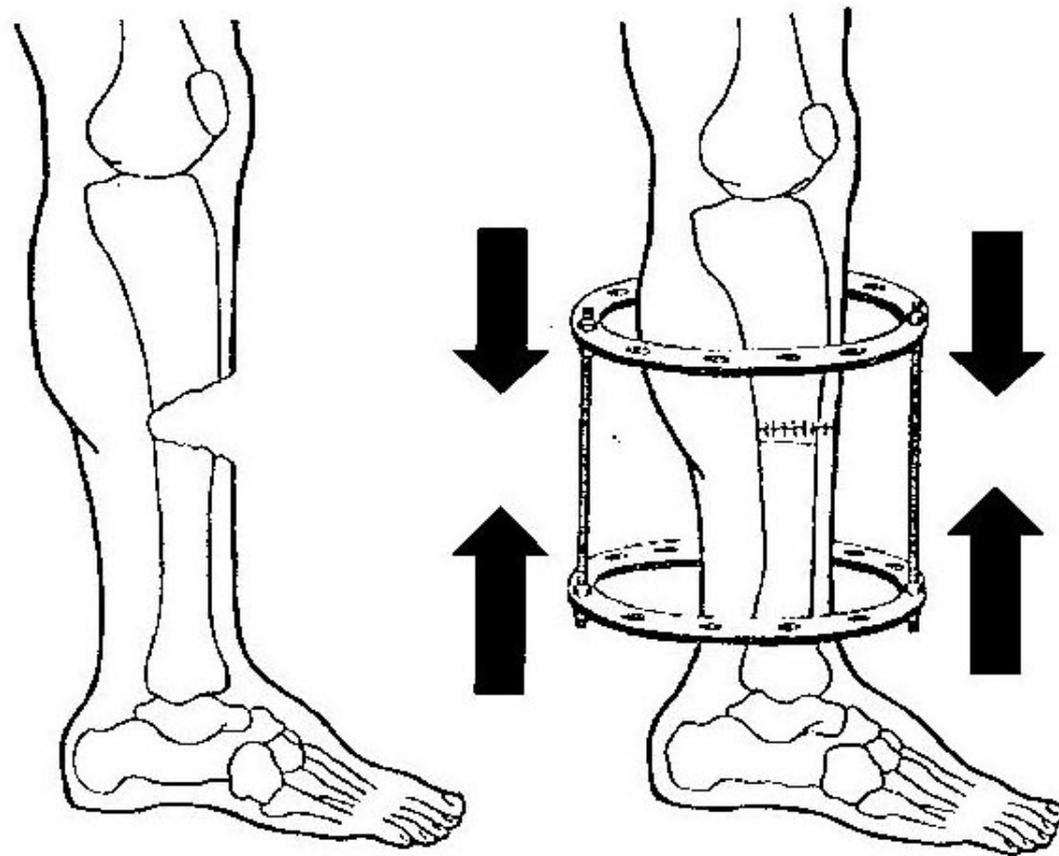
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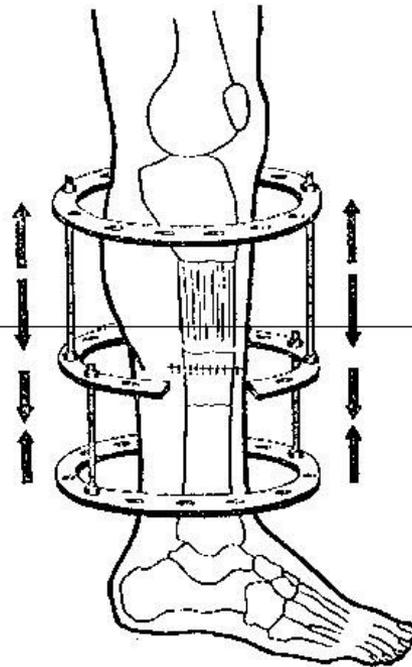
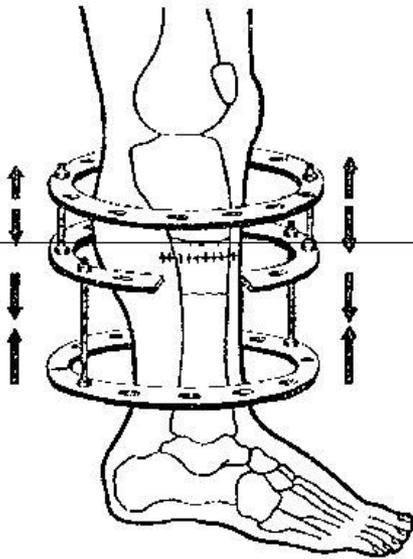
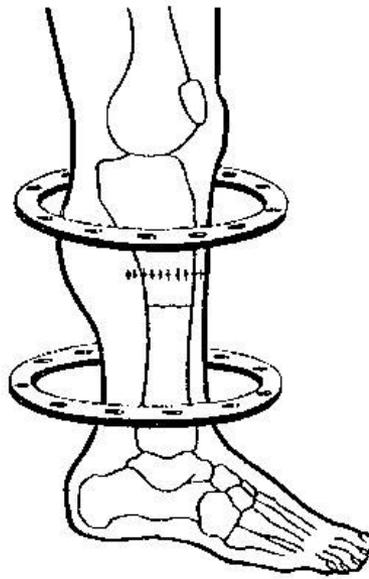
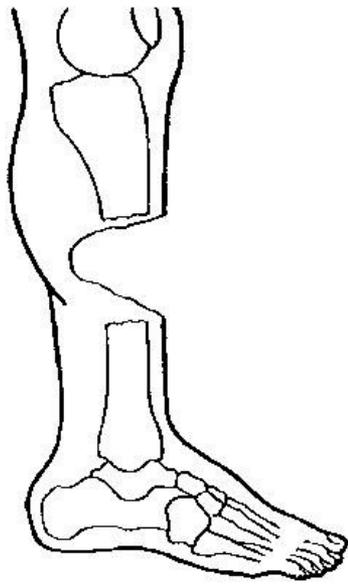
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Can the Ilizarov method be used
to treat bone and soft-tissue
defects simultaneously without
the use of flap coverage?

