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Fissazione esterna nel trattamento delle emergenze e traumi militari, tecniche di ricostruzione degli arti e trattamento degli esiti postraumatici

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Damage control in pediatric polytrauma

Guindani N[1], Grion L[1], Graci J[1], Sturla F[1], De Pellegrin M[1, 2], Chiodini F[1]

1. Regional Health Care and Social Agency Papa Giovanni XXIII Bergamo (IT)
2. Ospedale Piccole Figlie Hospital, Unità di Ortopedia Pediatrica Parma (IT)

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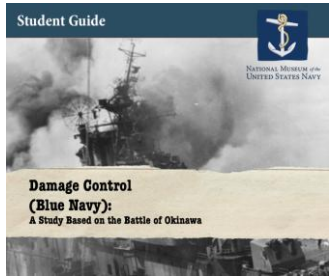

CHAPTER 12

DAMAGE CONTROL

…the events of 14-15 April 1988 have proven that solid damage control, good training, and sound leadership based on experience can save a ship that is on fire and sinking, to fight another day.

—Paul X. Rinn, CAPT
CO, USS *Samuel B. Roberts* (FFG-58)

US Navy _ The concept of “damage control” the management of damages on board:

1) to prevent damage from occurring,
2) **control damage while it is occurring**
3) restoration after the damage has occurred

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DCS

DCO Vs ETC

DCO + ETC = EAC

DCO ≠ MuST

= =

DCOs ≠ DCOL

J Trauma. 1993 Sep;35(3):375-82; discussion 382-3.

'Damage control': an approach for improved survival in exsanguinating penetrating abdominal injury

M F Rotondo [1], C W Schwab, M D McGonigal, G R Phillips 3rd, T M Fruchterman, D R Kauder, B A Latenser, P A Angood

The Journal of TRAUMA® Injury, Infection, and Critical Care

Changes in the Management of Femoral Shaft Fractures in Polytrauma Patients: From Early Total Care to Damage Control Orthopedic Surgery

Hans-Christoph Pape, MD, Frank Hildebrand, MD, Stephanie Pertschy, MD, Boris Zelle, MD, Rayeed Garapati, MD, Kai Grimme, MD, and Christian Krettek, MD

European Journal of Trauma and Emergency Surgery (2021) 47:2081–2092
https://doi.org/10.1007/s00068-020-01386-1

ORIGINAL ARTICLE

Indications and interventions of damage control orthopedic surgeries: an expert opinion survey

Roman Pfeifer[1] · Yannik Kalbas[1] · Raul Coimbra[2] · Luke Leenen[3] · Radko Komadina[4] · Frank Hildebrand[5] · Sascha Halvachizadeh[1] · Meraj Akhtar[1] · Ruben Peralta[6] · Luka Fattori[7] · Diego Mariani[8] · Rebecca Maria Hasler[1] · Rolf Lefering[9] · Ingo Marzi[10] · François Pitance[11] · Georg Osterhoff[12] · Gershon Volpin[13] · Yoram Weil[14] · Klaus Wendt[15] · Hans-Christoph Pape[1]

Received: 14 April 2020 / Accepted: 2 May 2020 / Published online: 26 May 2020

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DEFINITION(S)

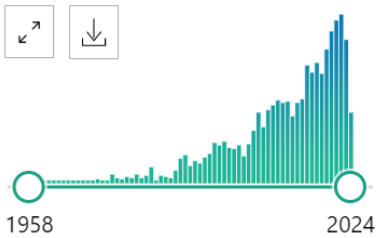
polytrauma definition

Advanced Create alert Create RSS

Save Email Send to

1,869 results

RESULTS BY YEAR



The definition of polytrauma: variable interrater versus intrarater agreement--a prospective international study among trauma surgeons.
Butcher NE, Enninghorst N, Sisak K, Balogh ZJ.
J Trauma Acute Care Surg. 2013 Mar;74(3):884-9. doi: 10.1097/TA.0b013e31827e1bad.
PMID: 23425752

Review > Injury. 2009 Nov:40 Suppl 4:S12-22. doi: 10.1016/j.injury.2009.10.032.

The definition of polytrauma: the need for international consensus

Nerida Butcher [1], Zsolt J Balogh

Affiliations + expand
PMID: 19895948 DOI: 10.1016/j.injury.2009.10.032

Major _ Poly _ Pediatric _ Trauma

https://surgeryreference.aofoundation.org/orthopedic-trauma/pediatric-trauma/further-reading/pediatric-polytrauma

PPT ≡ PMT

DCO -> Ø definitive treatment (= early total care)

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„Disclosure“

- Retrospective
- Analysis concerning the chosen strategies
- No „EBM“
- No „GUIDE LINE“

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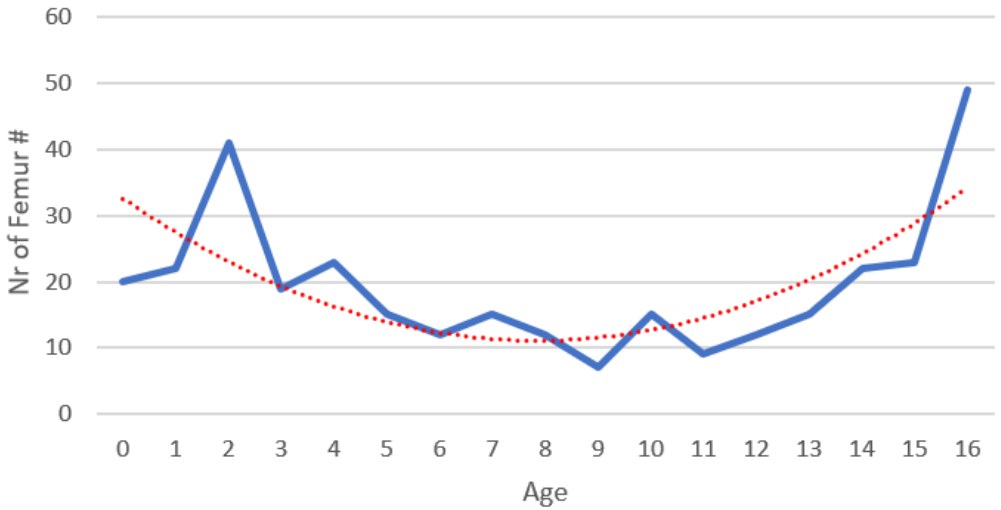
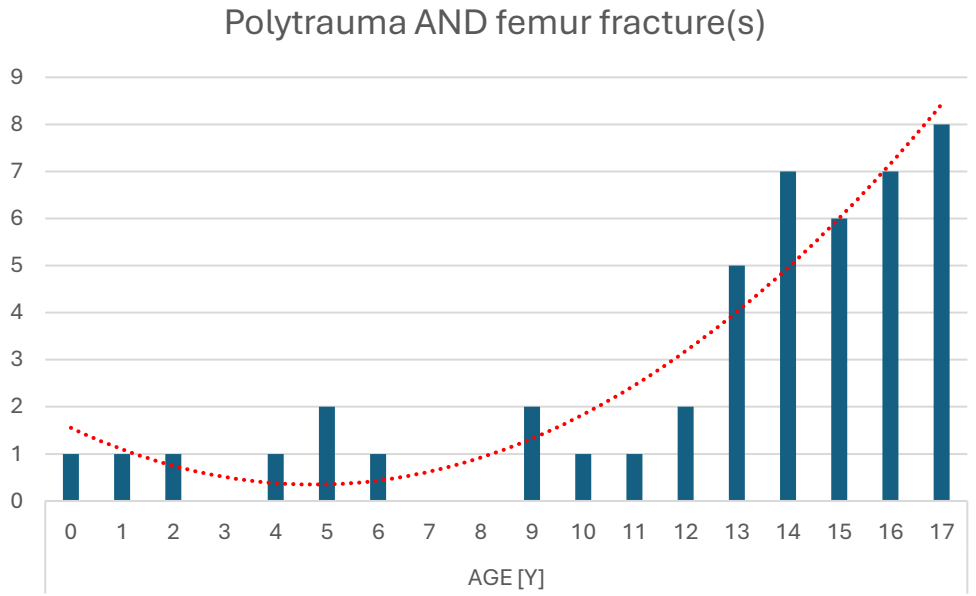
TOT: 298 FEMURSHAFT_#



46/298 FEMURSHAFT_# Λ PPT



3. PED TRAUMA CENTER
10.000.000 INHABITANTS
STUDY TIME: 10 Y

	PMT	0-4	5->11	12->14	15->17	Check tot
DCO	ExF	0	1	9	23	33
	ESIN	2	4	5	0	11
	BBG	2	0	0	0	2
		4	5	14	23	46

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Age groups	< 3	3-4	5-11	12-14	15-17
total events	66	23	48	37	124
SC/Brace	63/66 _ **95%**	8/23 _ **30%**			
ESIN	3/66 _ **5%**	14/23 _ **61%**	39/48 _ **81%**	18/37 _ **49%**	
IMN			2/48 _ **4%**	15/37 _ **41%**	112/124 _ **90%**
ExF*		1/23 _ **4%**	0/48 _ **0%**	1/37 _ **3%**	0/124 _ **0%**
MIPO			5/48 _ **9%**	3/37 _ **5%**	12/124 _ **10%**
OTHERS**			2/48 _ **4%**		
ExF_DCO			4/48 _ **8%**	11/48 _ **23%**	39/124 _ **31%**

* as definitive treatment. DCO Excluded
** e.g. telescopic rods or Ilizarov.

Ø Ø

The Paediatric Polytrauma. In EPOS Practical Guide Paediatric Trauma. Springer Nature 2024.

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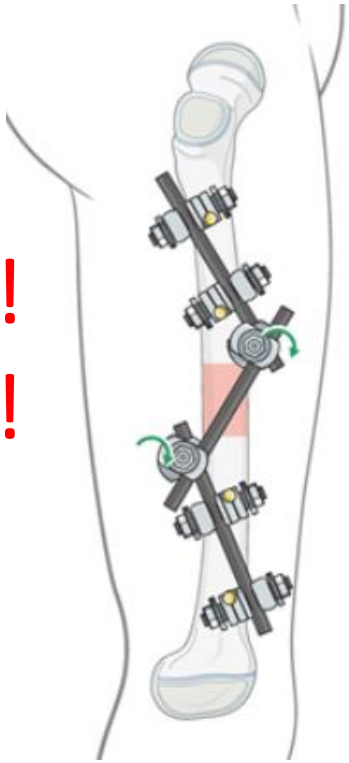
Ø DCO < 5y ? Maybe No!

↓ DCO < 14y? Maybe No!



Review Article

The Pediatric Polytrauma Patient: Current Concepts

Nirav K. Pandya, MD
Vidyadhar V. Upasani, MD
Vedant A. Kulkarni, MD

Abstract

Understanding the pediatric response to polytrauma is essential for the orthopaedic surgeon. The physiologic effects of multisystem injury that manifest in a child have important implications for coordination of treatment, particularly in relation to the timing and incidence of organ failure. The orthopaedic surgeon plays an important role in managing hemodynamic instability, vascular insult, and neurologic damage in the child with multiple injuries. Indications for surgery and postoperative immobilization in the pediatric polytrauma patient differ from those in the patient with an isolated injury. Further research is needed to determine the most appropriate method of management for extremity fractures in the pediatric polytrauma patient, particularly regarding the timing of fixation and management of open fractures.

