

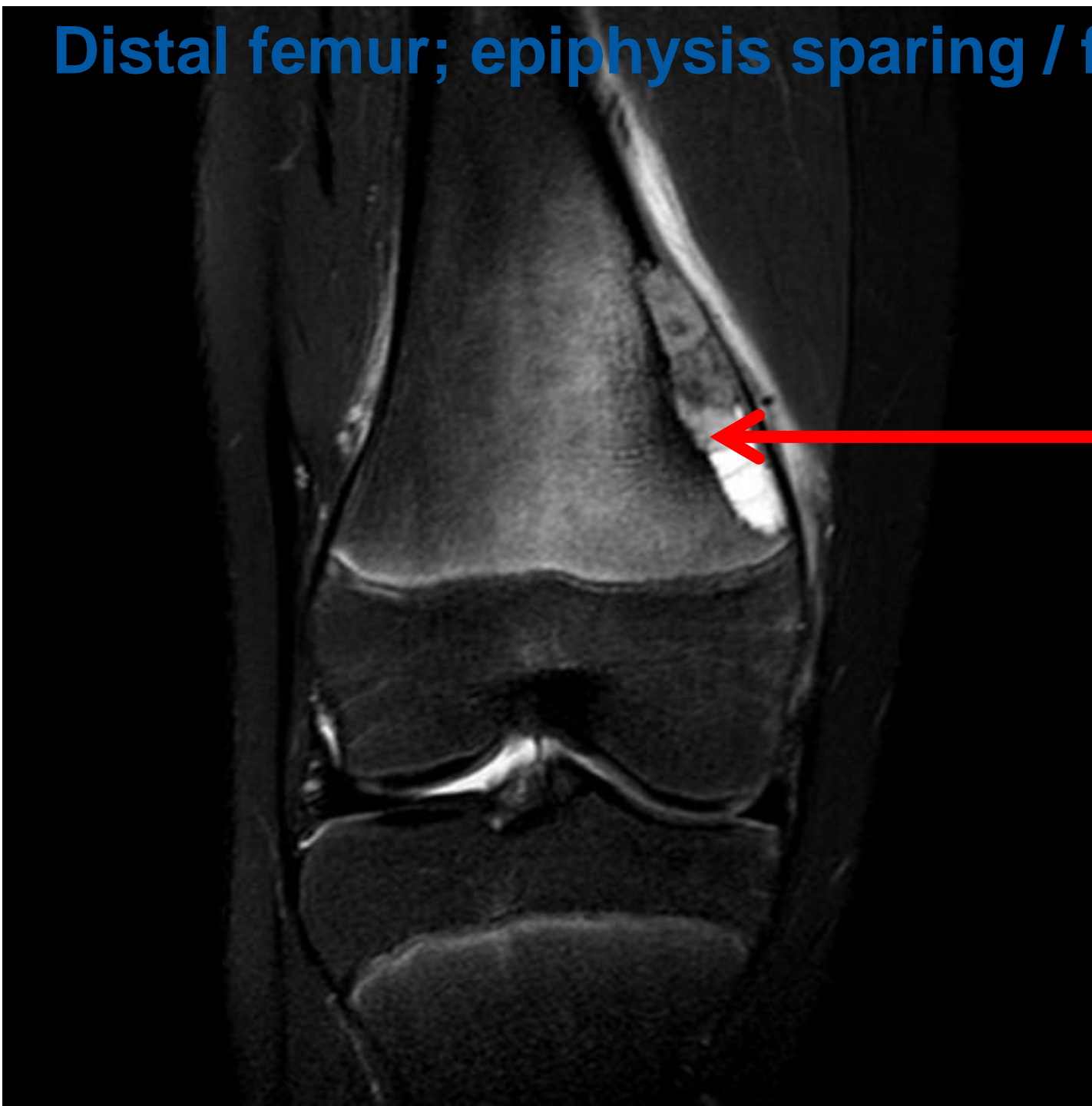
Distal femur; epiphysis sparing / f / 10 yo

CC: pain on R distal femur for weeks. Initial biopsy inconclusive, but assumed OGS