Monofocal method





Bifocal
method

Method

- 25 patients from multiple University Centers
- Not candidates for flap coverage
- Limb salvage undertaking in all cases
- Retrospective review

Defect size after debridement

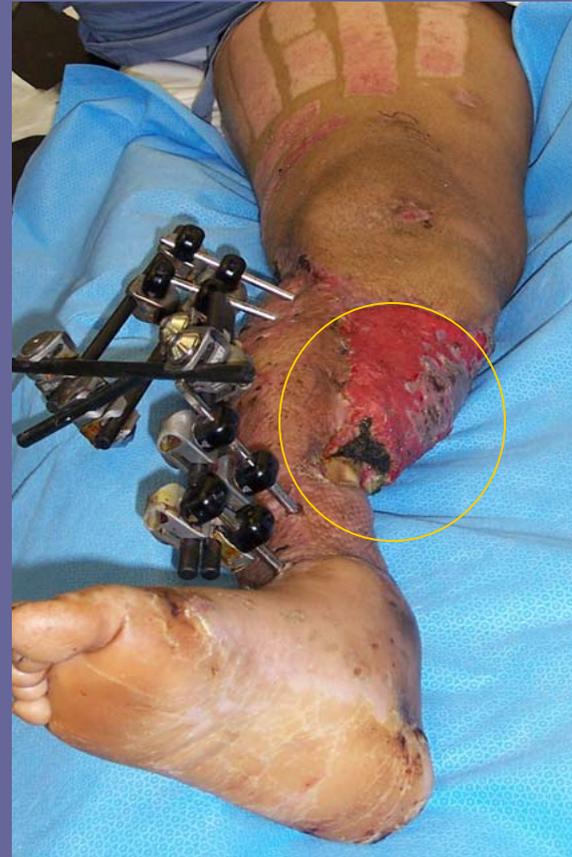
- Bone defect: 9.7 cm
- (range 2-25)
- Soft-tissue defect: 5.8 cm
- (range 2-14)