Das schwer verletzte Kind

B. Auner, H. Jakob, I. Marzi

Klinik für Unfall-, Hand- und Wiederherstellungschirurgie, Universitätsklinikum Frankfurt am Main

Review Article

Early total care to early appropriate care - What every anesthesiologist must know!

Babita Gupta, Kamran Farooque[1]

Departments of Anesthesiology, Pain Medicine and Critical Care and [1]Orthopaedics, Jai Prakash Narayan Apex Trauma Centre, All India Institute of Medical Sciences, New Delhi, India

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In the paediatric patient an organ failure tends to resolve quickly
Unstable -> stable.

The difference between def treatment and DCO is vaguer in children (e.g. ESIN Vs IMN). Def treatment less invasive.

- Guindani N, De Pellegrin M. **The Paediatric Polytrauma.** In EPOS Practical Guide to Paediatric Trauma. Subm. Springer Nature 2024
- Anari JB, Hosseinzadeh P, Herman MJ, Eberson CP, Baldwin KD. **Pediatric Polytrauma: What Is the Role of Damage Control Orthopaedics in the Pediatric Population?** Instr Course Lect. 2019;68:337–46.
- Pfeifer R, Klingebiel FKL, Halvachizadeh S, Kalbas Y, Pape HC. **How to Clear Polytrauma Patients for Fracture Fixation: Results of a systematic review of the literature.** Injury. 2023;54(2):292–317.
- De Pellegrin M, Marcucci L, Drossinos A MD. **External fixation or intramedullary nailing in lower limb fractures in children in mass casualty incidents?** Eur J Trauma Emerg Surg. 2020;46:3–316.

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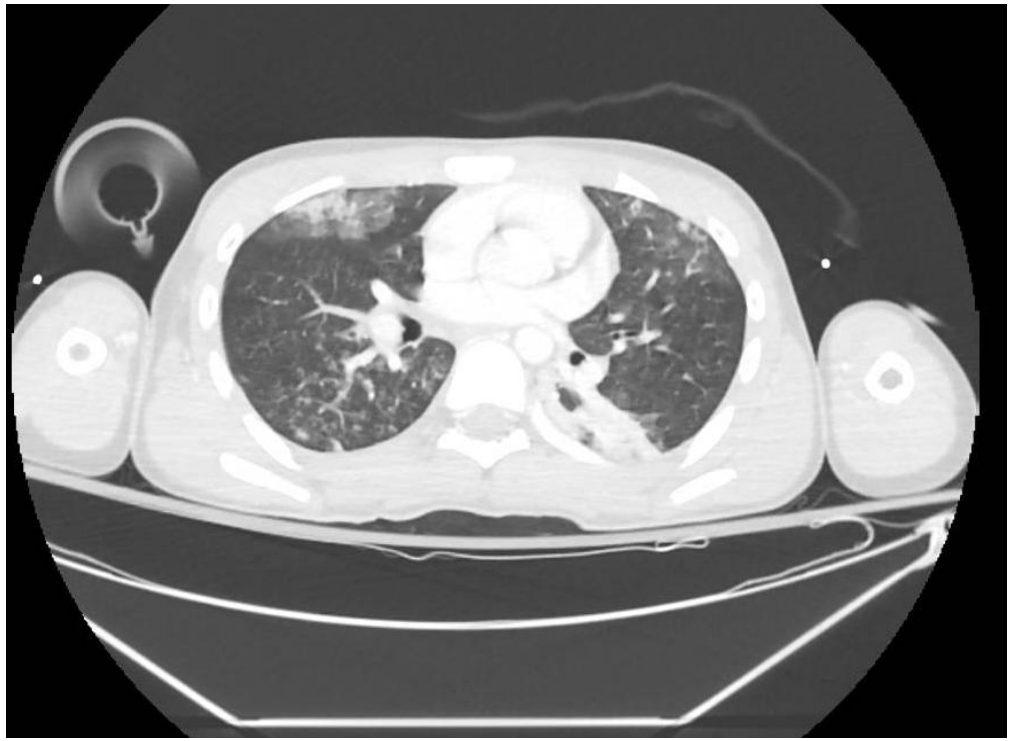
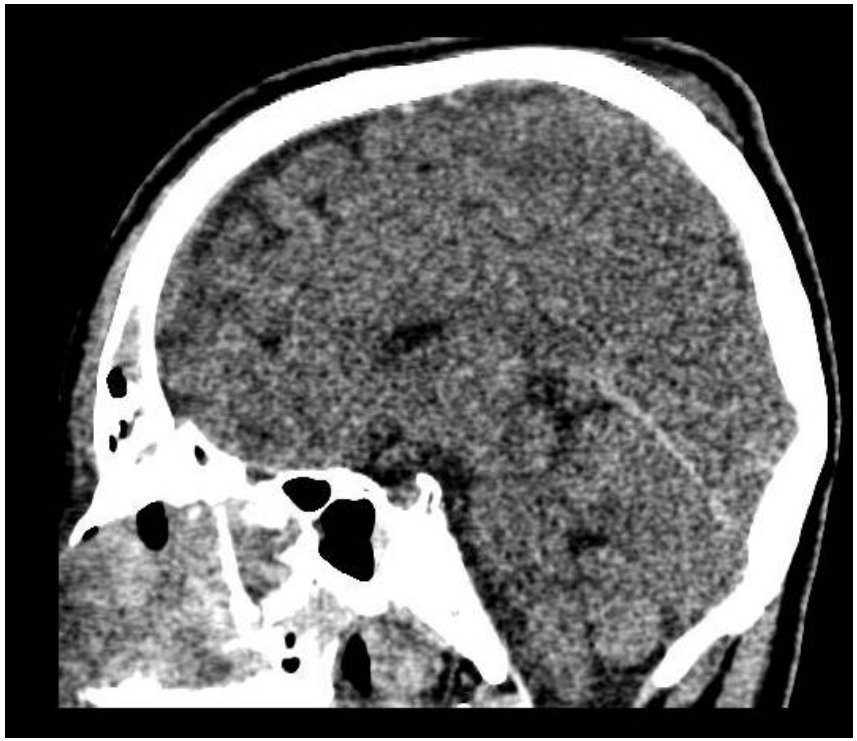
ZA _ 16y _ M

T: 0

- MVA
- Lung cont
- Femur bilat
- ESA
- Multiple Facial #





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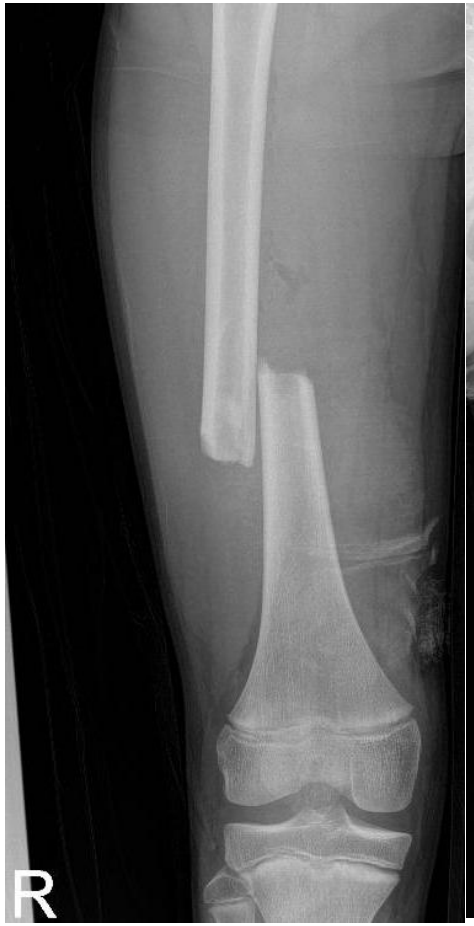
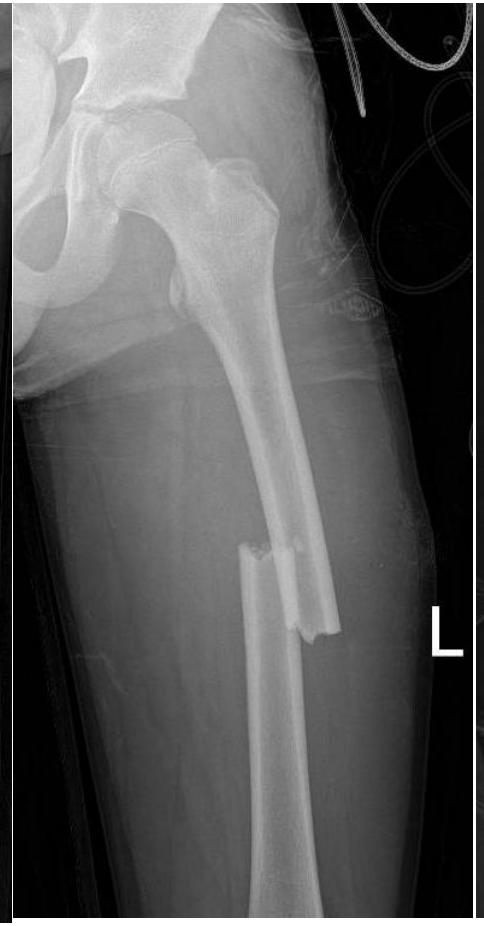
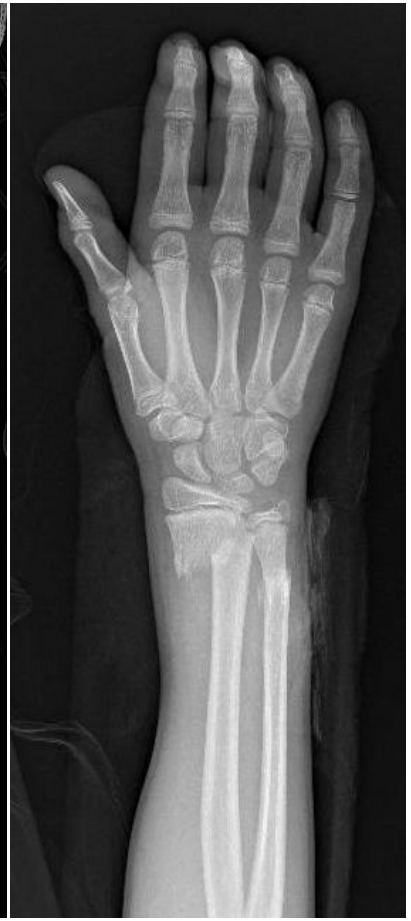
ZA _ 16y _ M