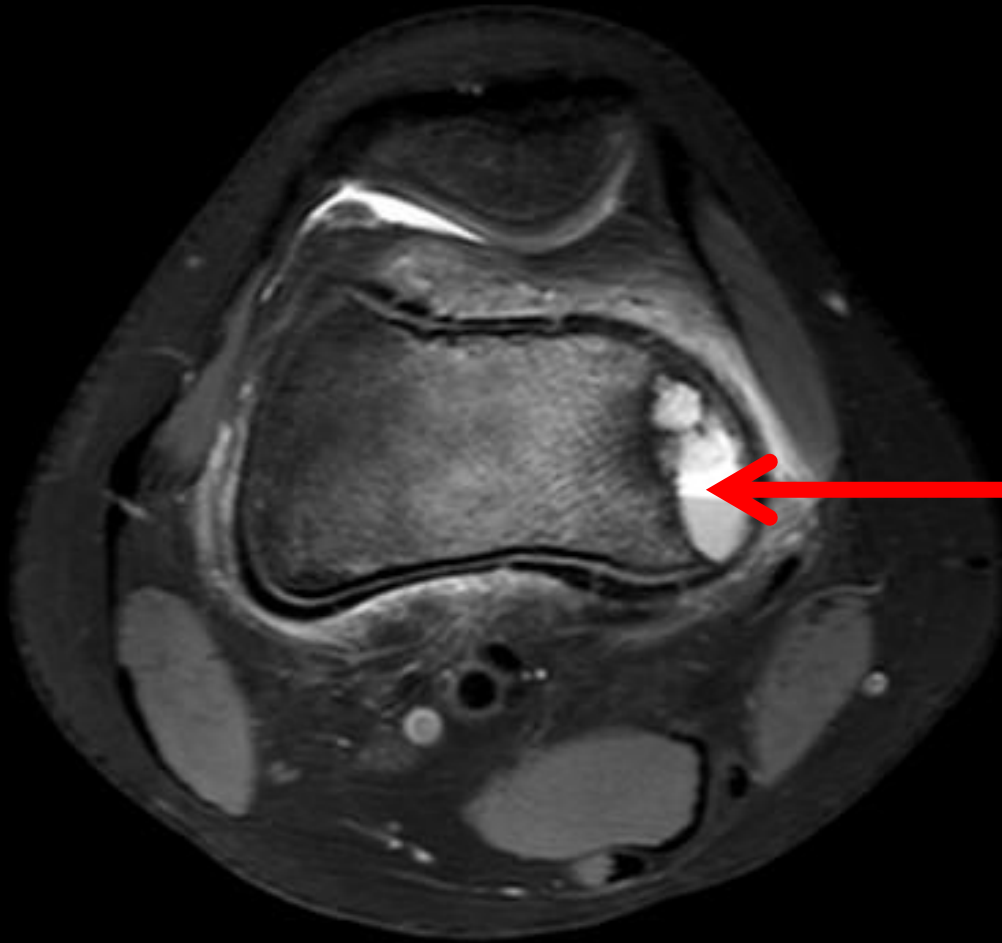
PMH: uneventful



Distal femur; epiphysis sparing / f / 10 yo



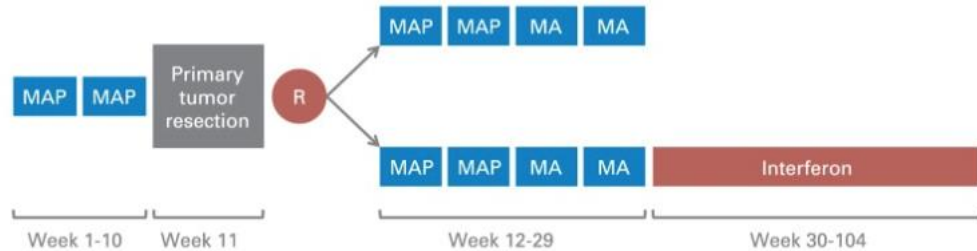
Distal femur; epiphysis sparing / f / 10 yo



Distal femur; epiphysis sparing / f / 10 yo



Interventions



M Methotrexate 12 g/m²
A Doxorubicin 75 g/m²
P Cisplatin 120 g/m²

Pegylated IFN- α -2b

Dosing

Starting at 0.5 μ g/kg/week (max. 50 μ g) SC \times 4 weeks
Escalation to 1.0 μ g/kg/week (max. 100 μ g) SC
if well tolerated