Infections

- Bone infections in 10 patients
- Soft-tissue infections in 16 patients

Flap Coverage

- 2 patients had previous flap coverage which then had partial necrosis leading to a soft-tissue defect



Time to closure

- Frame compression: 17 weeks
(range 5-39)
- Soft-tissue closure: 14.8 weeks
(range 3-41)

Bone Healing

- Bony union: 24/25 patients
- Bone grafting of docking site in 12 patients
- 3 patients needed a secondary IM nail after frame removal to achieve union.
- One patient has stiff nonunion, is satisfied, and does not want additional treatment

Time in frame

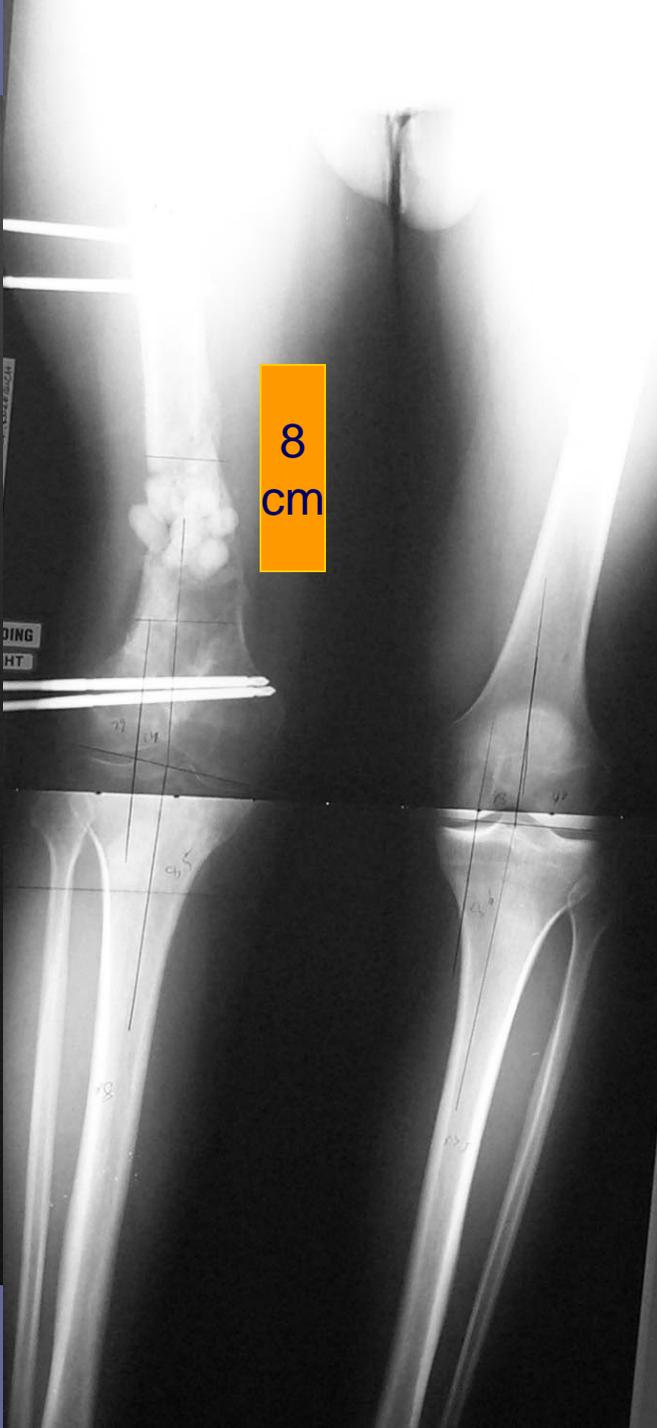
- 41.5 weeks average
(range 10-82)