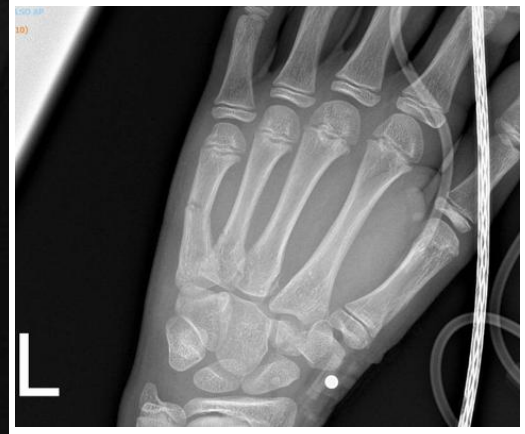
T: 0

- Bds GA1-2 Femur #
- FA #
- Hand #









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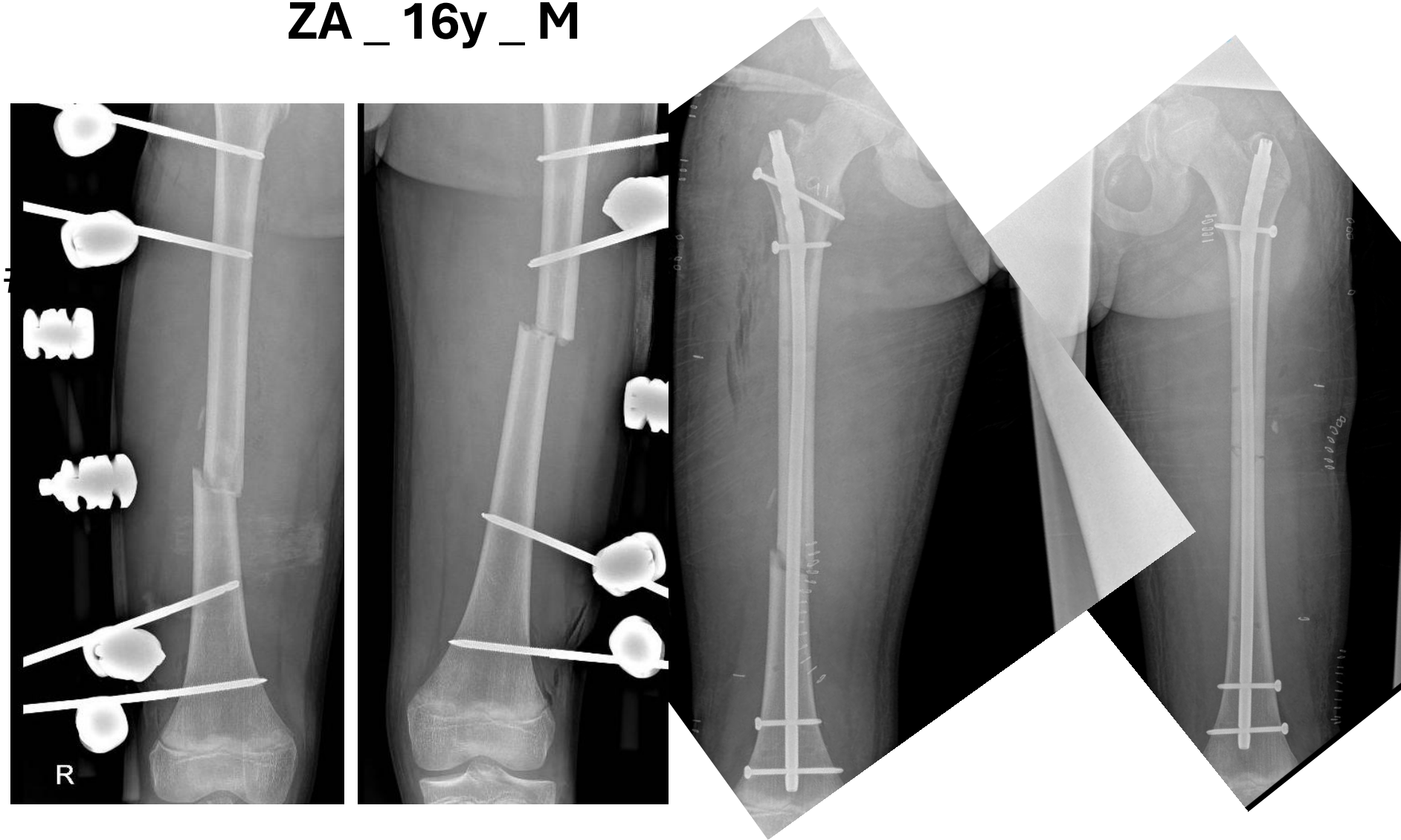
ZA _ 16y _ M

T: 0

- Bds GA1-2 Femur #
- FA #
- Hand #



ZA _ 5y _ M

Fall from 8m

T: 0

- Pneumo Med
- Pneumo Peritoneum
- Closed book #
- Floating knee

Hemodyn Hypo Schock class 1

-> Responder (fluid load)

-> Stable and normal

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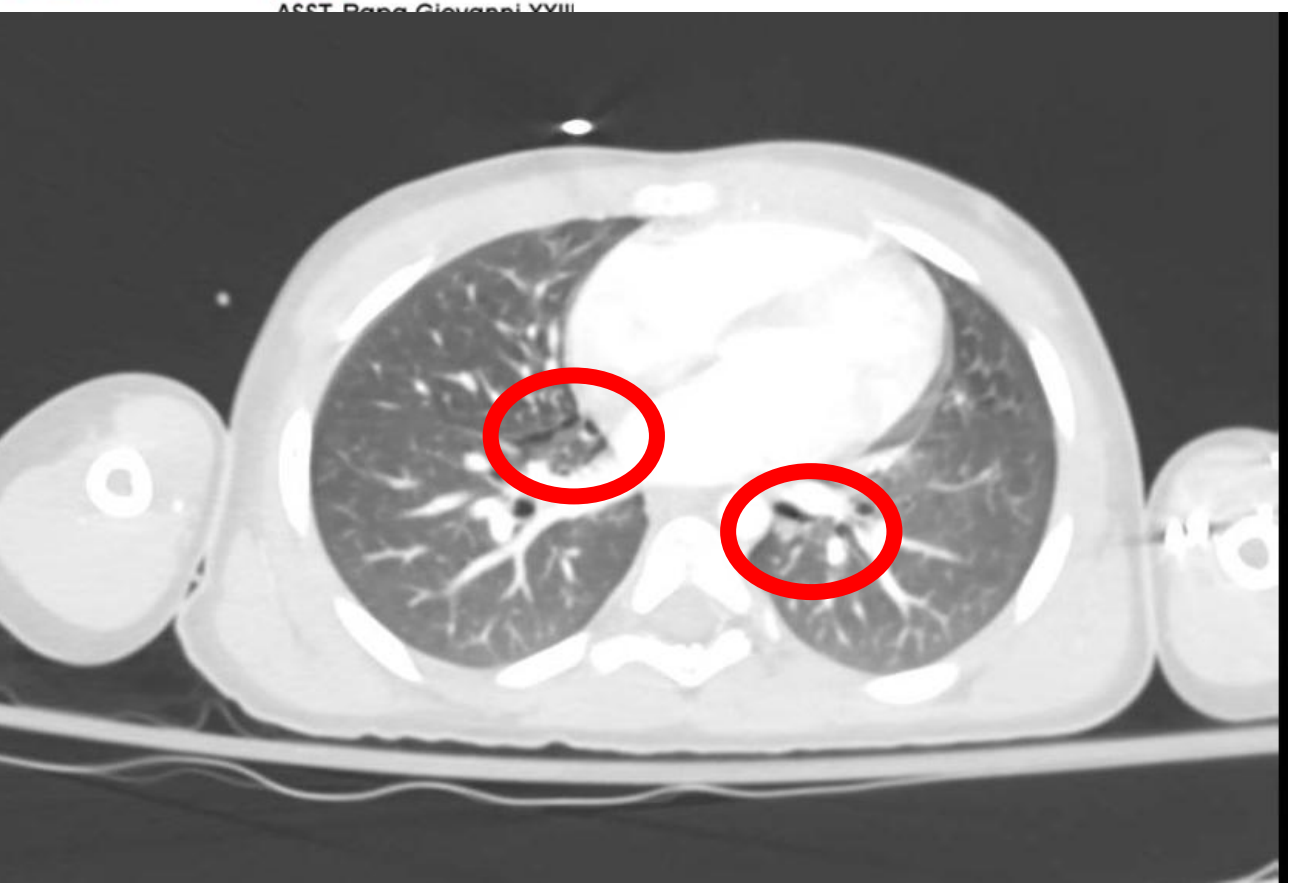
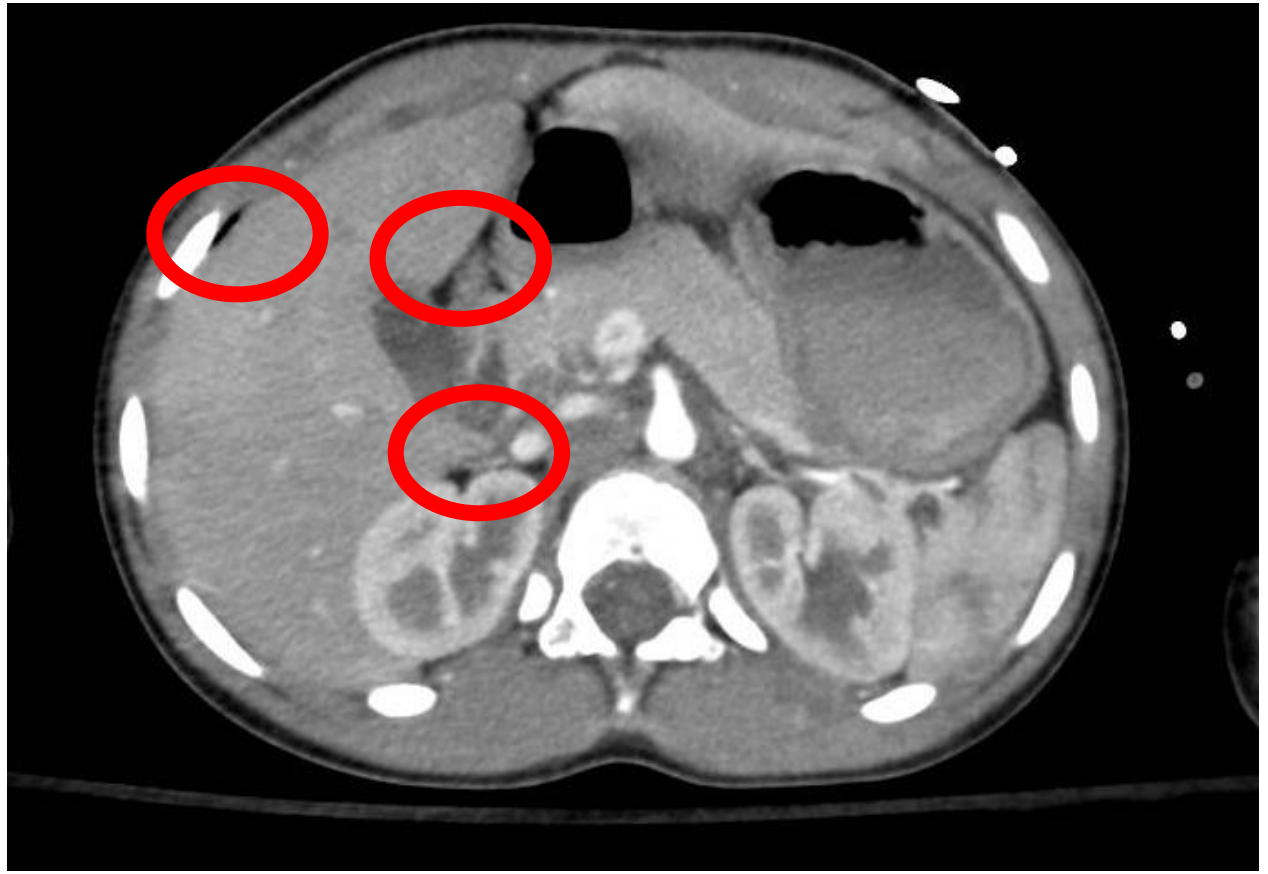
T: 0