Timing

Once per week after chemotherapy until week 104

R Random assignment

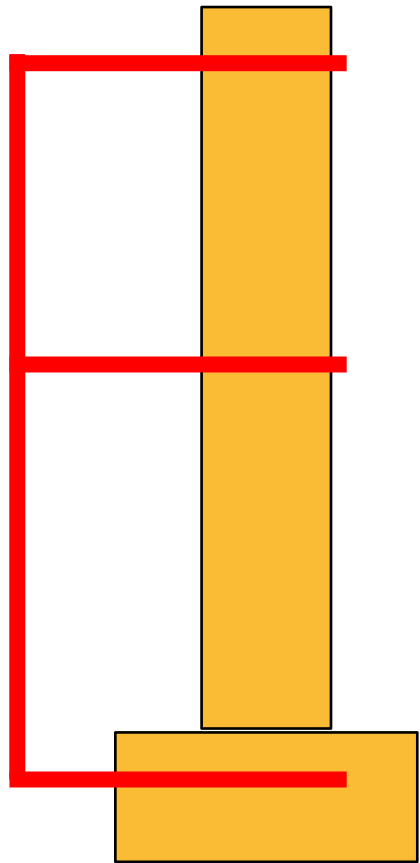
Jan 2, 2017

→ Osteoblastom- Variante,
OGS

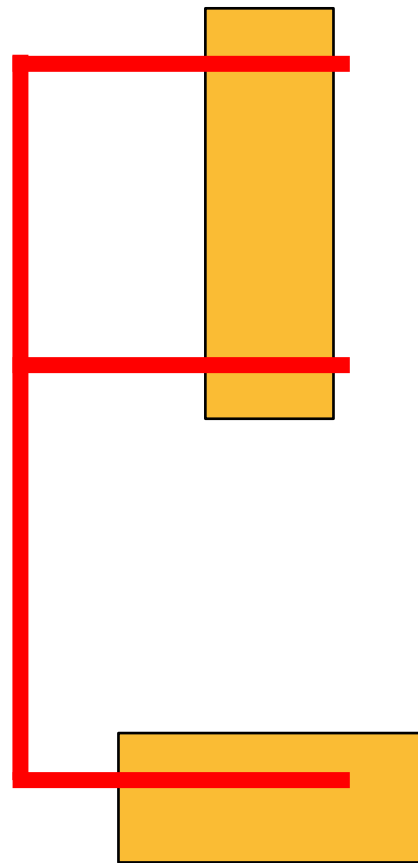
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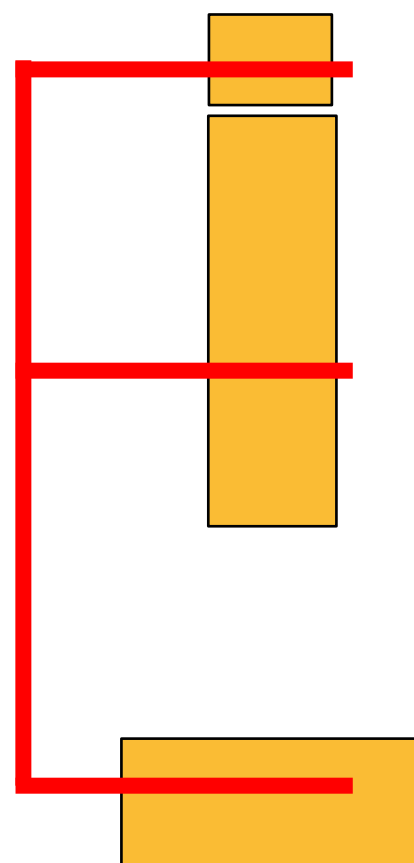
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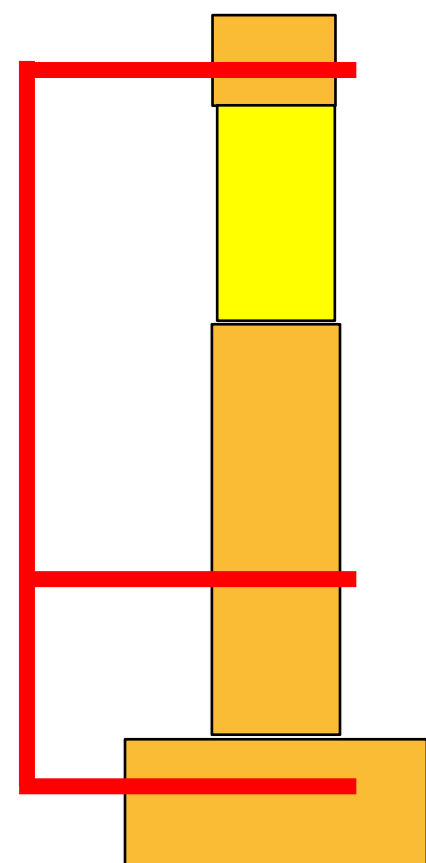
Fixateur montage



Resection of tumor



OT proximal femur



Transport of
intercalary segment
&
new bone formation

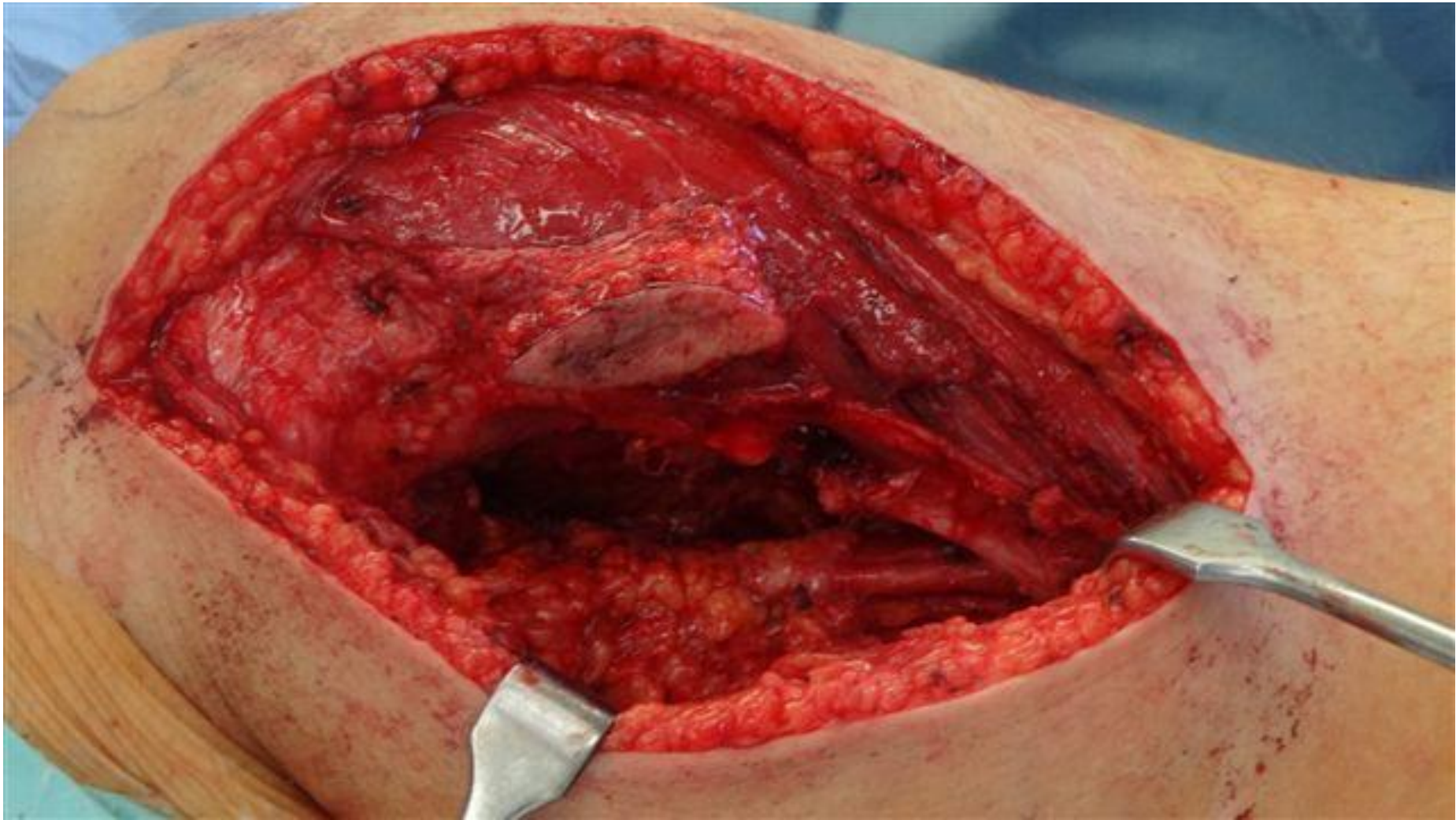
Distal femur; epiphysis sparing / f / 10 yo



