La fissazione circolare quale trattamento efficace nelle fratture tibiali multisegmentarie

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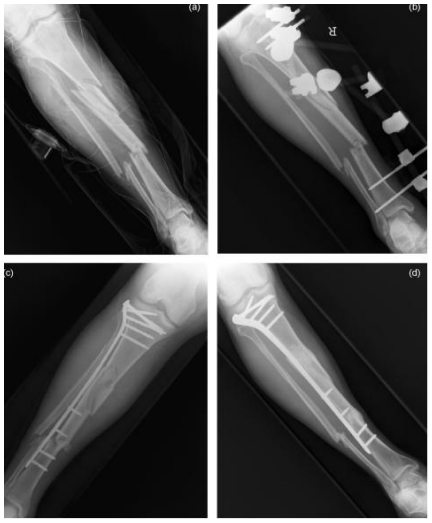
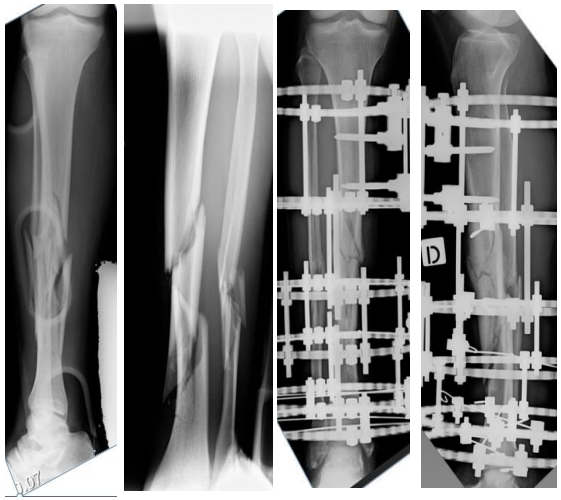
- ** Casa di Cura Villa Aprica Como

Fratture tibiali plurifocali

- Maggiore incidenza di complicazioni
- Segmento intermedio instabile
- Riduzione delle fratture chiuse complessa





Author	Year	Journal	N°patients	Class	% Open	Treatment	Time to union (weeks)	Union (%)
Giotakis	2010	JBJS	20			CEF	21.7	18 (90%)
Milenkovic	2018	Eur J Trauma Emer Surg	32		28%	UEF	27.0	26 (81%)
Makhdoom	2020	J Ayud Med Coll	45		67%	CEF	20.2	42 (93%)
Ozturkmen	2018	Injury	24		71%	CEF	38.0	24/24 (100%)
Bonnevialle	2003	Rev Chir Orthop Reparatrice Appar Mot	49		61%	IN (39) EF (10)		22/34 (65%)
Teraa	2012	Clin Orthop Relat Res	37	42C2	46%	IN (22) ORIF (3) EF (5)	34.0	25/30(83%)
Corey	2018	JOT	108	42C2	68%	IN (95),ORIF (4) EF (2)	26.0	91/101 (90%)
Sohn	2018	Asian j Surg	69		71%	IN(36)MIPO ORIF (33)24 Grafts	23.8 (escl delayed)	56/69(81%)
Reinders	2008	Injury	23		100%	ORIF	16 PROX 22 DIST	22/23 (96%)

Open acute segmental tibial fracture fixation using the Less Invasive Stabilisation System (LISS): Study of 23 consecutive cases

Peter Reynders *

Department of Traumatology, University Hospital Leuven, Herestraat 49, 3000 Leuven, Belgium

Injury, Int. J. Care Injured 40 (2009) 449–454

- Sindrome compartimentale 13%
- Infezione profonda 4%
- Accorciamento superiore a 2 cm 8%
- Malconsolidazione in valgo 4%
- RMS per intolleranza 30%
- Deficit neurologico 21%
- Ritardata consolidazione 12%
- Non consolidazione 4%
- Innesto osseo, iniezioni di midollo 12%

Journal of Orthopaedic Trauma 32(6):p 296-300, June 2018. | **DOI:** 10.1097/BOT.0000000000001132

Segmental Tibia Fractures: An Analysis of Complication and Healing Rates

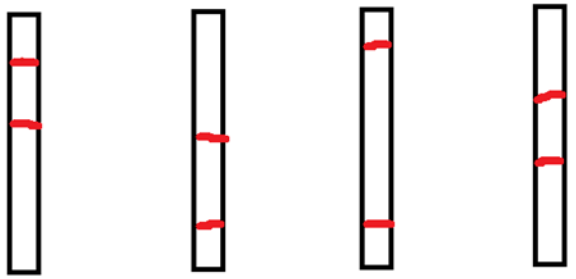
Corey, Robert M. MD*; Park, Nathan K. BS†; Cannada, Lisa K. MD*

- Sindrome compartimentale 31%
- Ritardata consolidazione 40%
- Non consolidazione 10%

Table 1. Classification of the segmental tibial fractures according to Melis et al.[18].

Type I	The fracture lines are situated proximally, so that the proximal fracture lies in the upper third of the shaft and the distal fracture lies in the middle third
Type II	The fracture lines are situated distally, so that the proximal fracture lies in the middle third of the shaft and the distal fracture lies in the lower third
Type III	The fracture lines are at the extremes of the shaft and there is a long intermediate fragment
Type IV	The fracture lines are close to one another and there is a short intermediate fragment in the middle third of the shaft

G.C. Melis, F. Sotgiu, M. Lepa, P. Guido
Intramedullary nailing in segmental tibial fractures
J Bone Joint Surg A, 63 (1981), pp. 1310-1318



Materiali e metodi

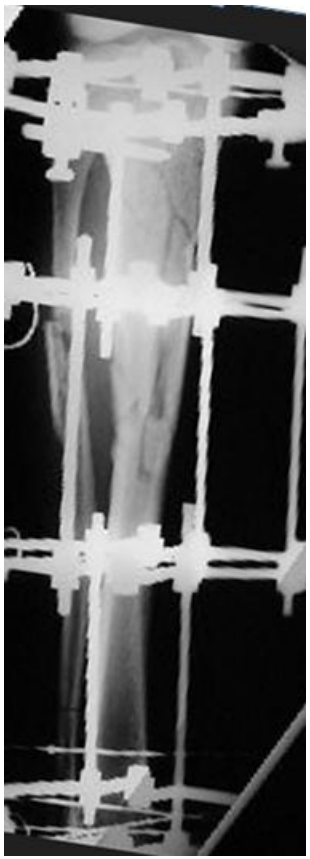
- 16 pazienti
- Eta' media 46.6 anni
- 11 maschi,4 femmine
- 13 bifocali, 3 trifocali
- Melis 1 (2) 2 (2) 3 (5) 4 (5)
- 6 fratture esposte

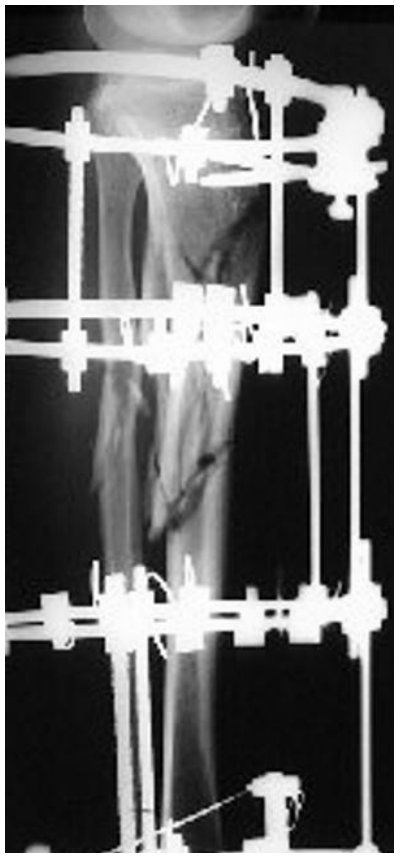
1	15	M	45	41C2/42C2		TRIFOCAL	GUSTILO 2	CLASSIC	CLASSIC	
2	22	M	30	42 C2	4	BIFOCAL	GUSTILO 3A	CLASSIC	CLASSIC	
3	30	F	55	42C3	4	BIFOCAL	GUSTILO 1	CLASSIC	CLASSIC	
4	112	M	46	42C3	1	BIFOCAL		CLASSIC	CLASSIC	
5	113	M	43	42C2	3	BIFOCAL		CLASSIC	CLASSIC	
6	191	F	48	42C2	4	BIFOCAL		CLASSIC	CLASSIC	
7	201	M	57	42C3/42A3		TRIFOCAL		CLASSIC	CLASSIC	
8	269	M	18	42C2	2	BIFOCAL		CLASSIC	CLASSIC	
9	274	M	37	42C3	4	BIFOCAL		CLASSIC	CLASSIC	
10	301	F	43	41C1/43A1	3	BIFOCAL	GUSTILO 3A	CLASSIC	CLASSIC	
11	365	F	62	42C2	4	BIFOCAL		TLHEX	TLHEX	
12	391	M	55	41C3 /43A3	3	BIFOCAL	GUSTILO3C	CLASSIC	CLASSIC	
13	416	M	44	42B3/43A1	2	BIFOCAL	GUSTILO 3A	CLASSIC	CLASSIC	
14	493	M	46	42C3	3	BIFOCAL		CLASSIC	CLASSIC	
15	500	F	69	41C1/43A1	3	BIFOCAL		CLASSIC	CLASSIC	
16	518	M	48	42C3/43A1		TRIFOCAL		CLASSIC	TLHEX	
		10 M 5F	46.8							