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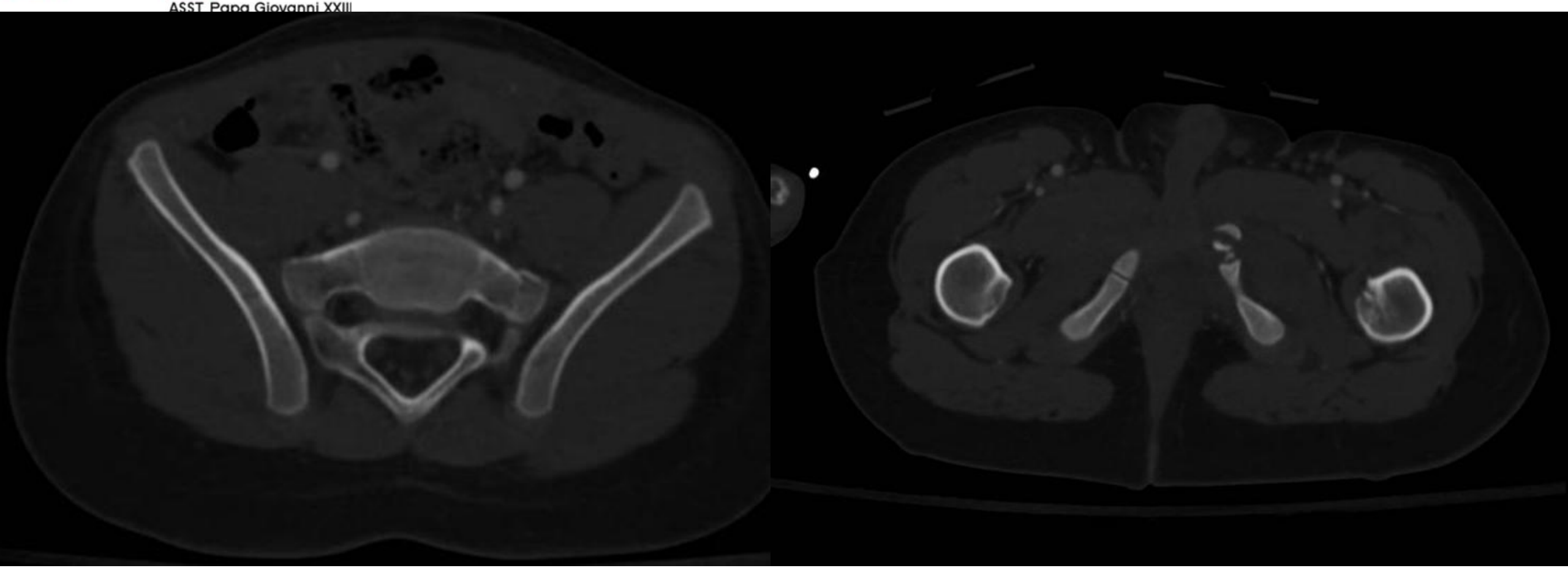

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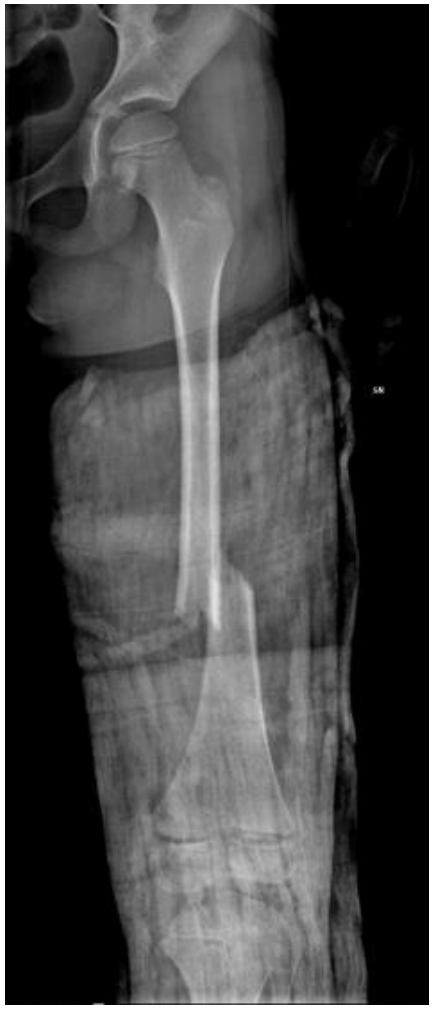

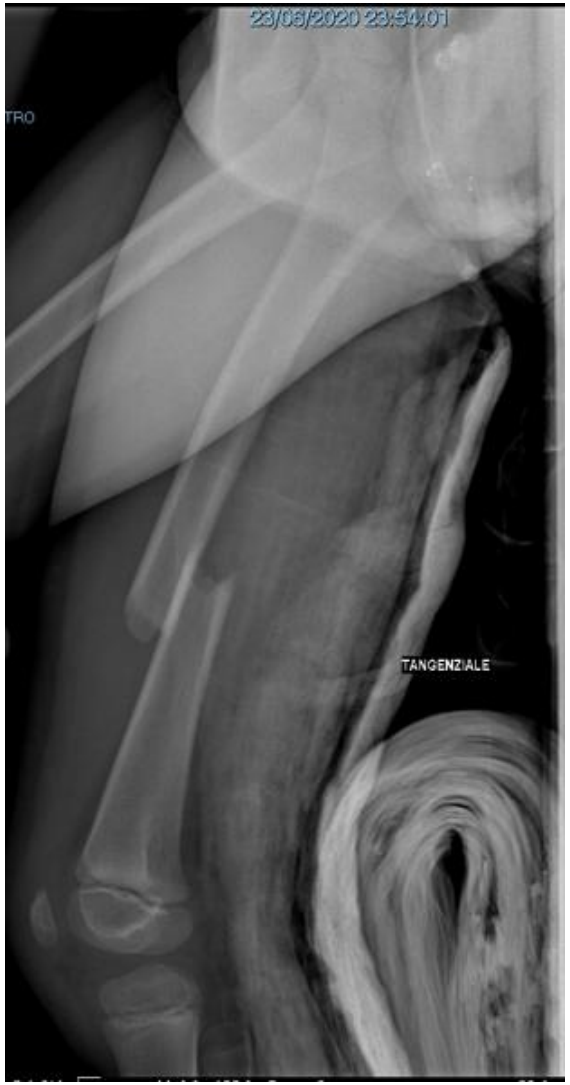

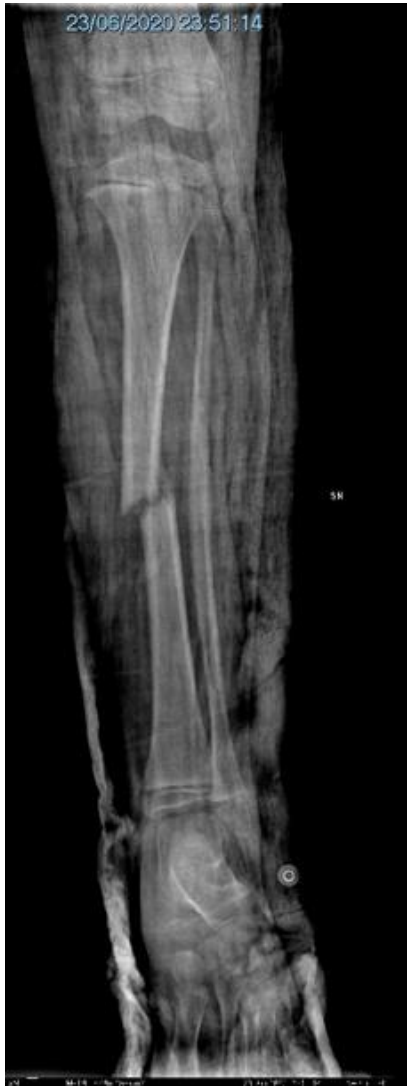

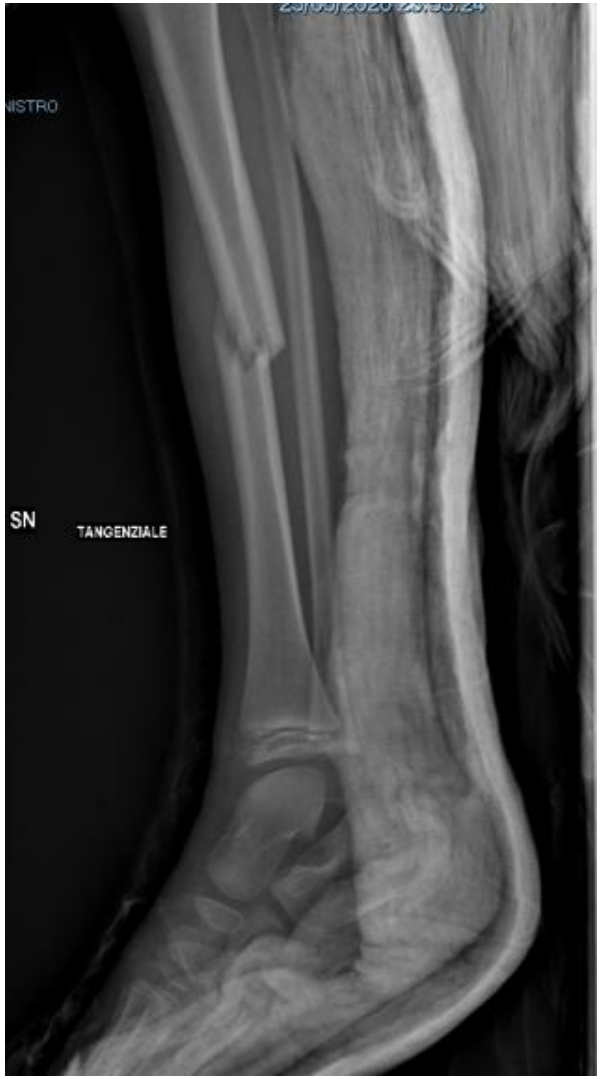

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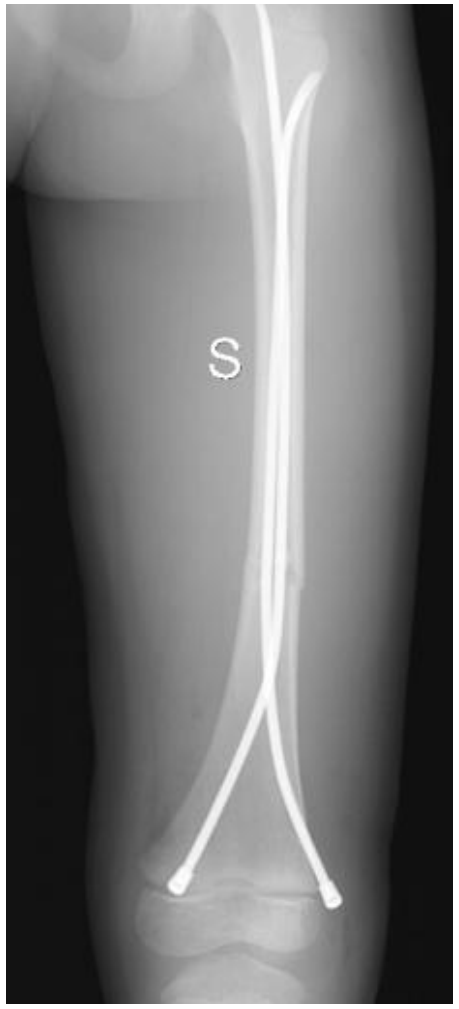