Infection

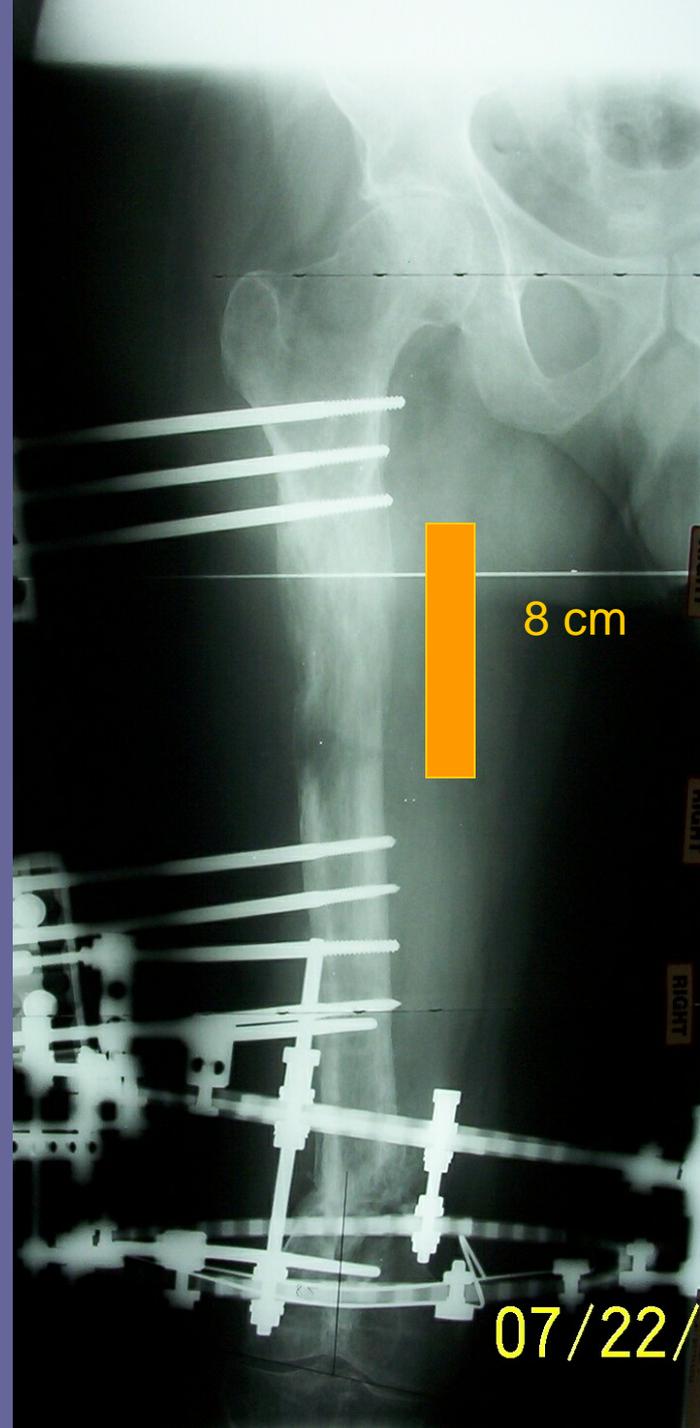
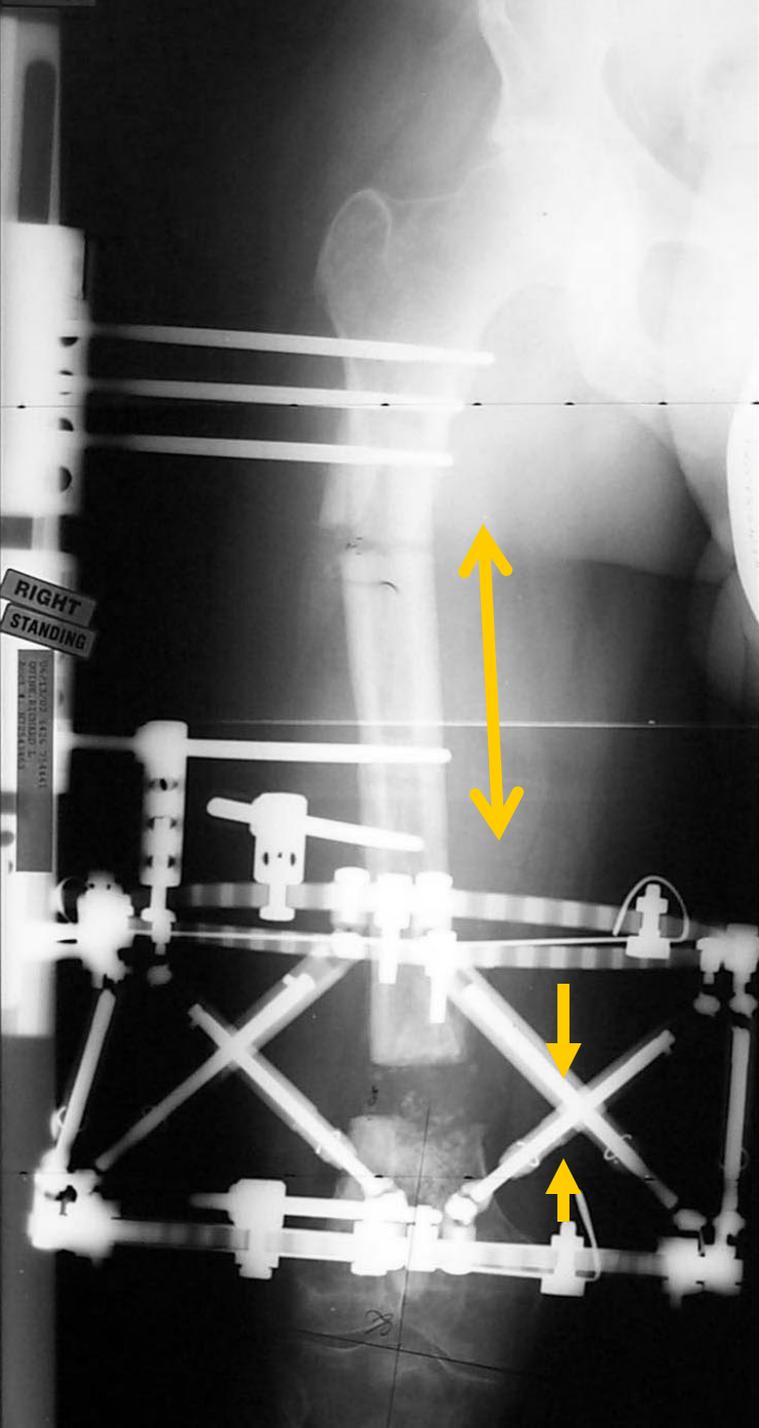
- Infections were cleared in bone and soft-tissue and there were no recurrences