Risultati

- Sindrome compartimentale 0%
- Infezione profonda 0%
- Accorciamento superiore a 2 cm 0%
- Malconsolidazione in valgo 25 %
- Deficit neurologico 0%
- Ritardata consolidazione 25%
- Non consolidazione 0%
- Innesto osseo, iniezioni di midollo 0%

2	ANATOMIC	8°VALGUS	GOOD	31
3	ANATOMIC	ANATOMIC	VERY GOOD	20
4	ANATOMIC	4°VALGUS,5°PROCURVATUM,10 MM POST TRANSLATION	VERY GOOD	20
5	7°VALGUS	7°VALGUS	VERY GOOD	47
6	5°VALGUS	5°VALGUS	GOOD	21
7	ANATOMIC AXES (COMPENSATIVE DEVIATIONS)	ANATOMIC AXES	VERY GOOD	24
8	ANATOMIC	ANATOMIC	VERY GOOD	23
9	ANATOMIC AXES (COMPENSATIVE DEVIATIONS)	ANATOMIC AXES	VERY GOOD	17
10	ANATOMIC	ANATOMIC	VERY GOOD	19
11	ANATOMIC	ANATOMIC	VERY GOOD	19
12	ANATOMIC	ANATOMIC	VERY GOOD	26
13	ANATOMIC	ANATOMIC	VERY GOOD	81
14	ANATOMIC	ANATOMIC	VERY GOOD	31
15	ANATOMIC	ANATOMIC	VERY GOOD	19
16	ANATOMIC	ANATOMIC		





112 M 46 Y
42C3 Melis 1
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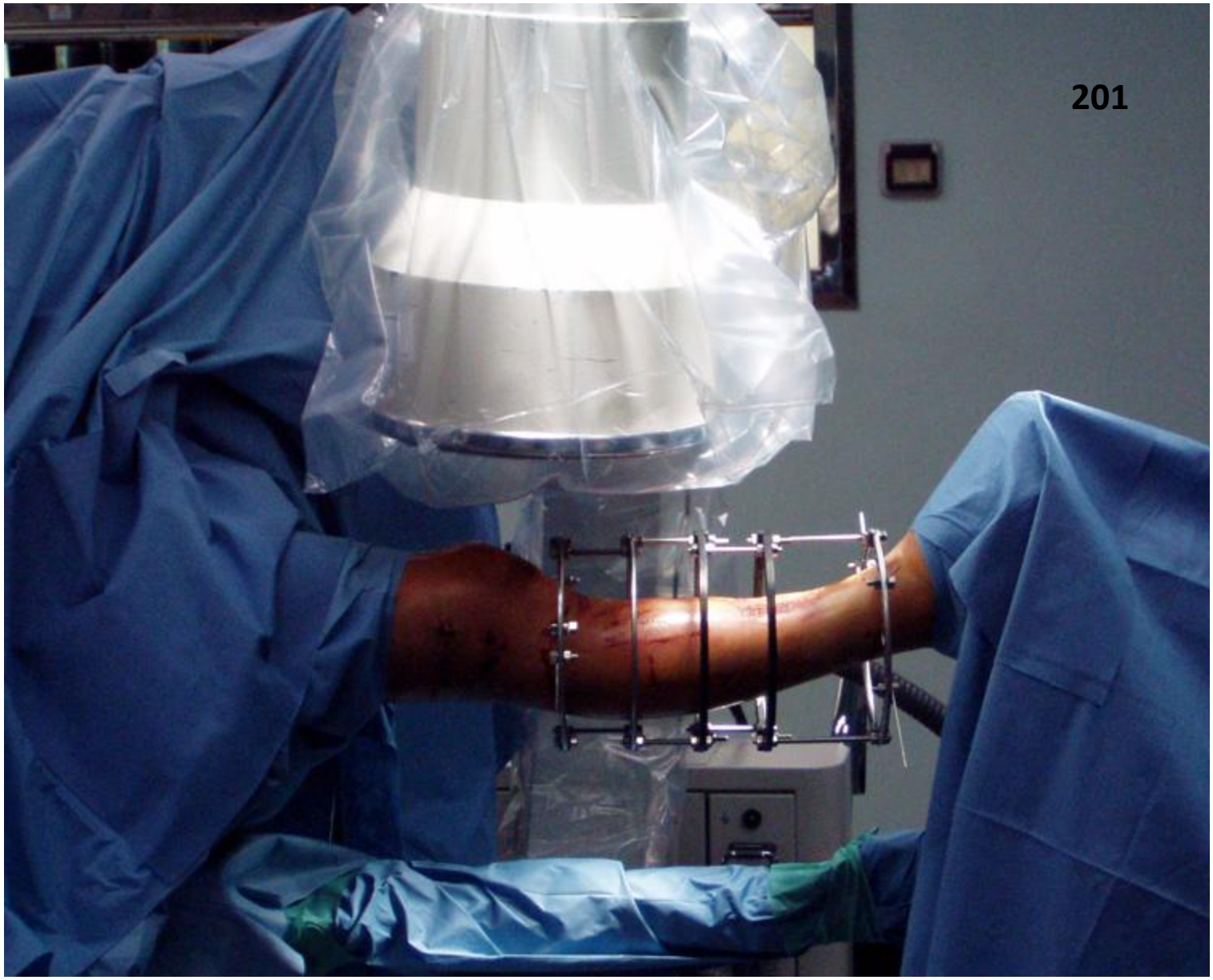
2002

2**01** M 57 Y
42 C3 42 A3
2006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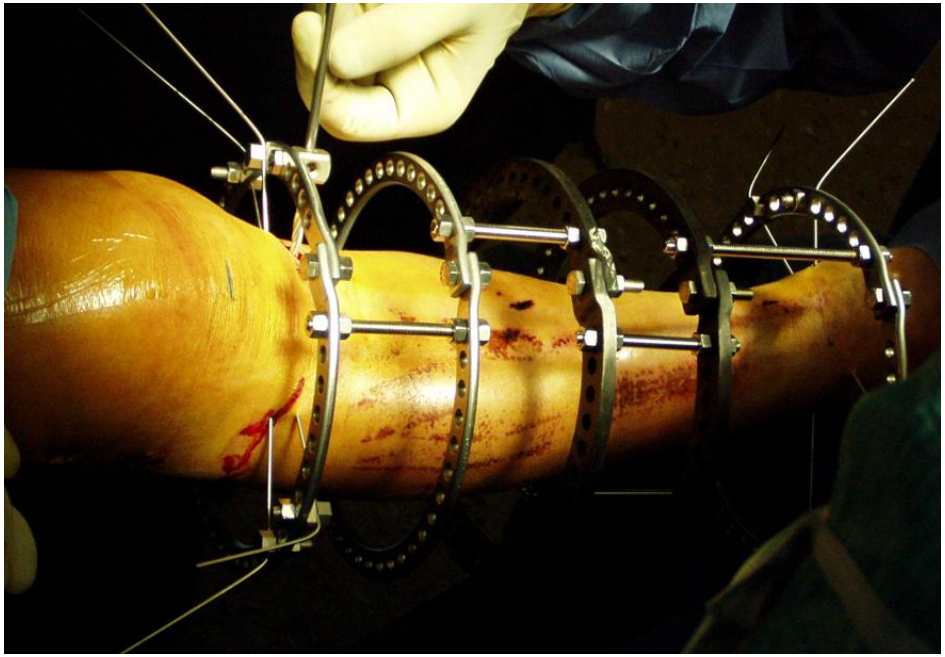