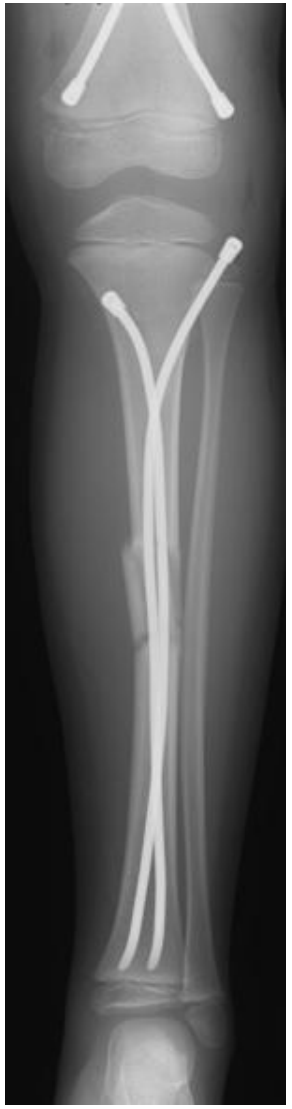

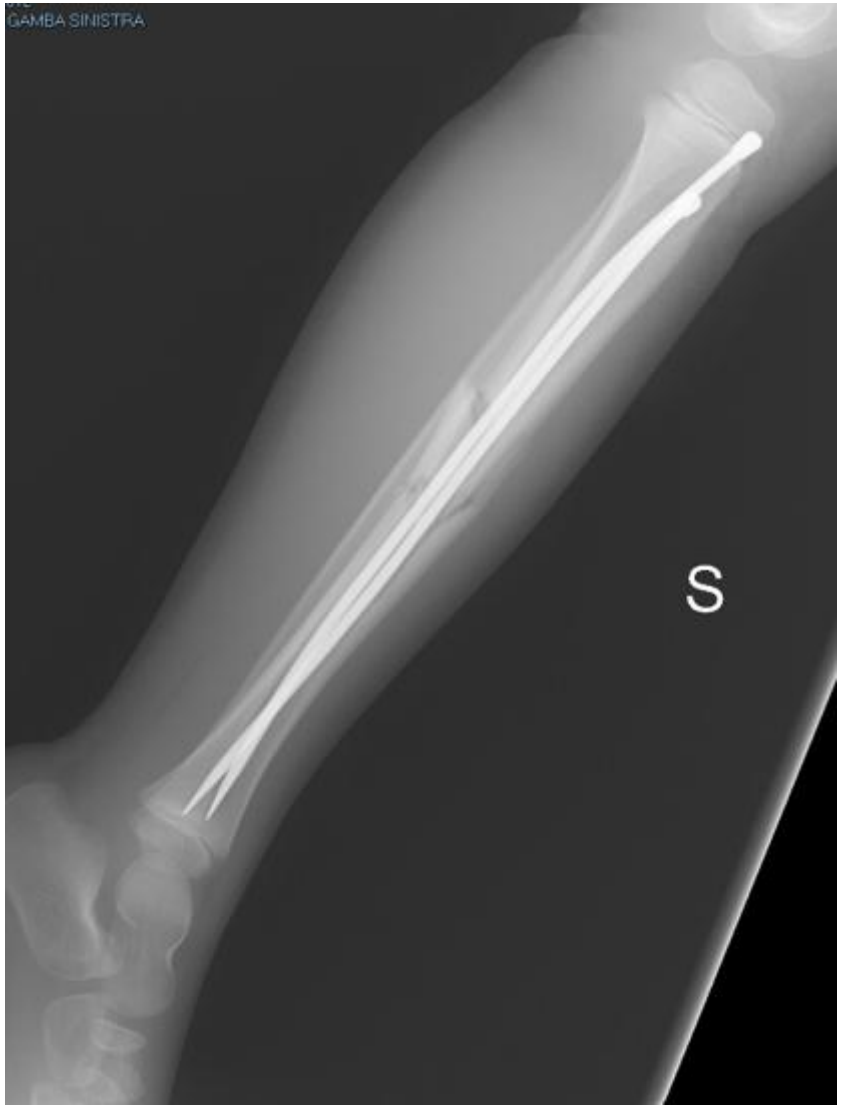

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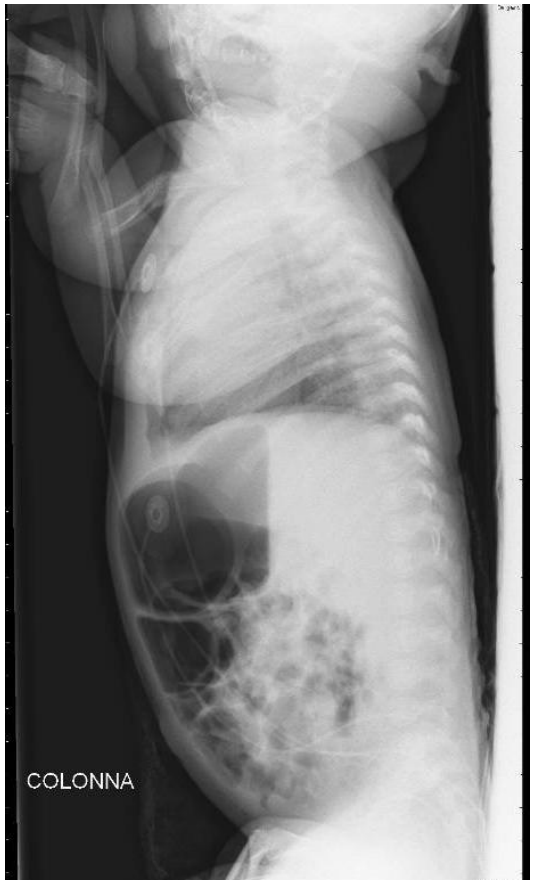
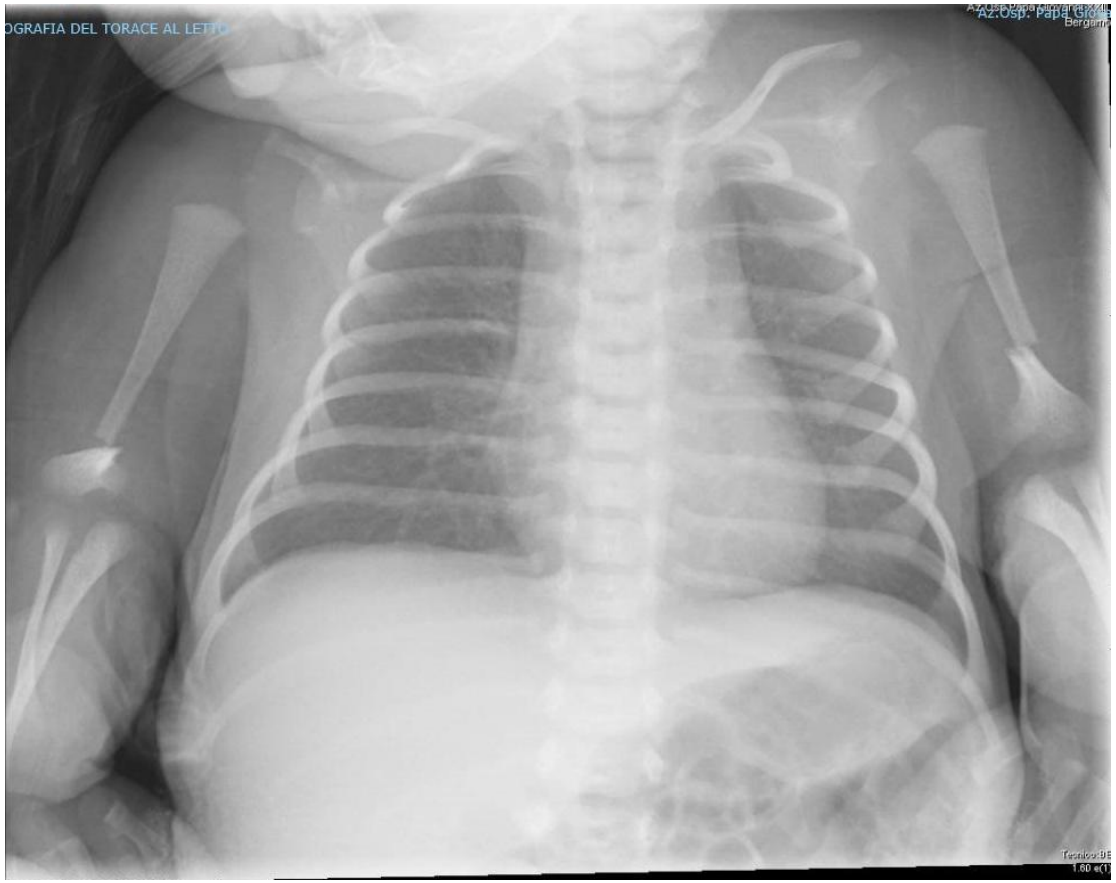
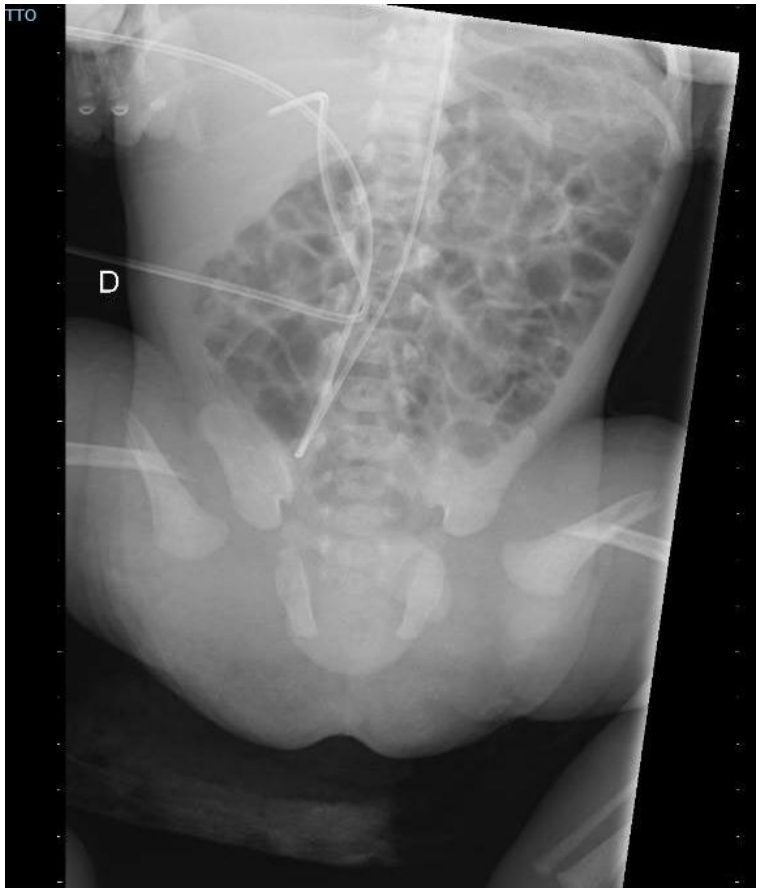
JM _ 1D _ M