March 23, 2017

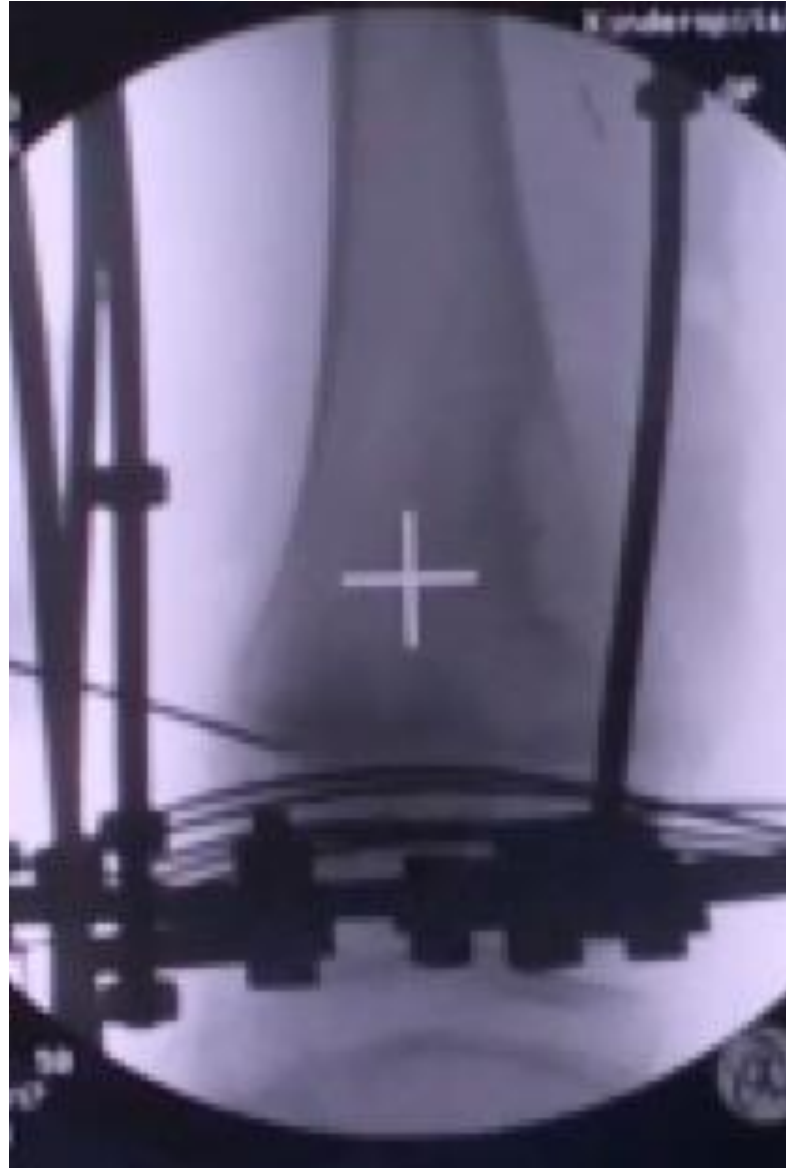


Distal femur; epiphysis sparing / f / 10 yo



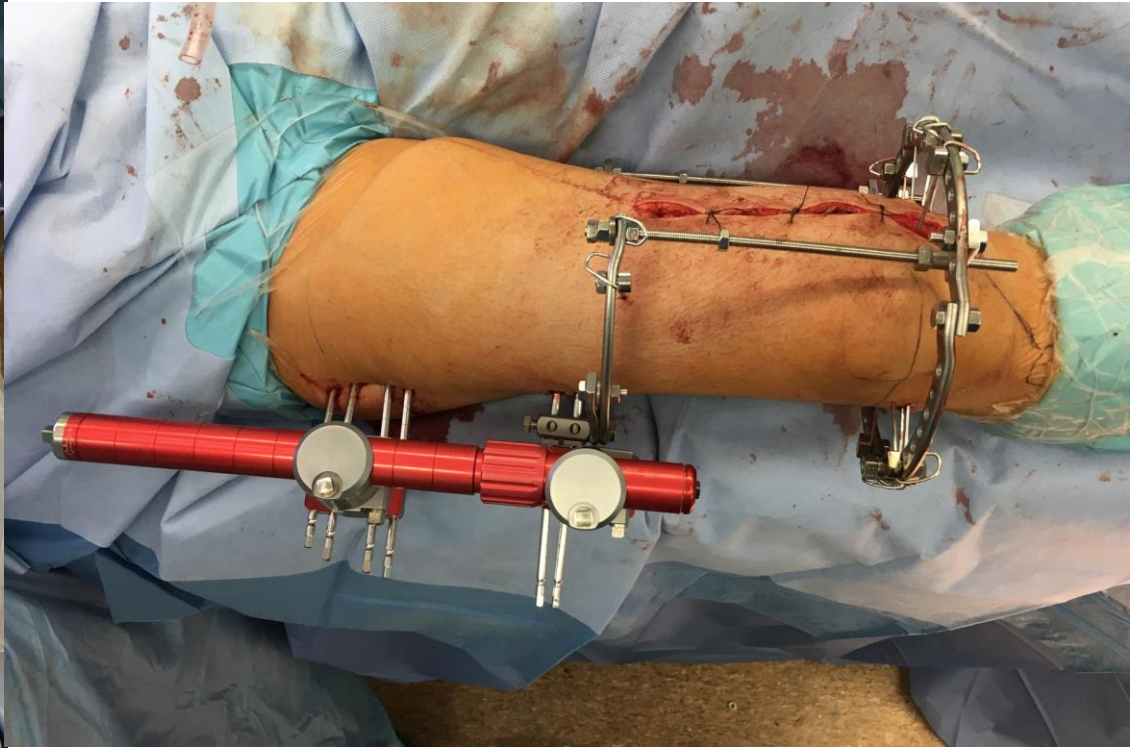
March 23, 2017