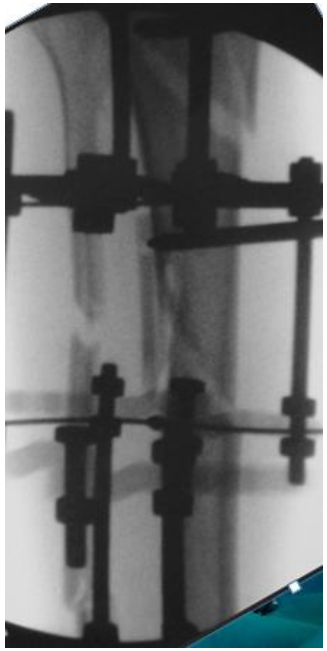

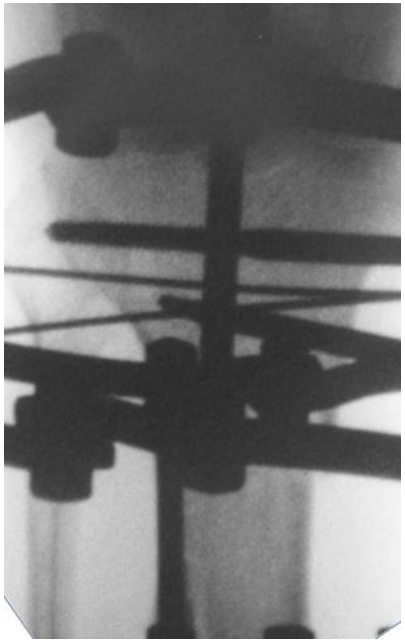

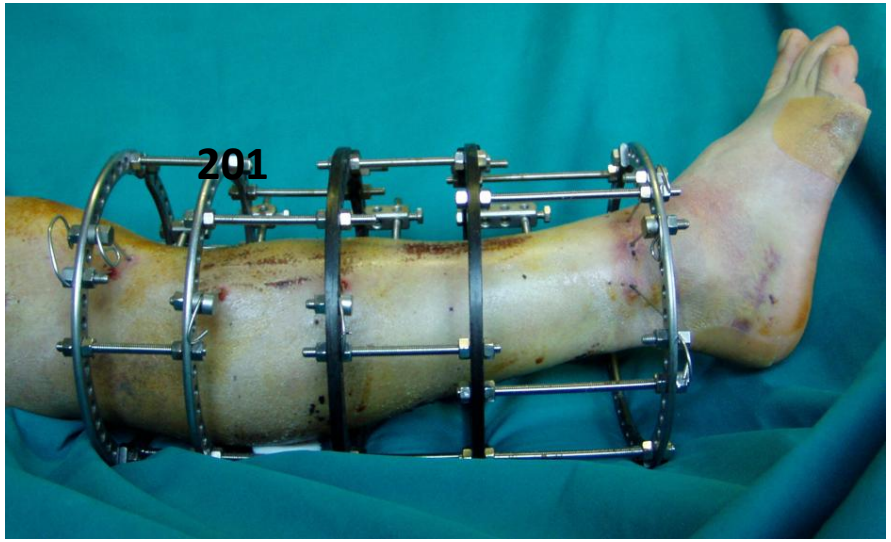
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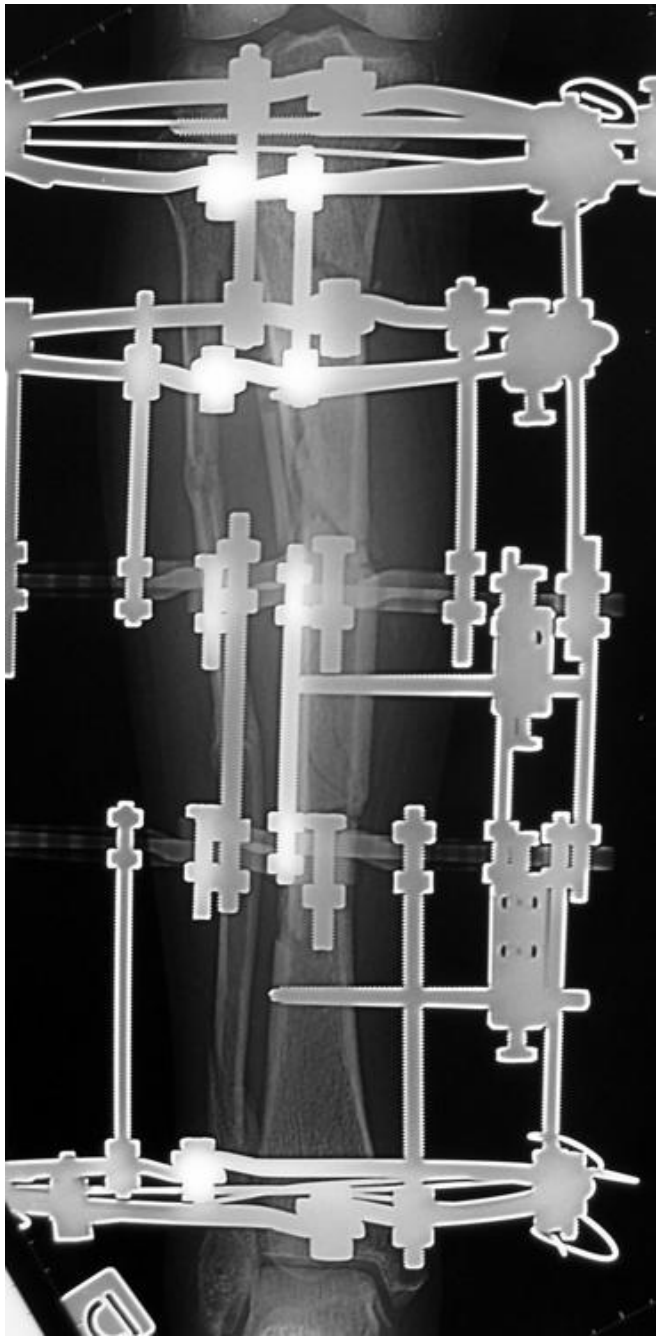

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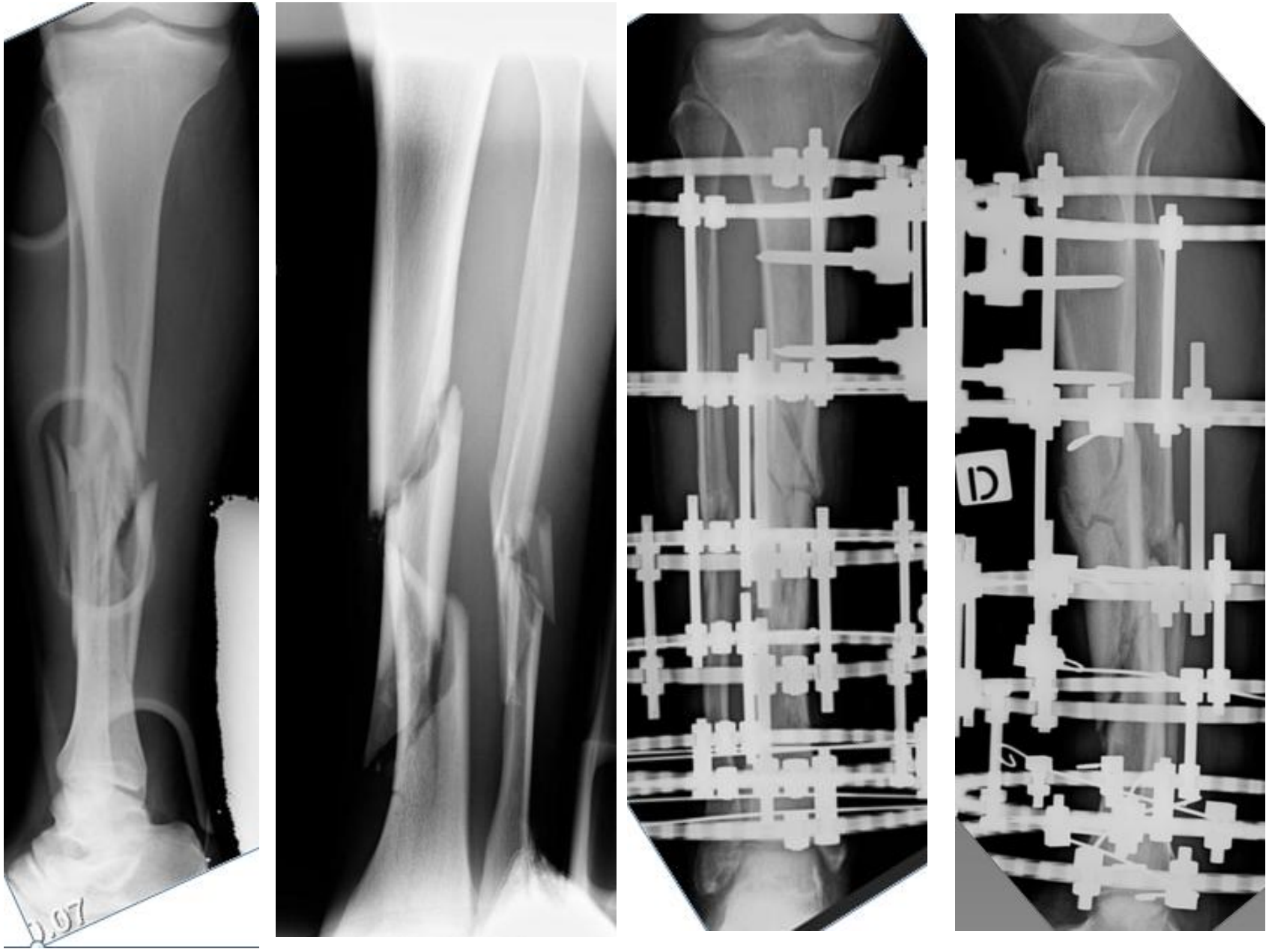

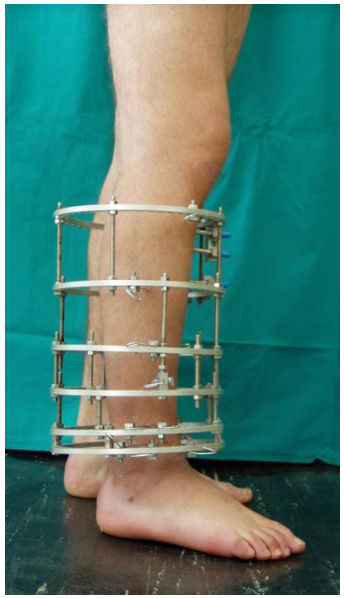

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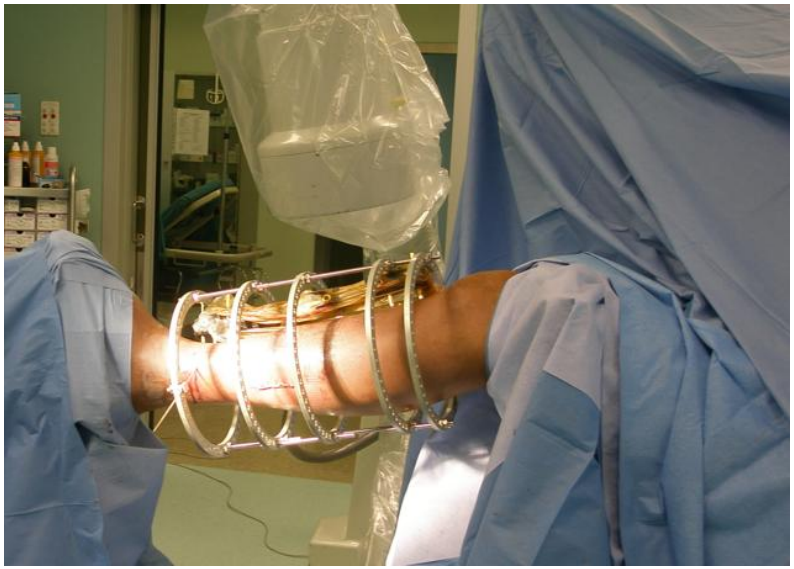
42C3 Melis 4
2009