Urg Caesarean Delivery _ Respiratory distress -> NICU

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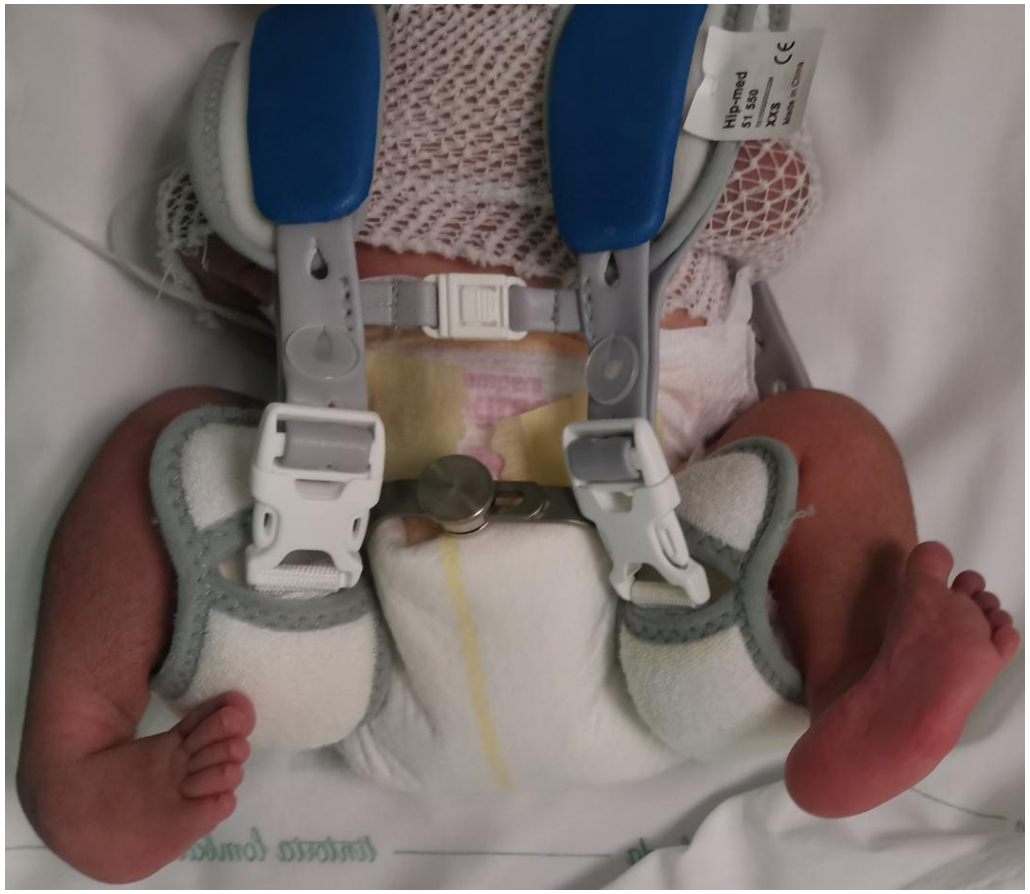

Caesarean Delivery _ Workup for OI / AMC [& Co]

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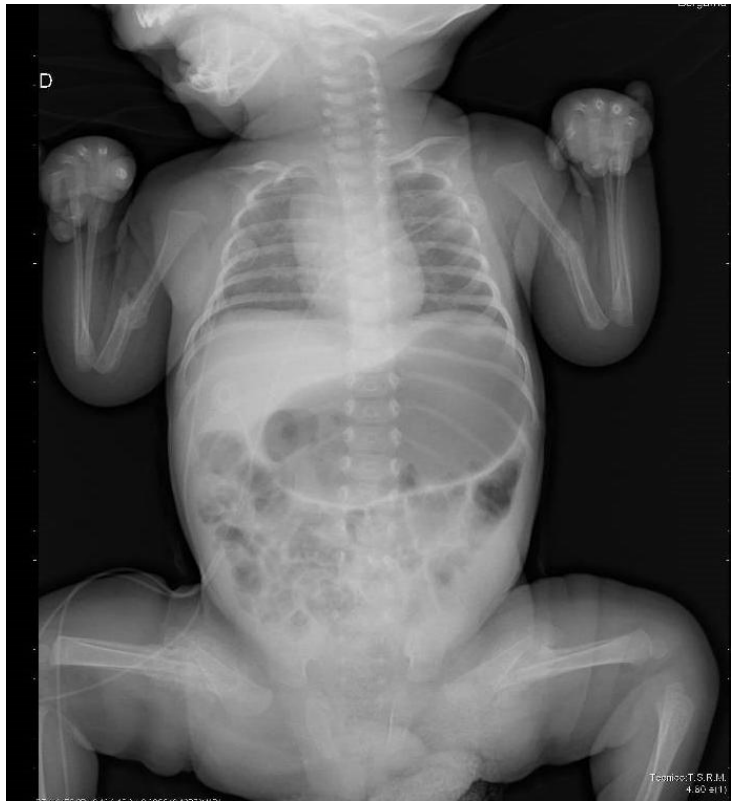

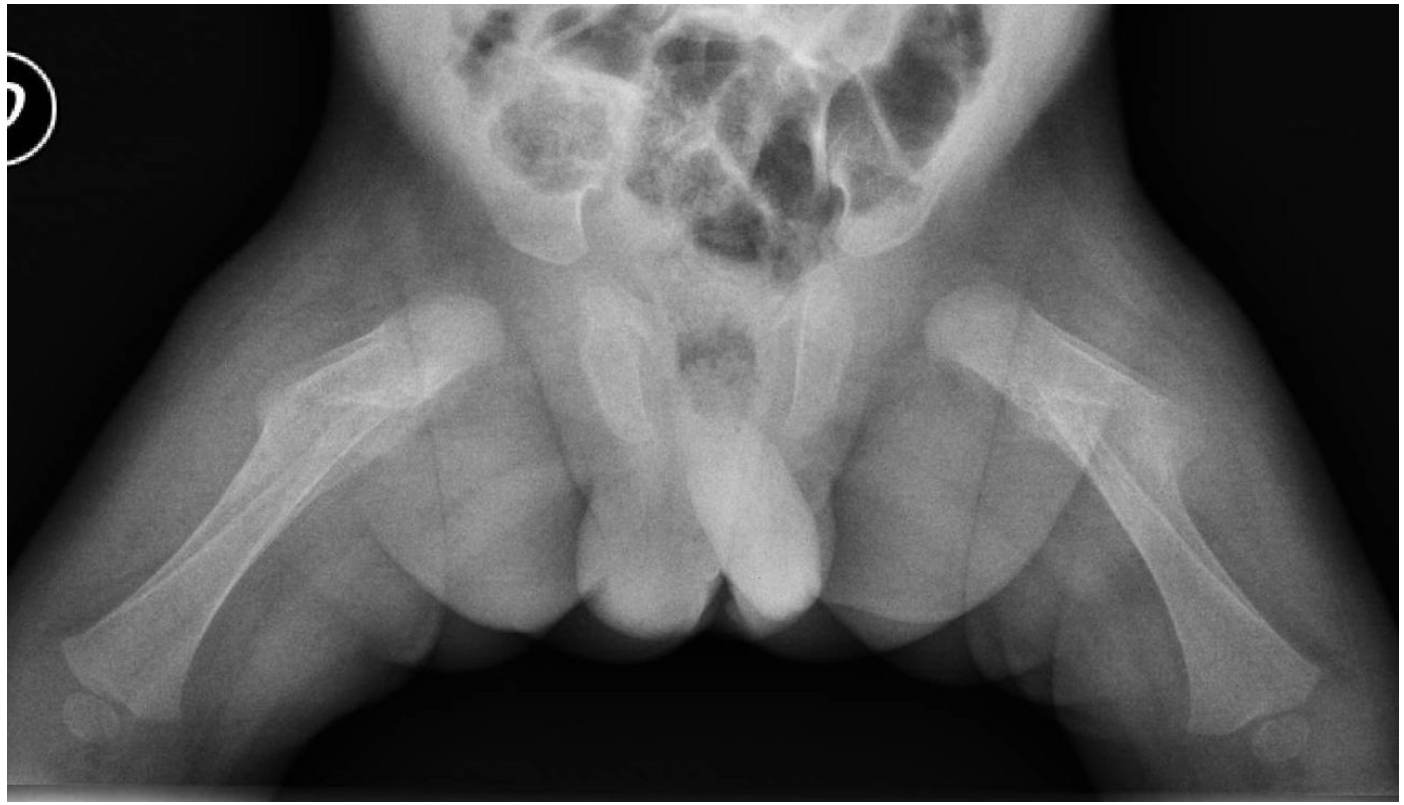

Caesarean Delivery _ Workup for OI / AMC [& Co]

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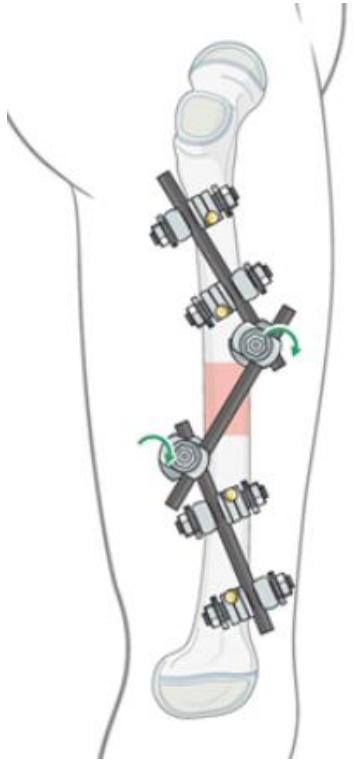
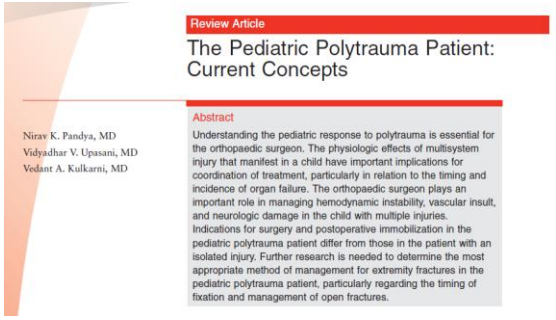
DCO ≠ ExFix





Review Article

The Pediatric Polytrauma Patient: Current Concepts

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Das schwer verletzte Kind

B. Auner, H. Jakob, I. Marzi

Klinik für Unfall-, Hand- und Wiederherstellungschirurgie, Universitätsklinikum Frankfurt am Main

Review Article

Early total care to early appropriate care - What every anesthesiologist must know!