Distal femur; epiphysis sparing / f / 10 yo



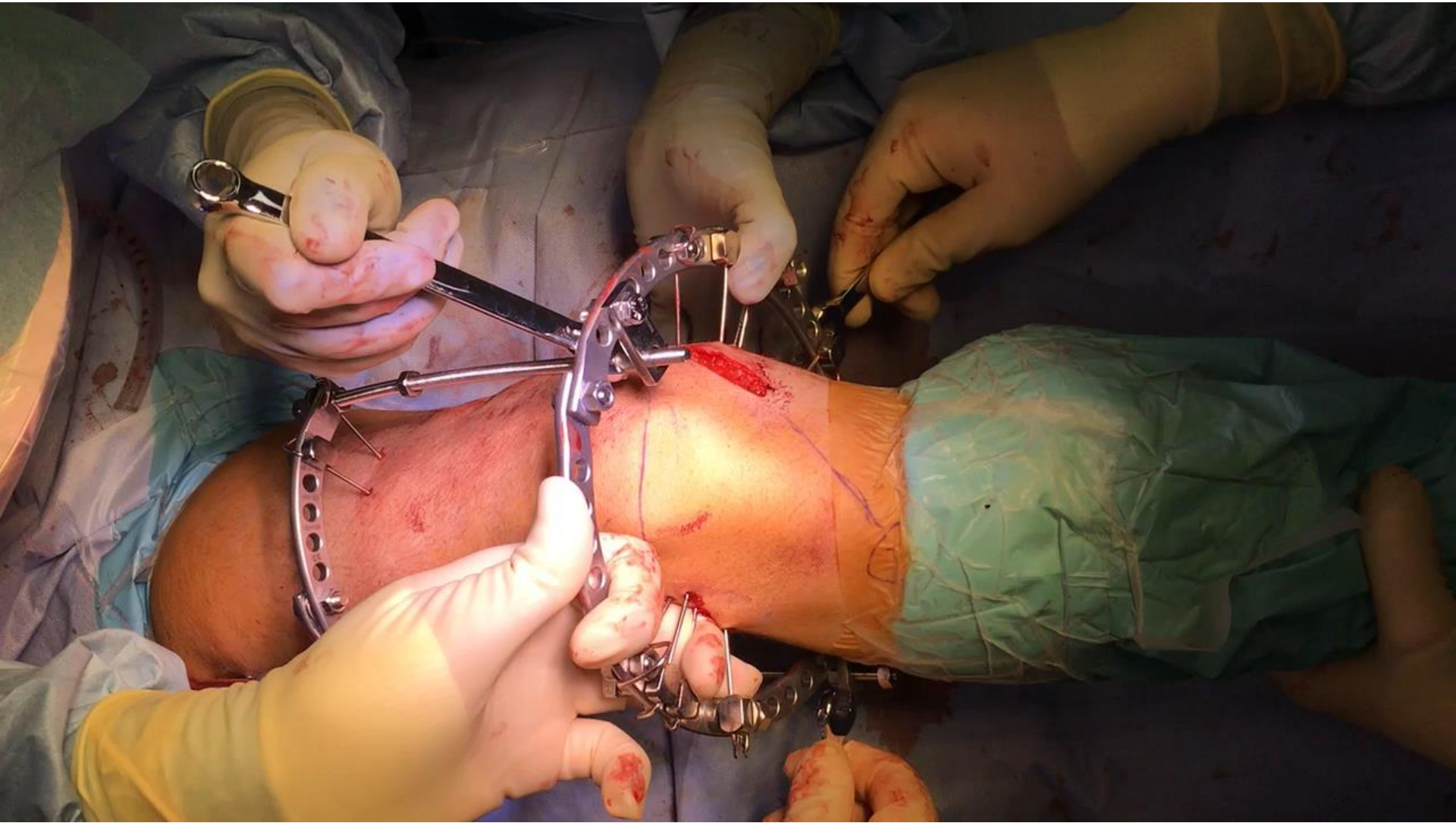
March 23, 2017

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Distal femur; epiphysis sparing / f / 10 yo