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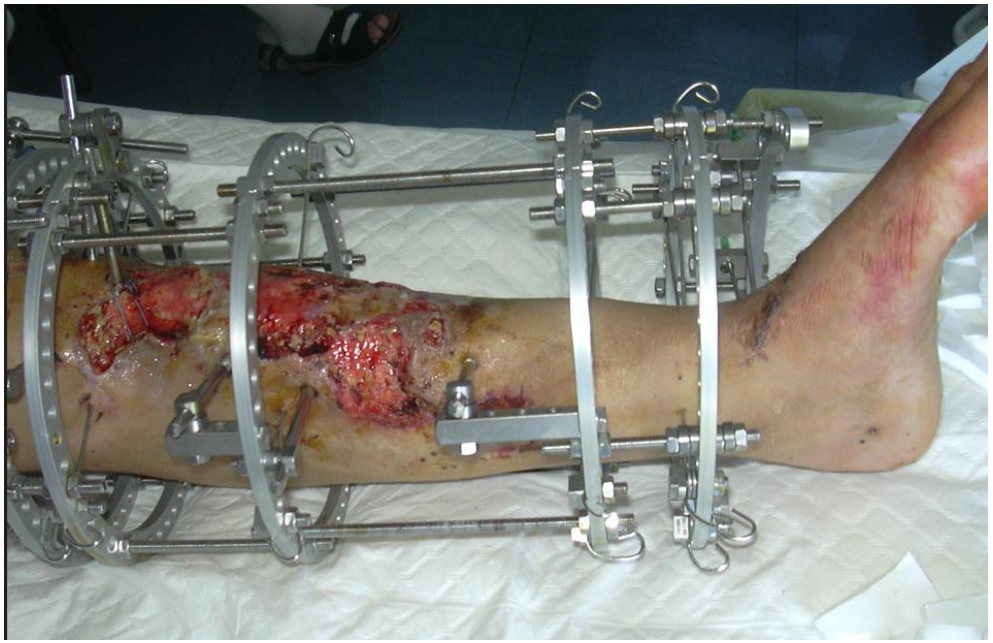
301 F 43Y 41 A3 /43 A1 Melis 3 GUSTILO 3 A 2011

301

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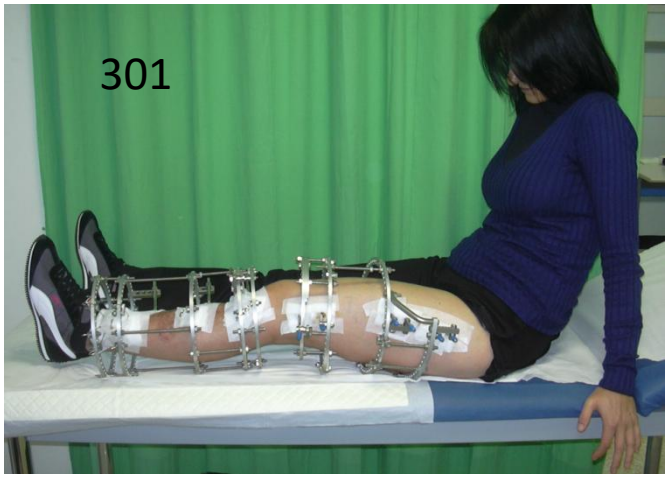
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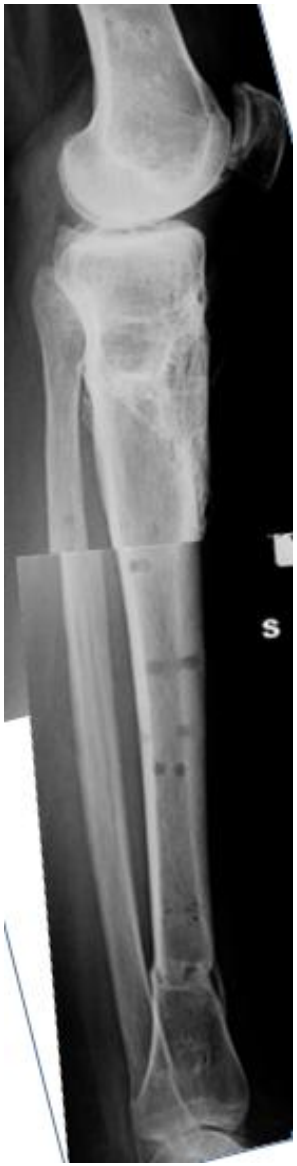

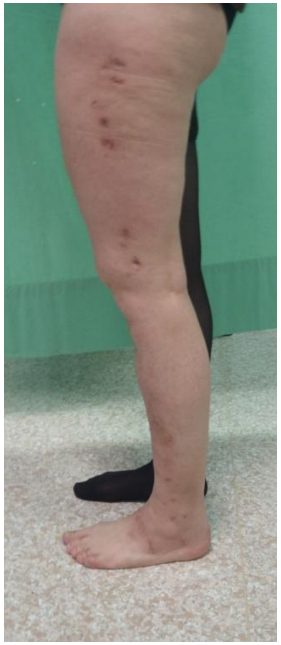

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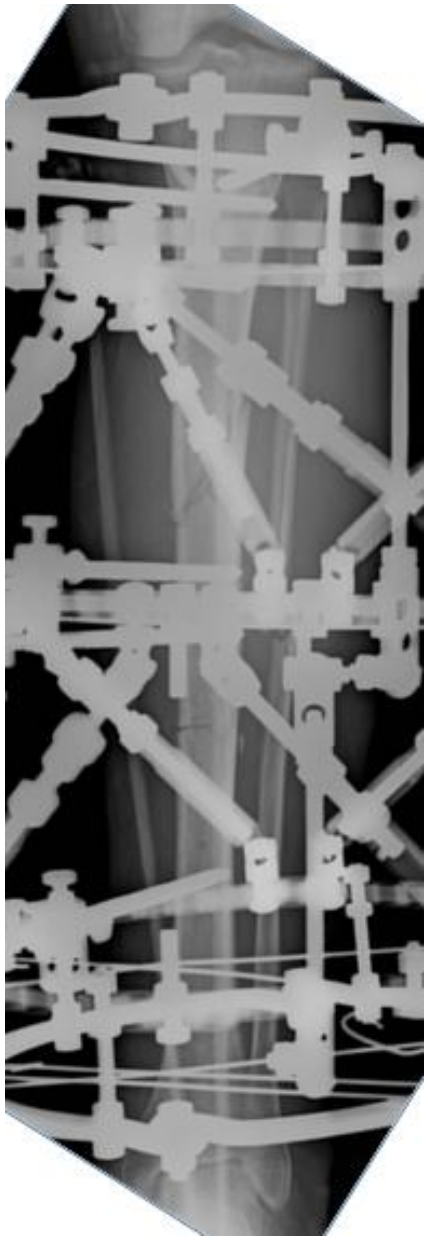