Babita Gupta, Kamran Farooque[1]

Departments of Anesthesiology, Pain Medicine and Critical Care and [1]Orthopaedics, Jai Prakash Narayan Apex Trauma Centre, All India Institute of Medical Sciences, New Delhi, India

TECO

- **DCO IS A METHOD, NOT AN IMPLANT!** **DCO ≠ EXFX**
- **↓ AGE -> DCO ≈ DEFINITIVE TREATMENT**
- **ESIN / BRACES MIGHT BE CONSIDERED "DCO" (EXPLICIT IN PROTOCOLS!)**

Q?

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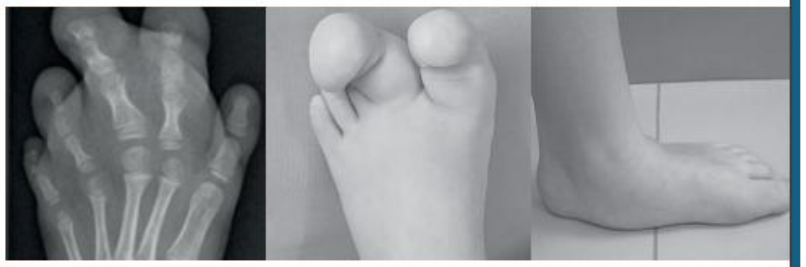
EPOS
European Paediatric Orthopaedic Society

EPOS BAT Advanced Course

Vienna, Austria : 2-3 October 2025



Paediatric Foot & Ankle Surgery

Vienna, Austria: 2-3 October 2025

info www.epos.org/education

Topics Covered

- The Child Foot. Examination Techniques
- Congenital Malformations
- Clubfoot. Always Ponseti?
- Severe Paediatric Foot Disorders
- Flexible Flat Foot. What's New?
- Foot Disorders in Adults
- The Rigid Flatfoot
- The Neurological Foot
- Tumors in Child Foot
- Juvenile Hallux Valgus
- Foot and Ankle Sports-related Injuries in Children
- What's the Role of Arthroscopy in Management of Acute Ankle Fracture in Children?

SAVE THE DATE

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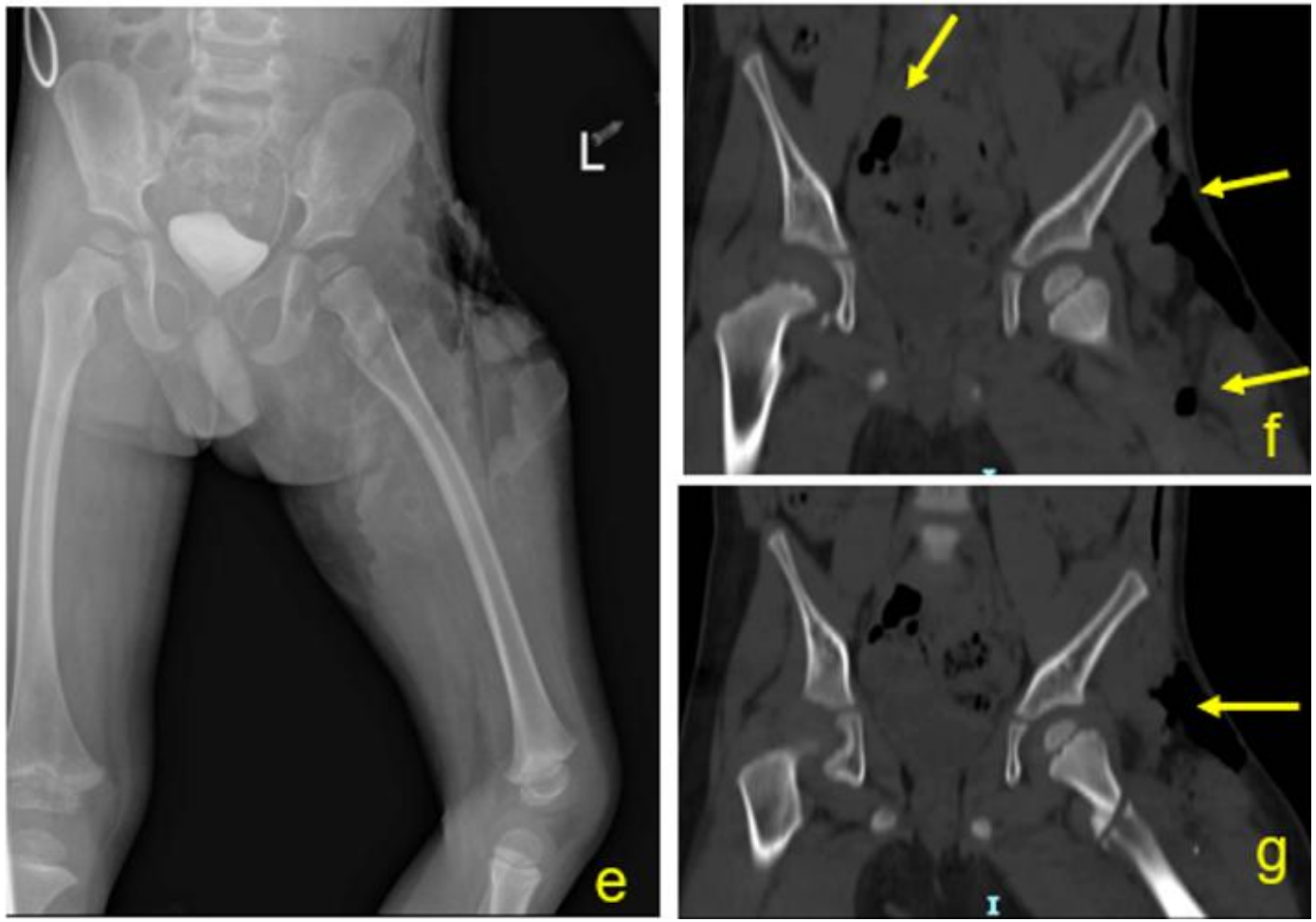
BP _ 3y _ M

T: 0
Industrial forklift accident
APR: /

Hypo Shock classe II
Responder



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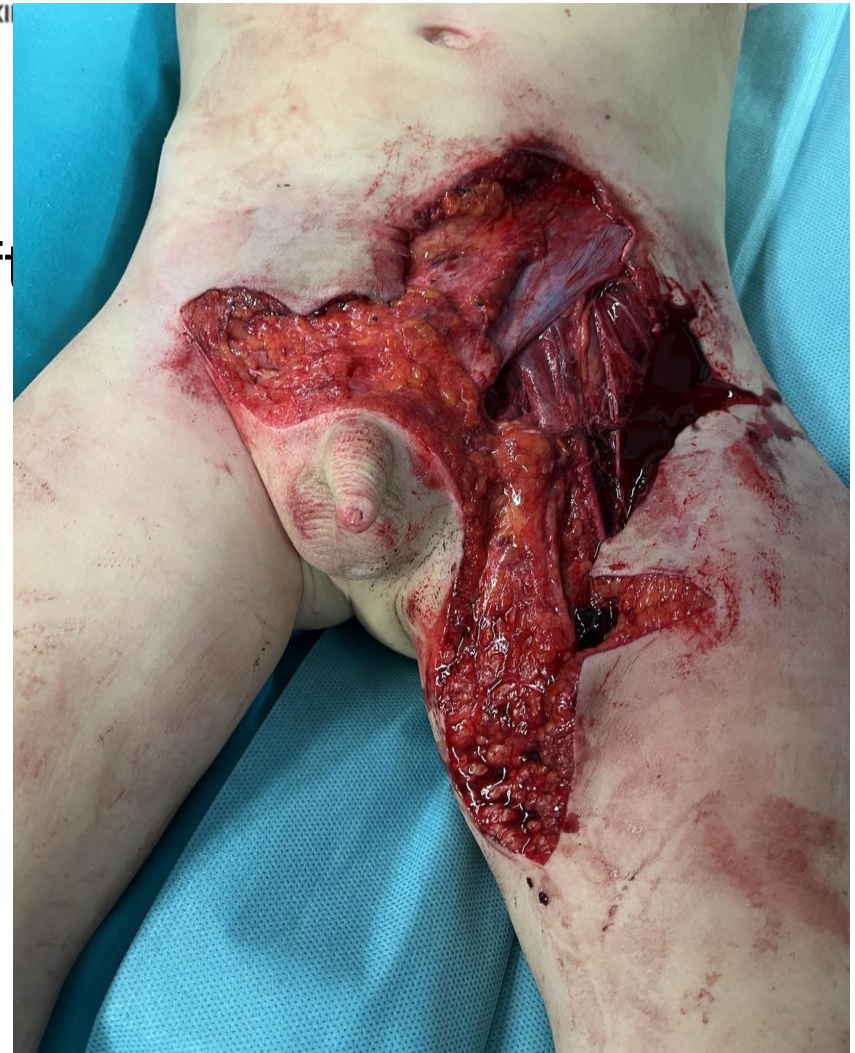
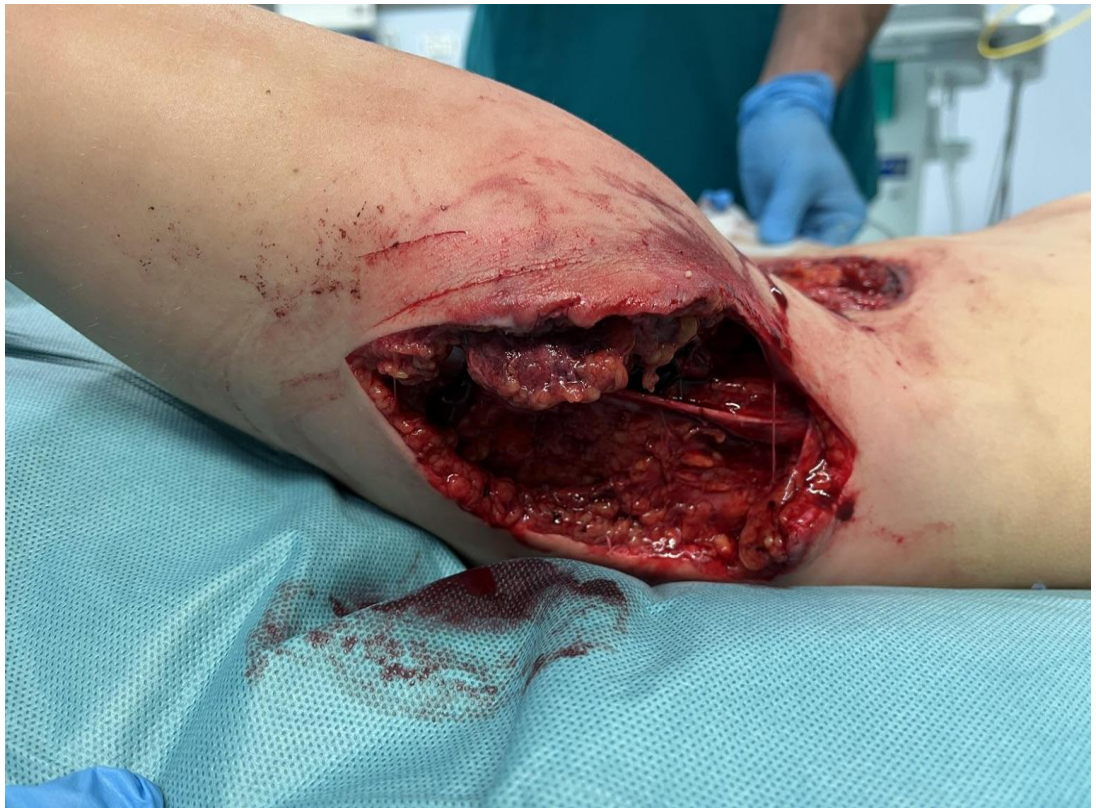
BP _ 3y _ M