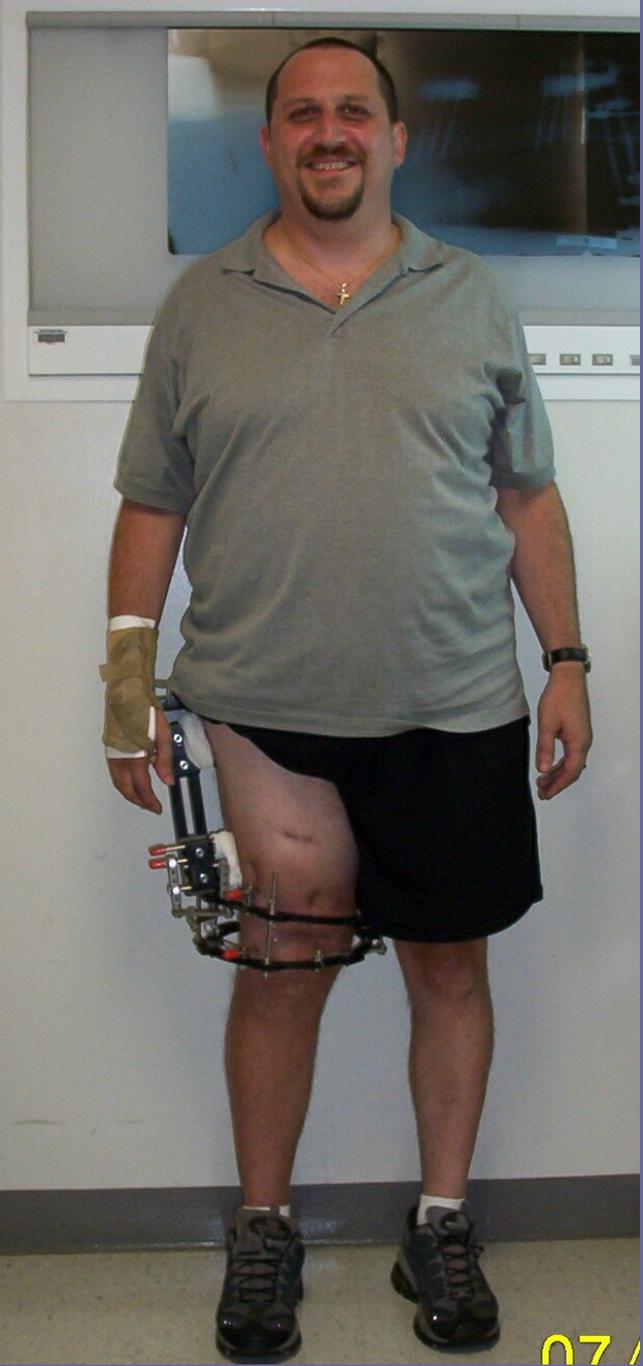
Lengthening at another site

- 11 patients
- Proximal tibia, middle tibia, fibula, femur
- 5.5 cm lengthening
- (range 2-11 cm)
- Final LLD: 1.4 cm (range 0-5)



Open femur fx
8 cm infected defect
6mos after injury



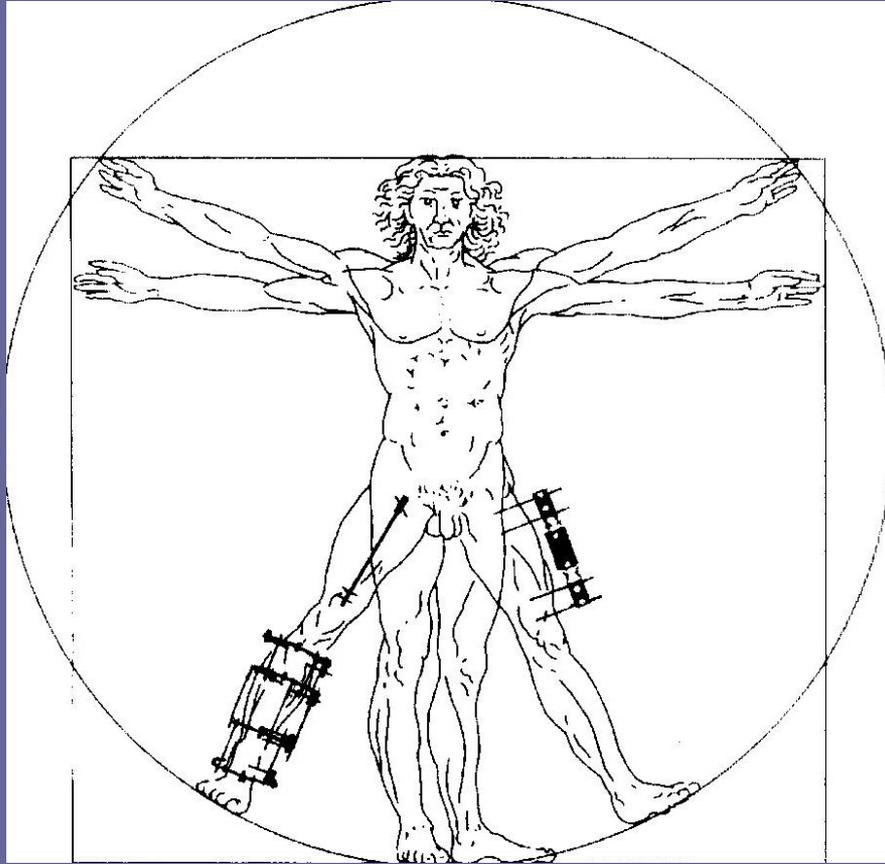


LLRS ASAMI-NA

- AAOS specialty day
 - March 13, 2004
 - San Francisco, CA
- Annual Meeting
 - July 23-25, 2004
 - Toronto, Canada



Thank You





Libby Rozbruch



Jason Rozbruch