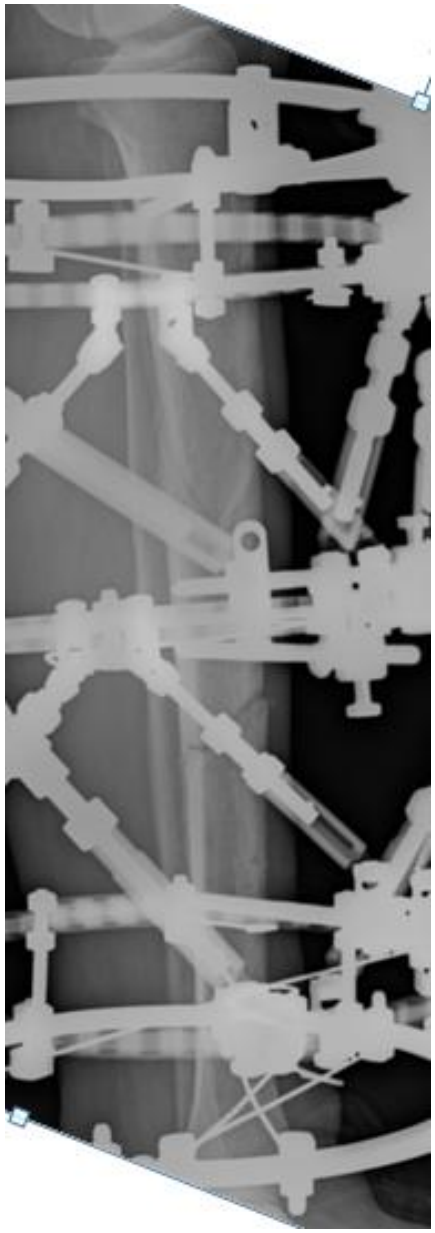

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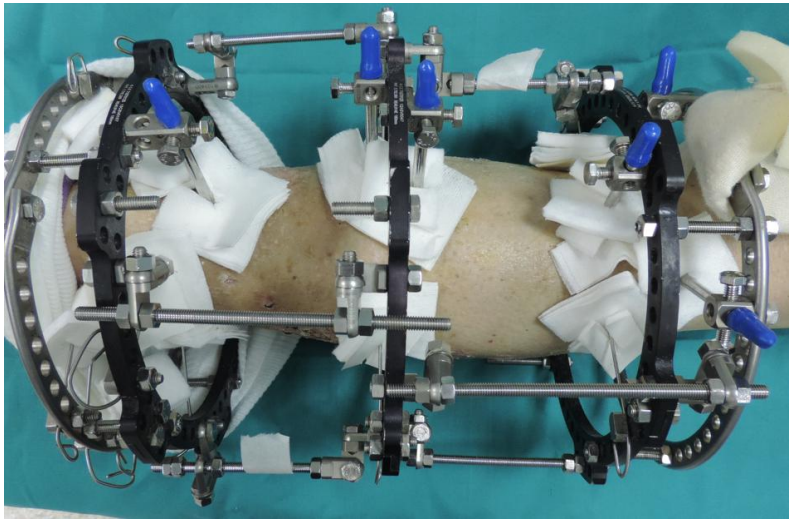

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391 M 55 Y
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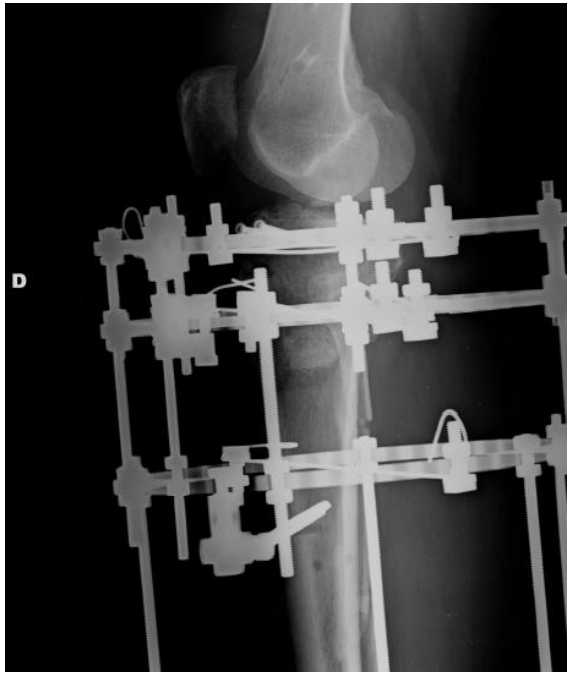
Gustilo 3C   TIF 26
2015



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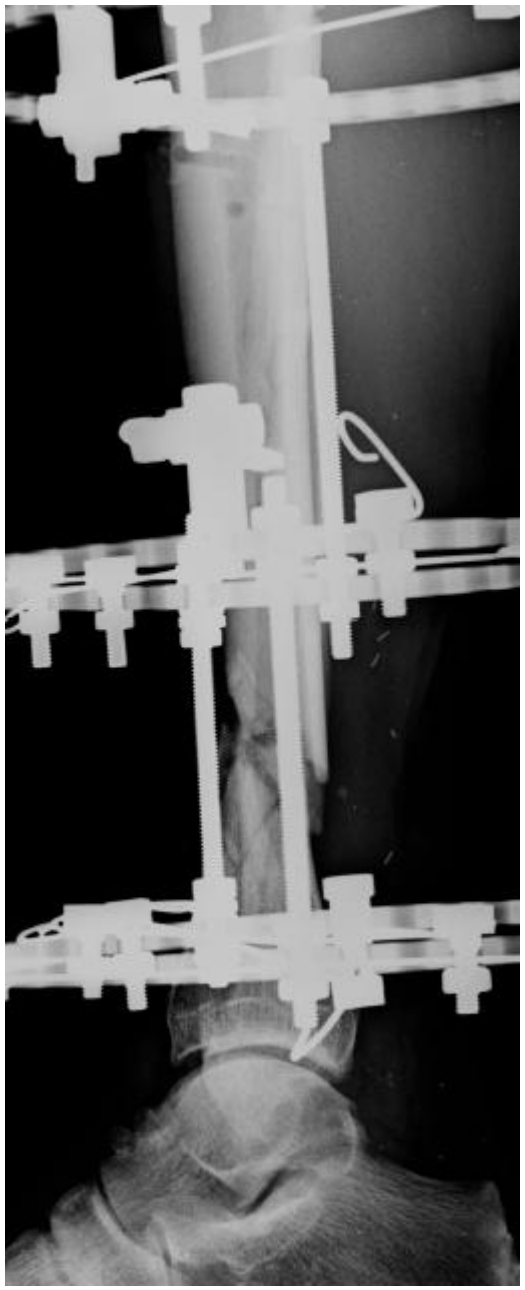

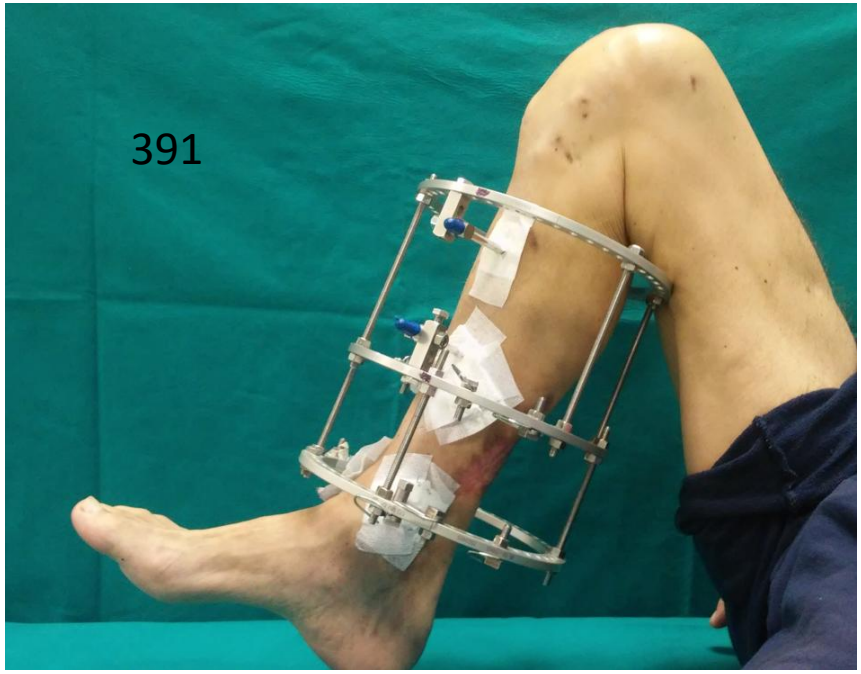
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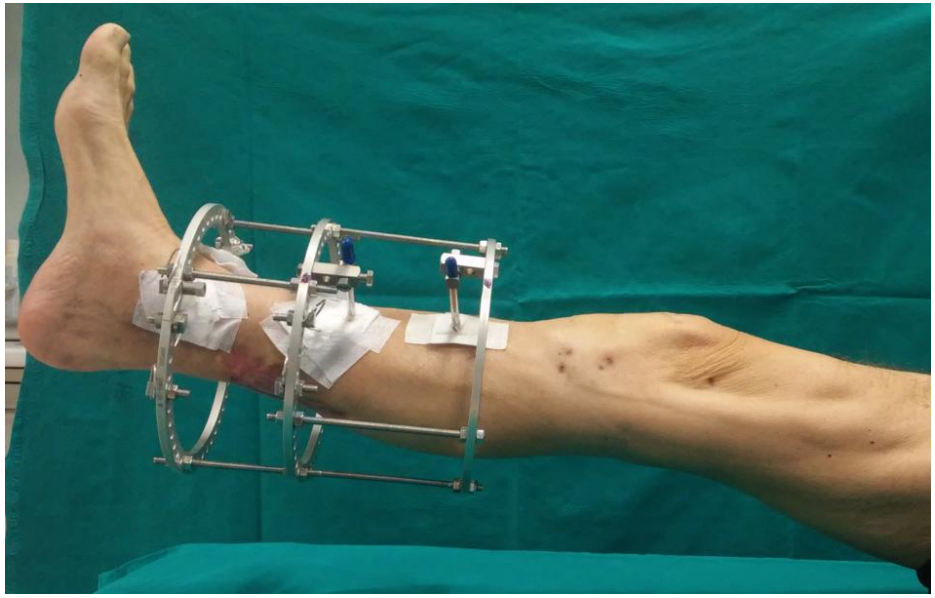