T: 0
Industrial forklift
APR: /





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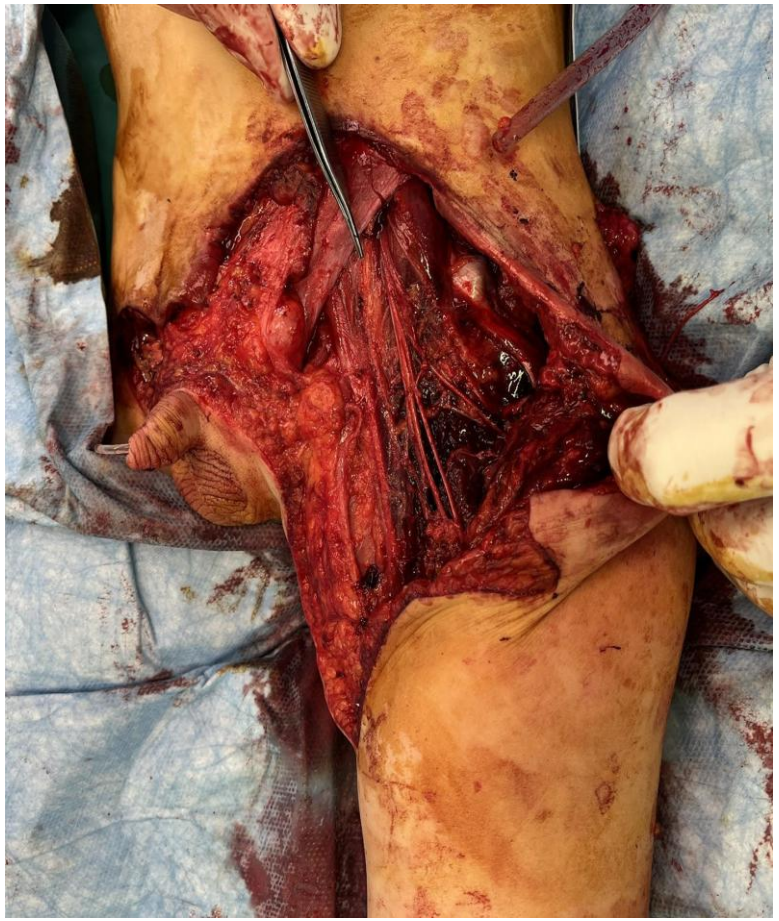
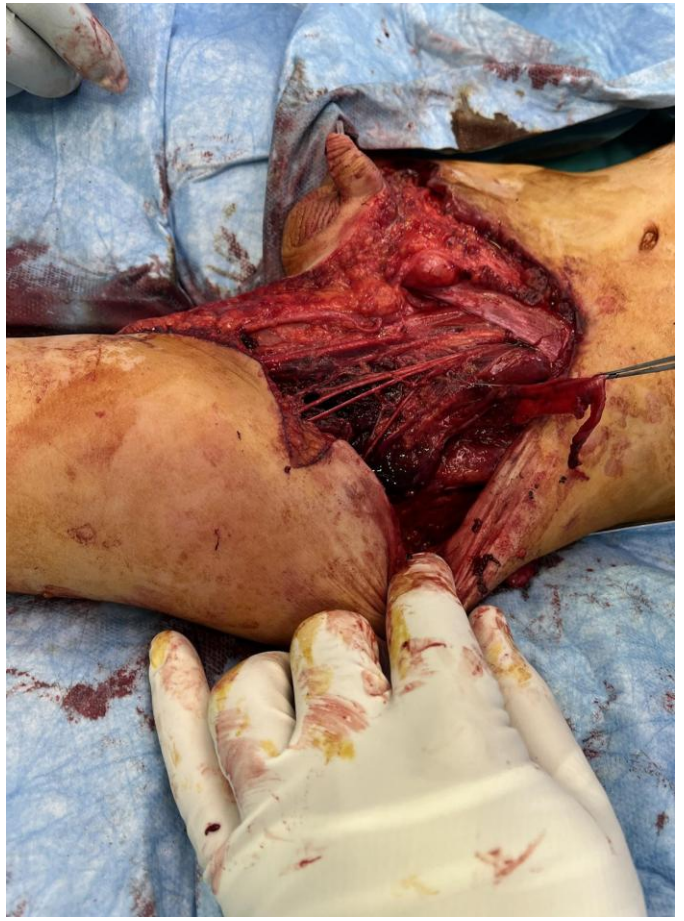
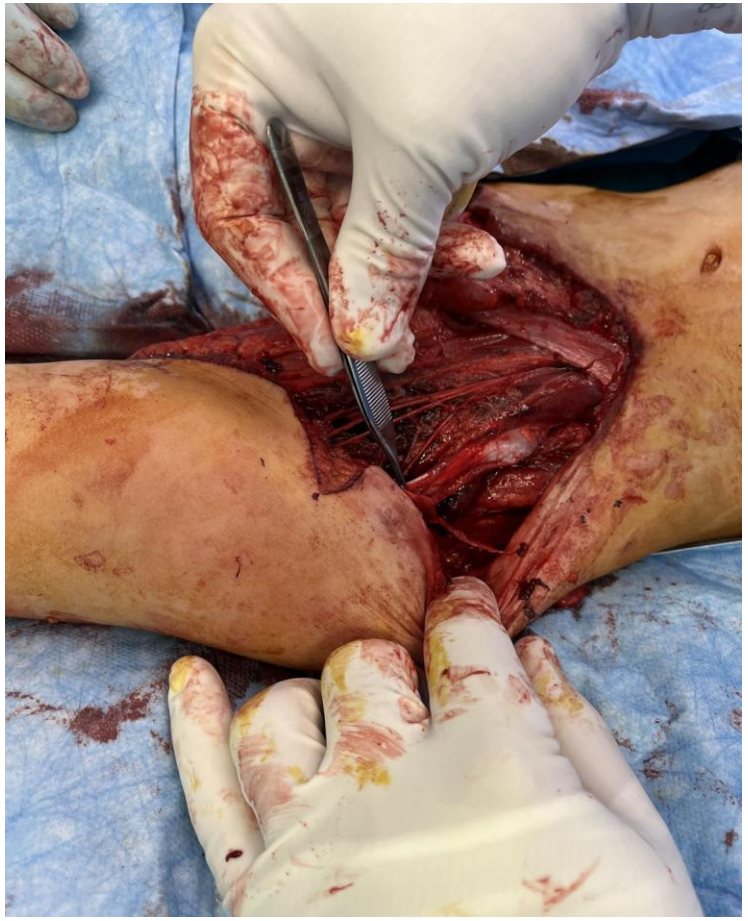
BP _ 6y _ M







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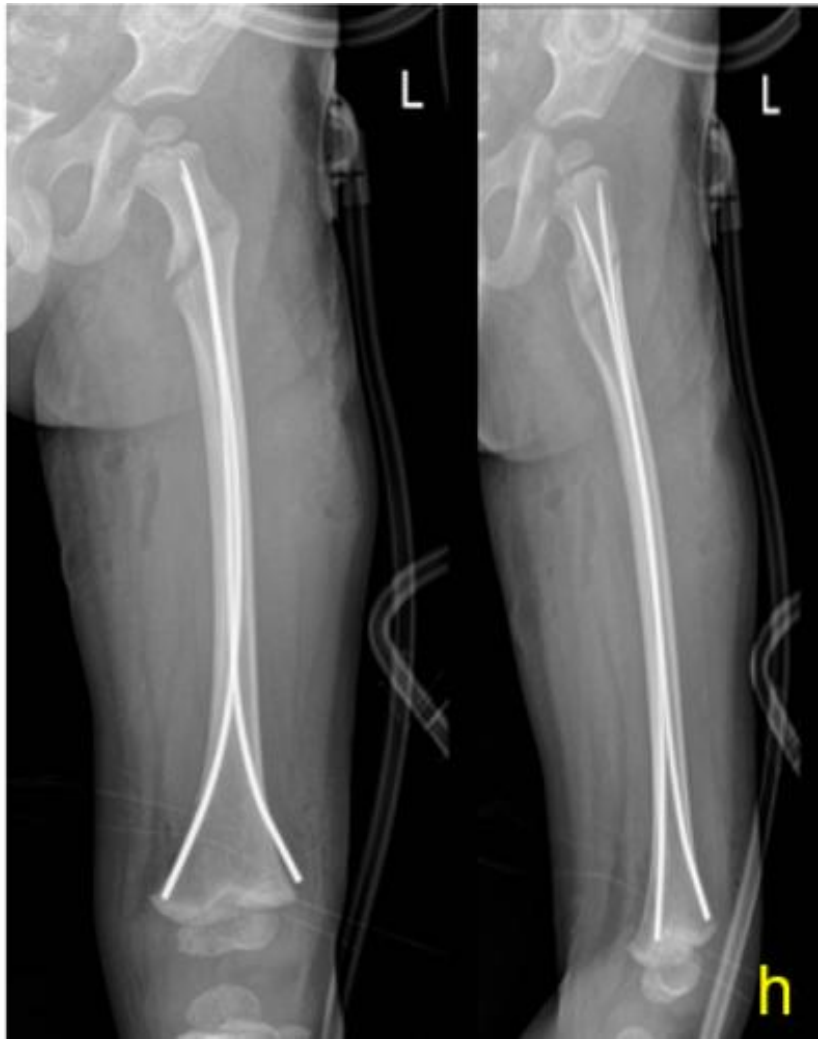
BP _ 6y _ M



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