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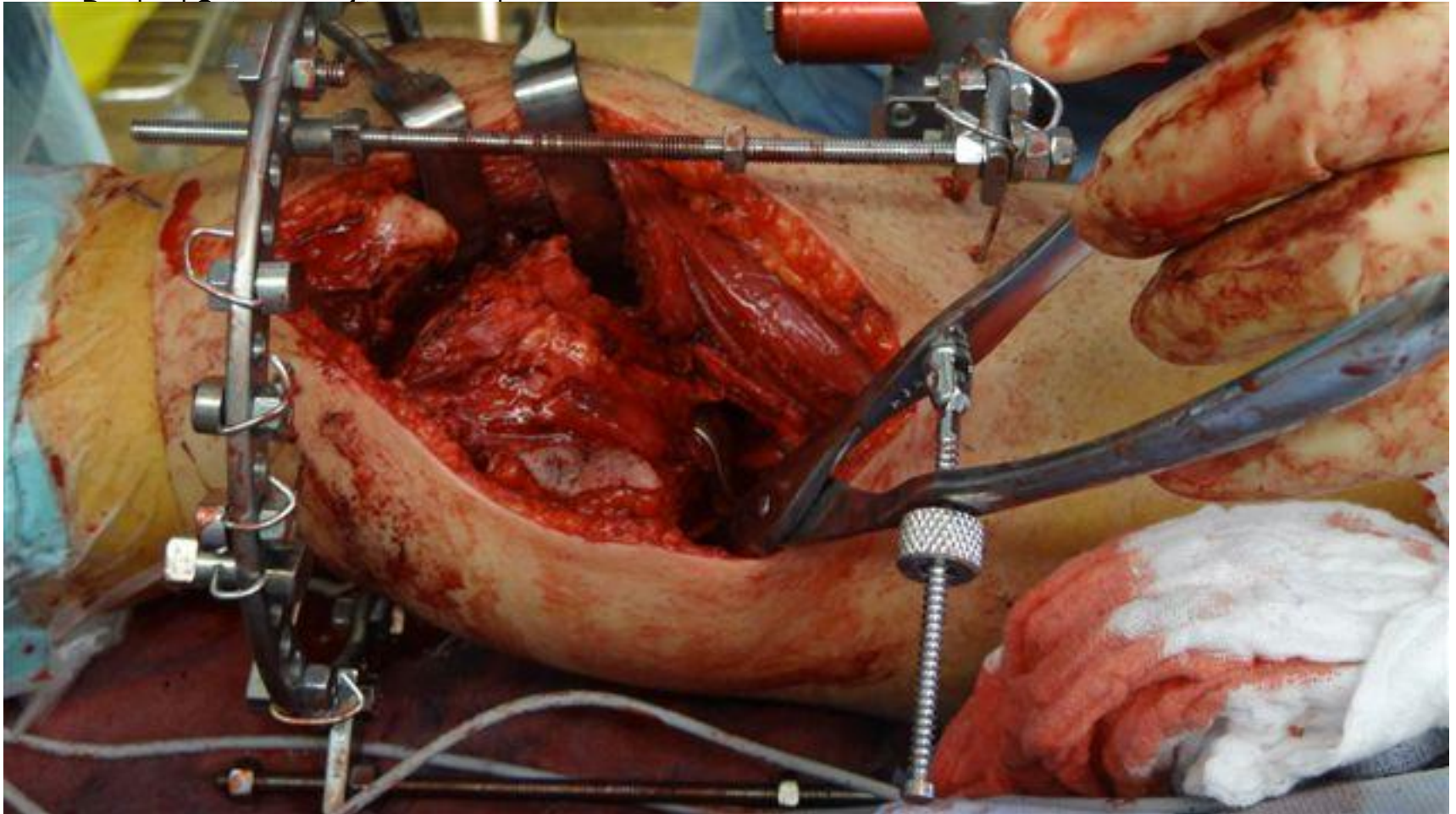
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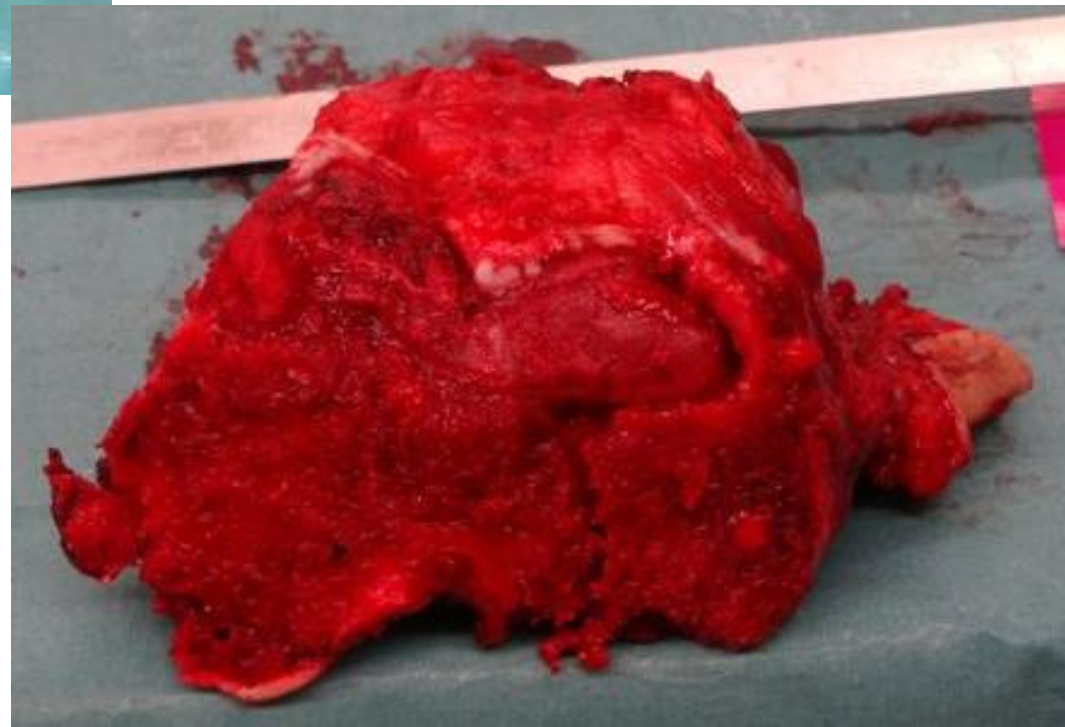
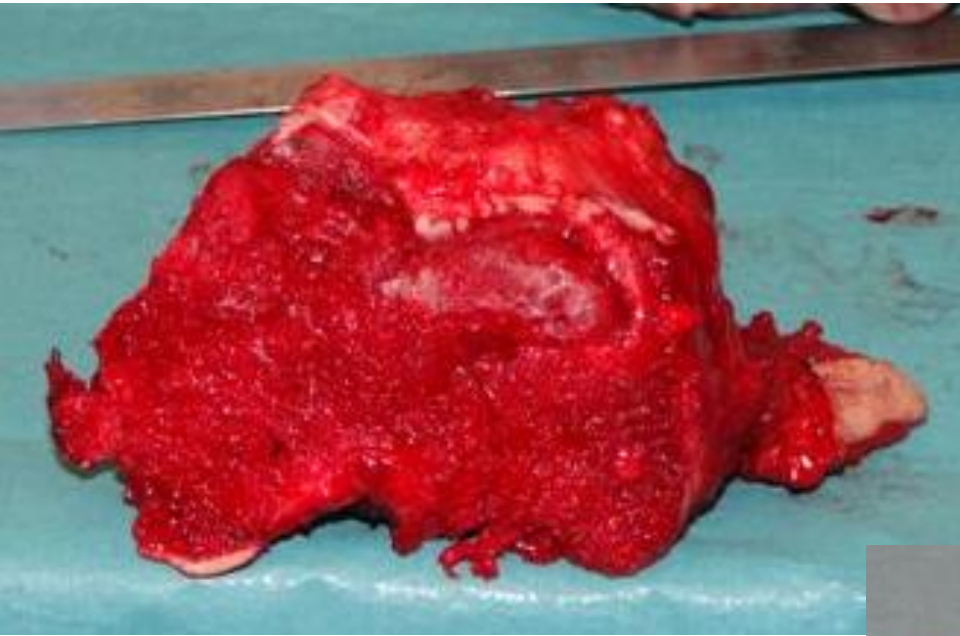
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Proximal OT