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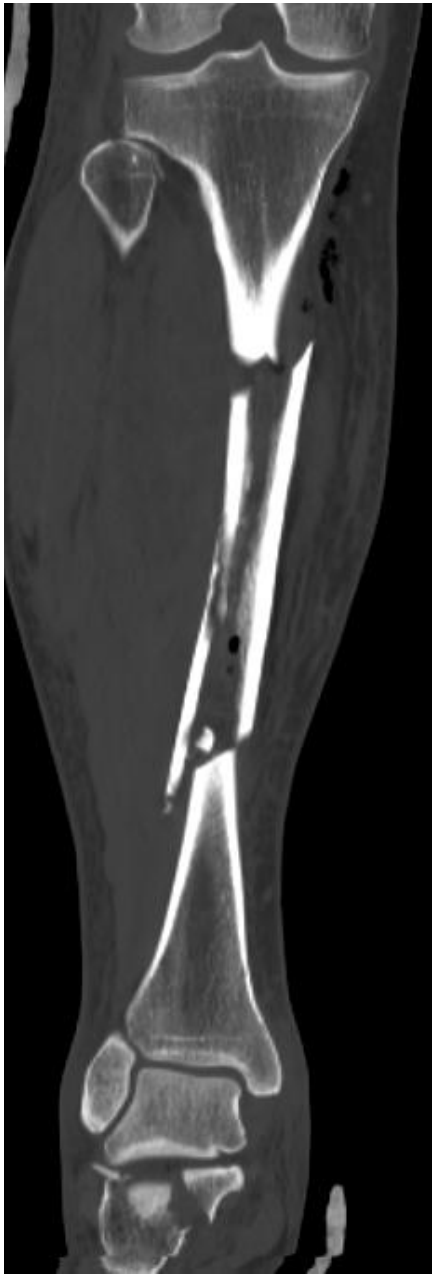

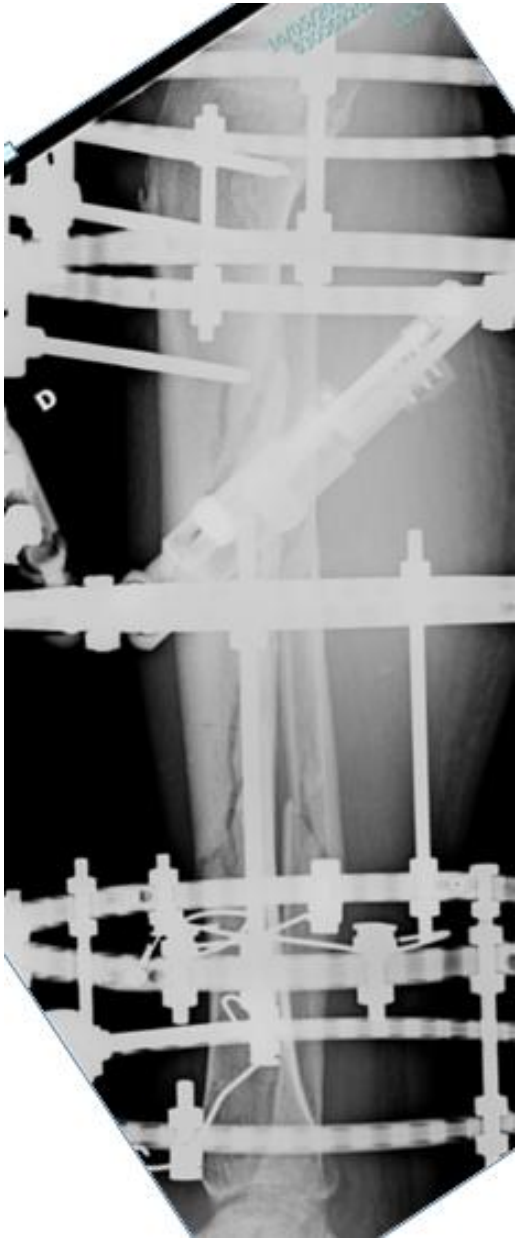

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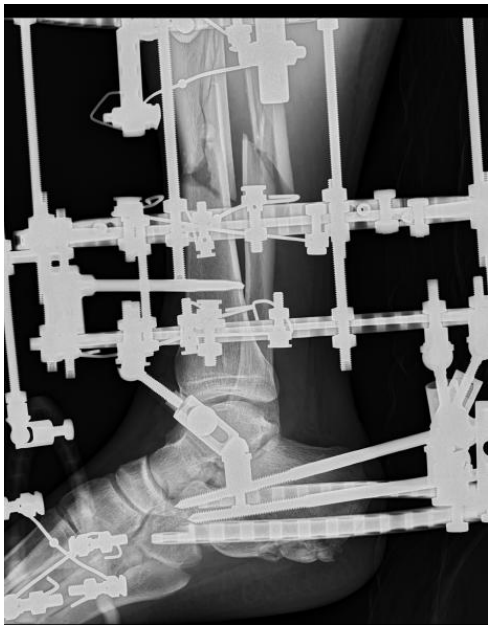

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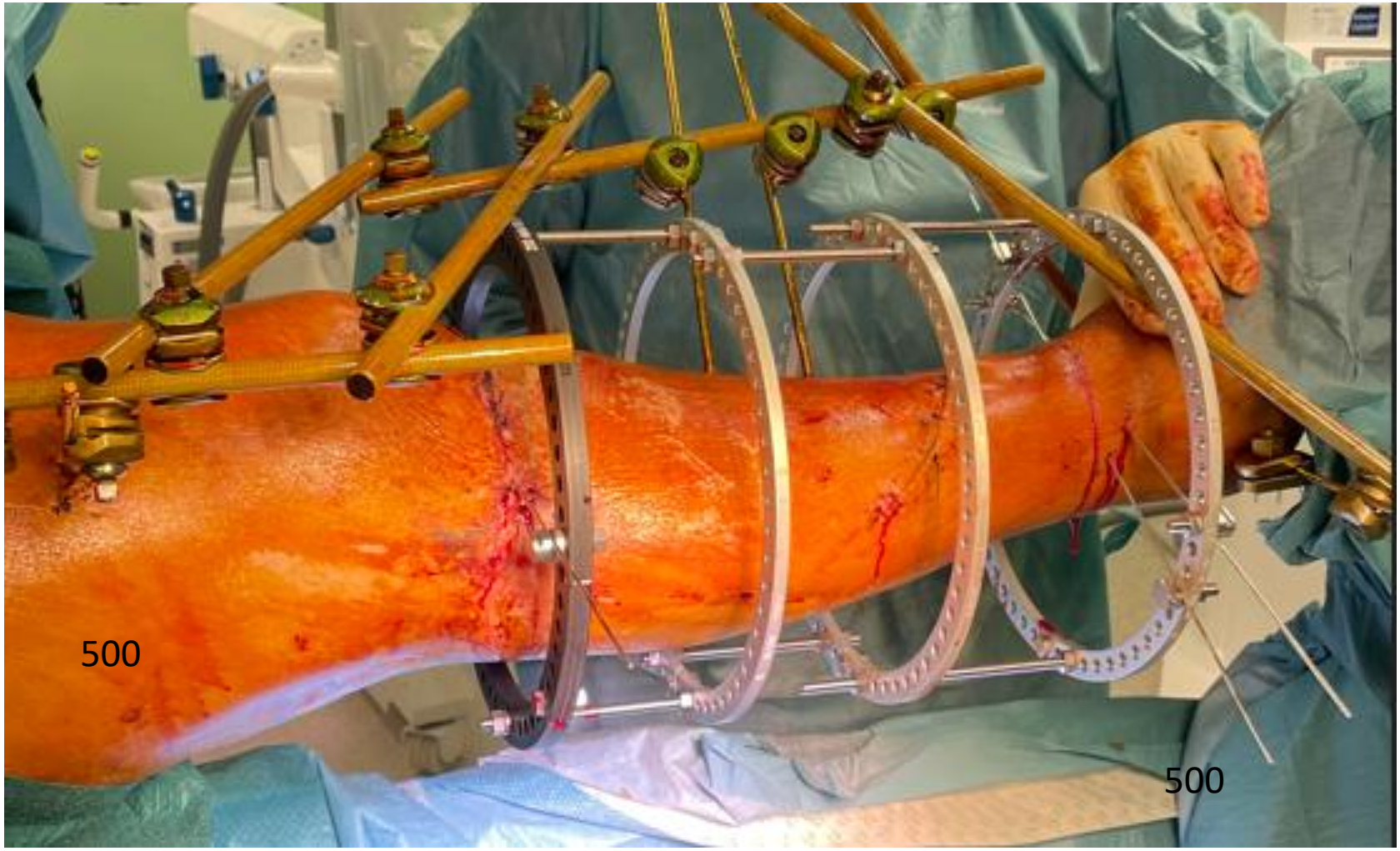
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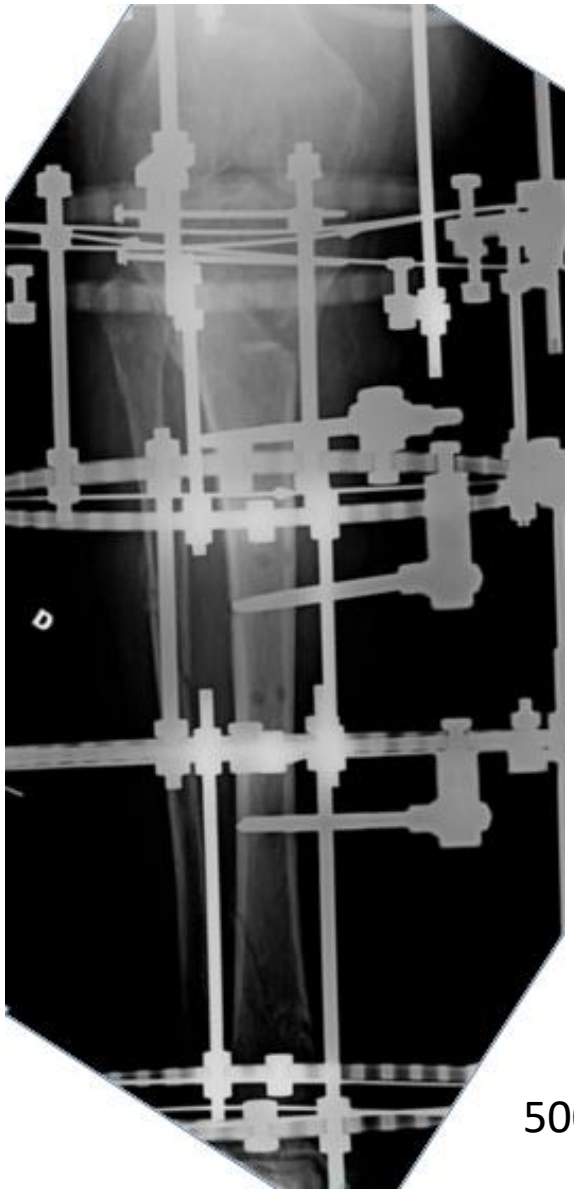

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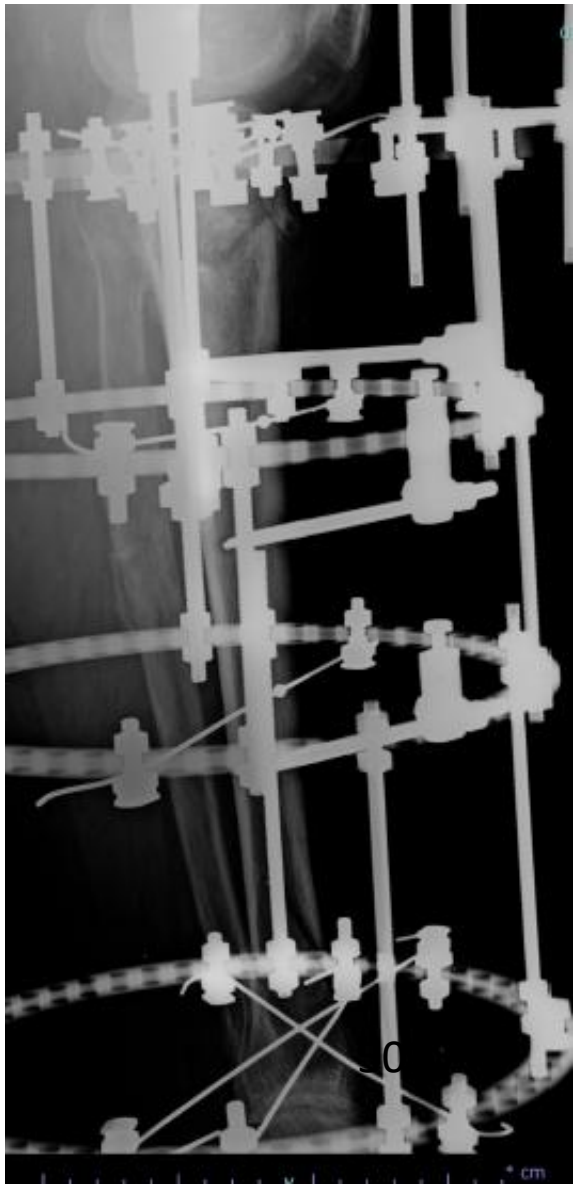


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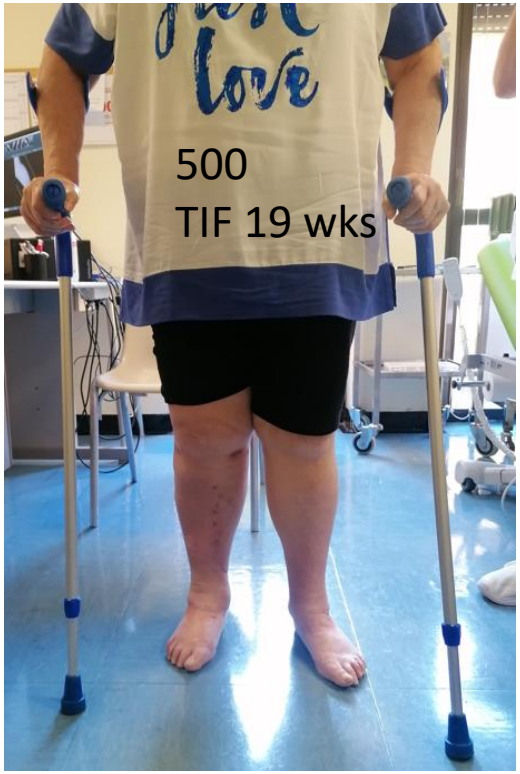
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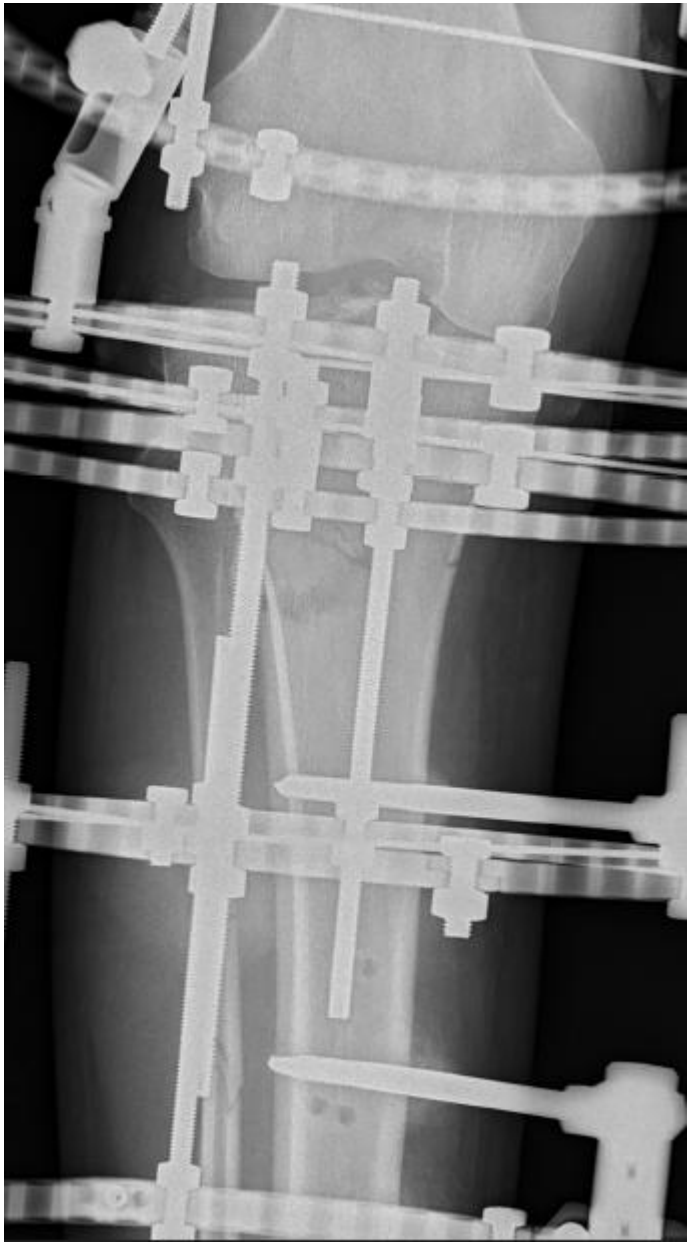
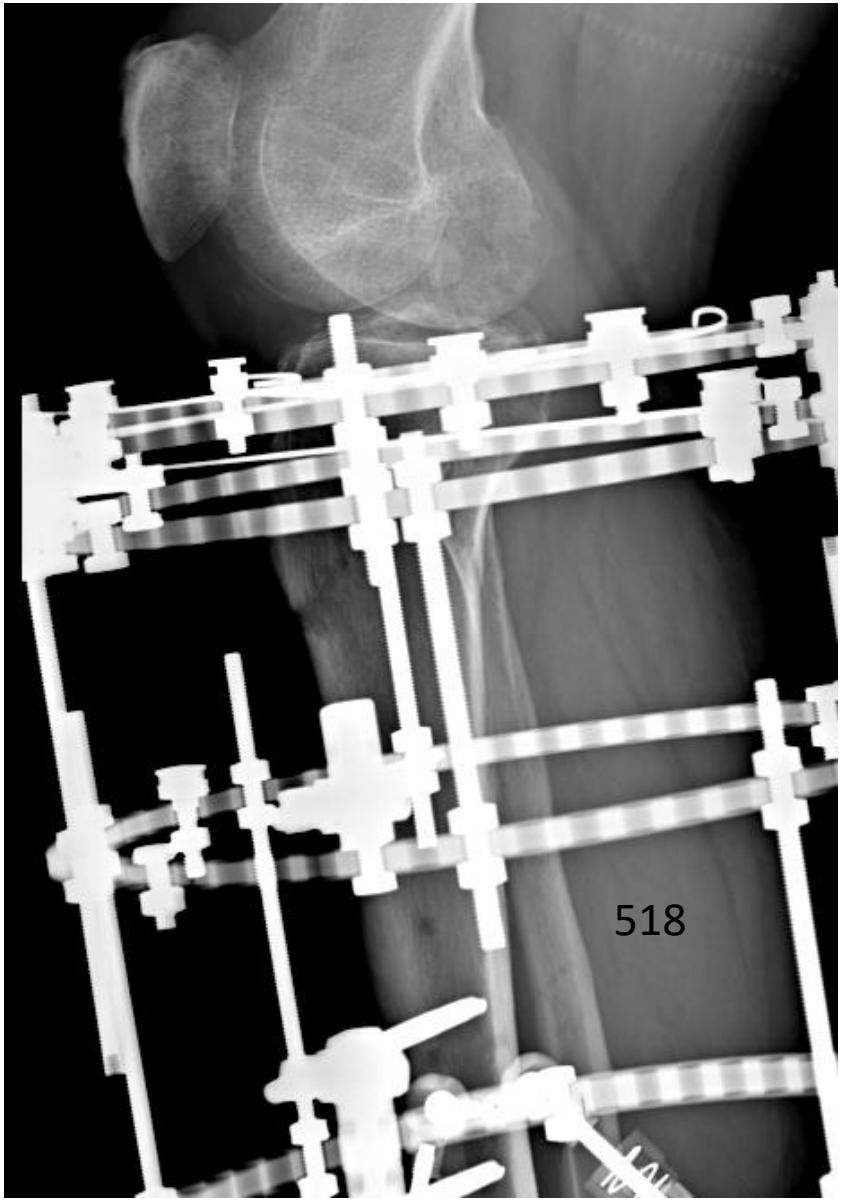
518 M 48 Y 42C3 43 A1 2024