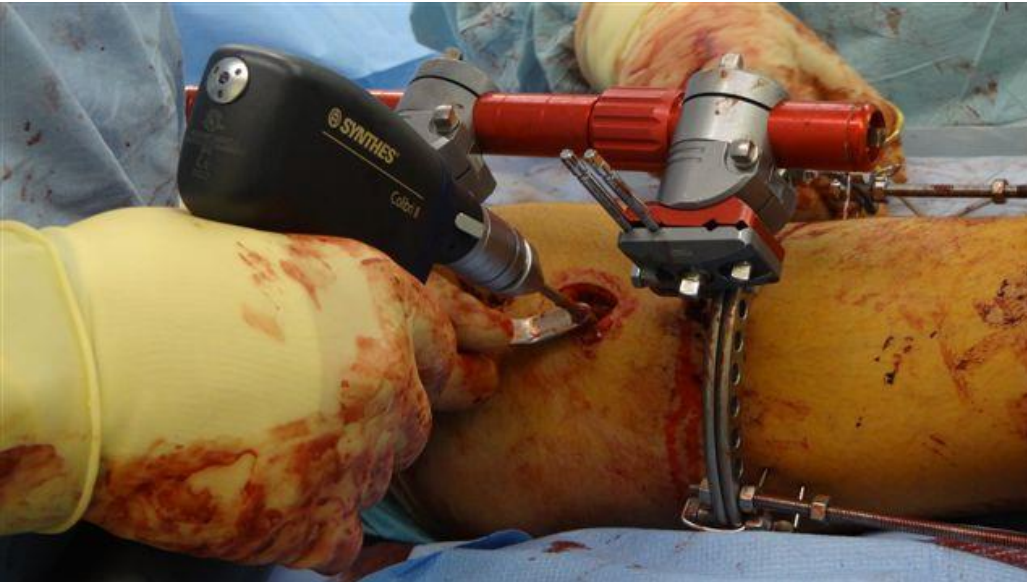
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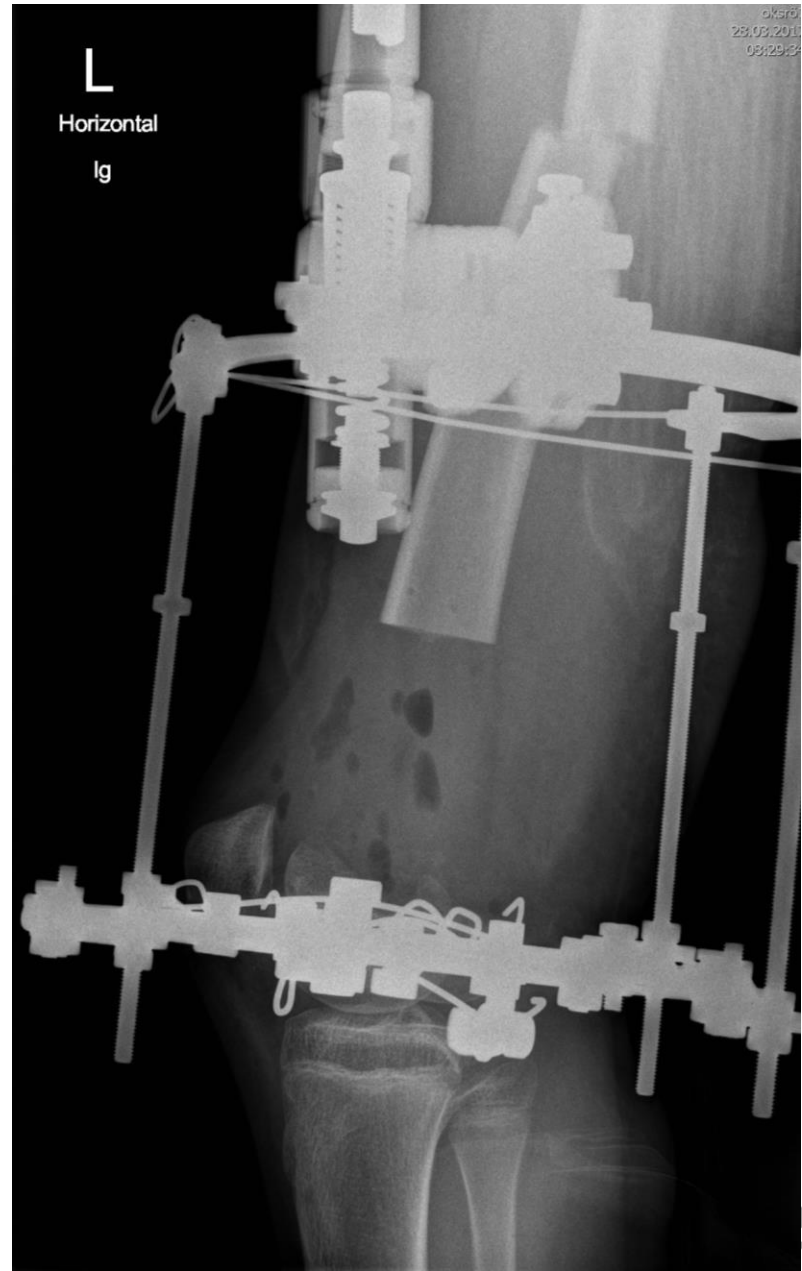
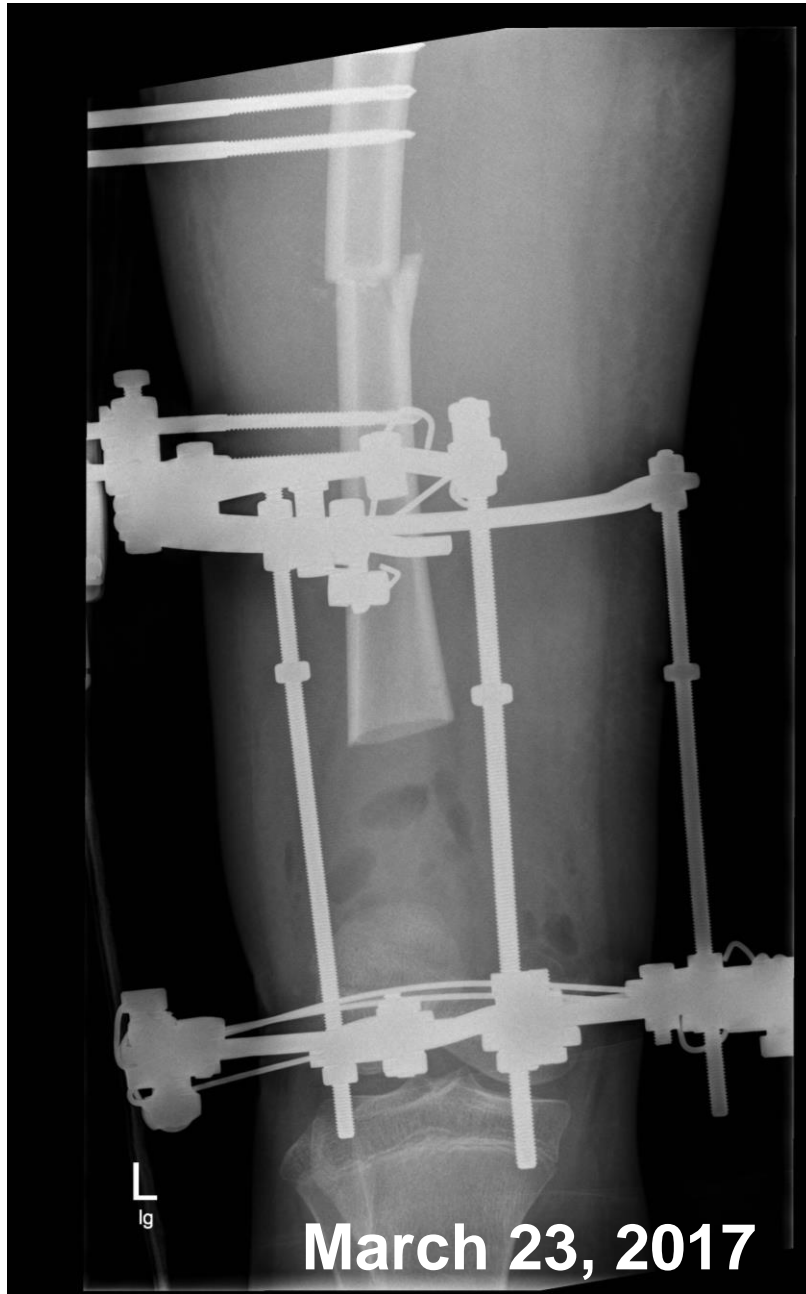
March 23, 2017