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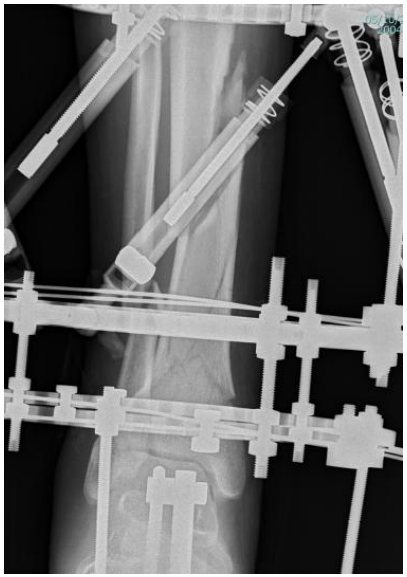

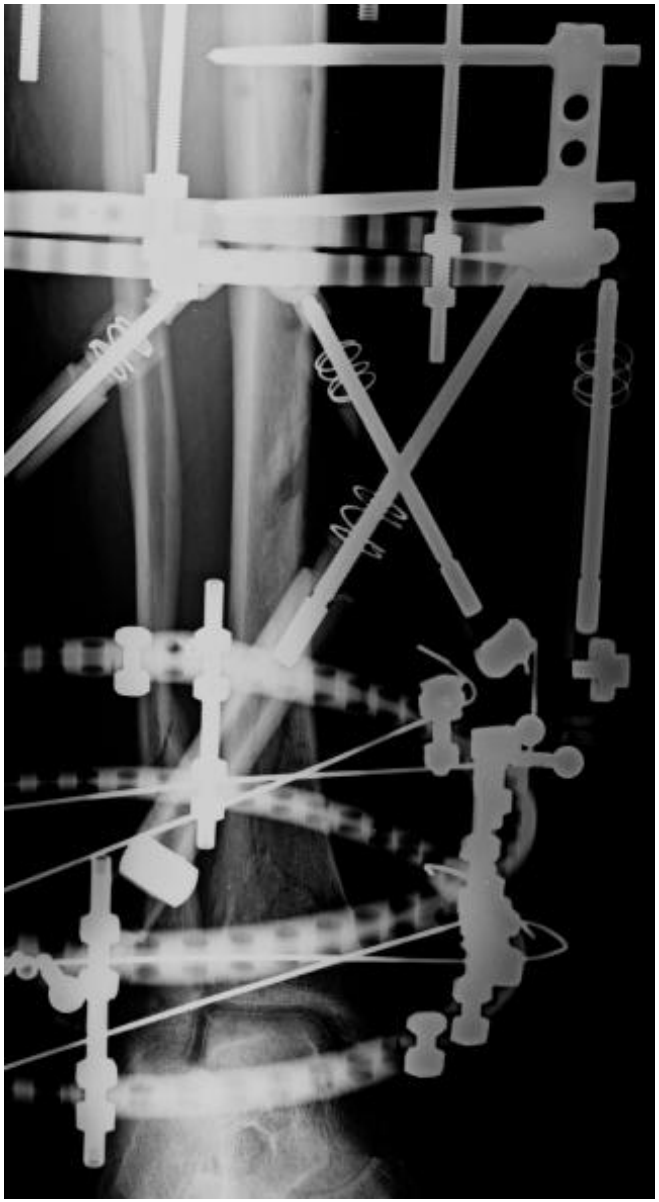

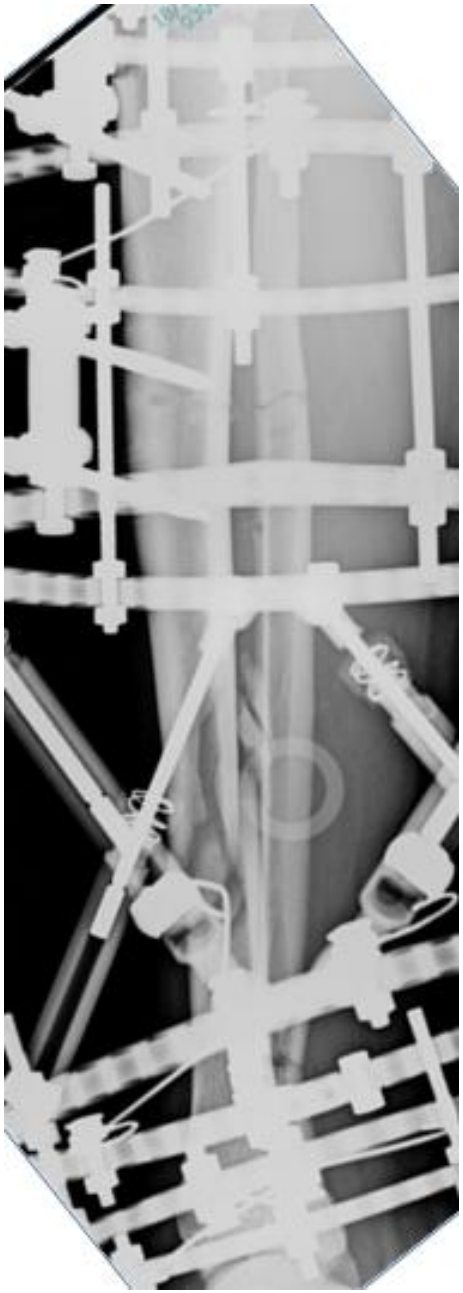

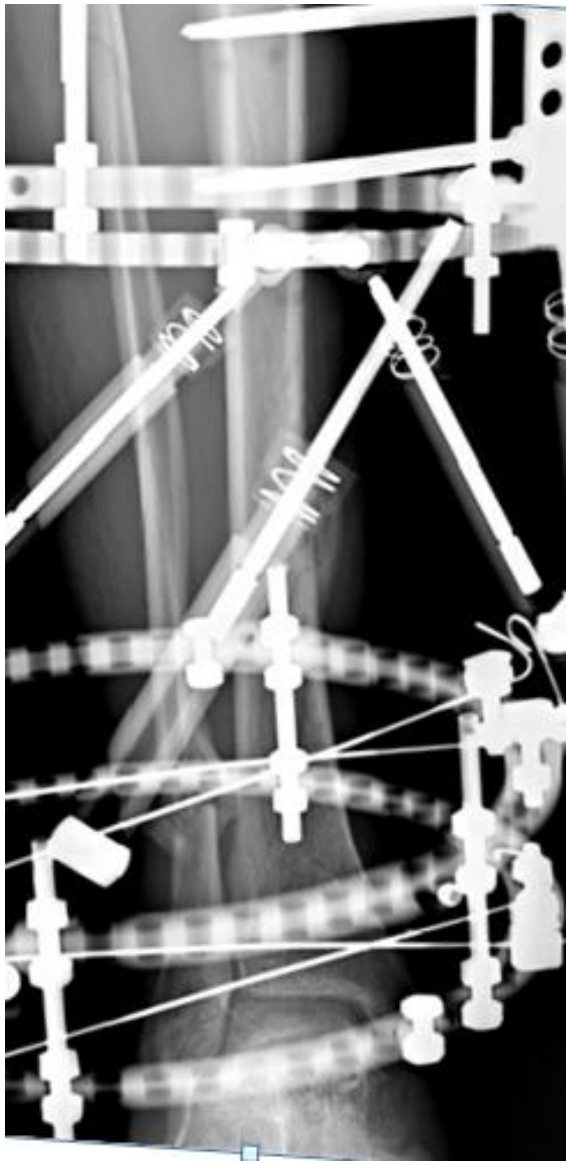

518

Considerazioni

- La fissazione circolare e' risultata essere una tecnica efficace nel trattamento delle fratture segmentarie tibiali
- La riduzione anatomica postoperatoria è stata possibile nel 71% dei casi, e un allineamento anatomico nell'86%
- Una modesta perdita di correzione per verosimile rimozione precoce dell'apparato si e' osservata in quattro dei primi casi trattati
- Sono risultati assenti complicazioni neurologiche, infettive profonde , accorciamenti e non consolidazioni. In nessun caso si è reso necessaria l'esecuzione di innesti ossei o tecniche adiuvanti la consolidazione.