Distal femur; epiphysis sparing / f / 10 yo



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Distal femur; epiphysis sparing / f / 10 yo



Distal femur; epiphysis sparing / f / 10 yo



March 05, 2018

Distal femur; epiphysis sparing / f / 10 yo



March 05, 2018

CLINICAL RESEARCH

Physéal Distraction for Joint Preservation in Malignant Metaphyseal Bone Tumors in Children

Michael Betz MD, Charles E. Dumont MD,
Bruno Fuchs MD, G. Ulrich Exner MD

Abstract

Background Physéal distraction facilitates metaphyseal bone tumor resection in children and preserves the adjacent joint. The technique was first described by Cañadell. Tumor resection procedures allowing limb-sparing reconstruction have been used increasingly in recent years without compromising oncologic principles.

Questions/purposes We report our results with Cañadell's technique by assessing tumor control, functional outcome, and complications.

Methods Six consecutive children with primary malignant metaphyseal bone tumors underwent physéal

distraction as a part of tumor resection. Tumor location was the distal femur in four patients, the proximal humerus in one patient, and the proximal tibia in one patient. The functional outcome was evaluated after a minimum of 18 months (median, 62 months; range, 18–136 months) using the Musculoskeletal Tumor Society (MSTS) score and the Toronto Extremity Salvage Score (TESS).

Results At latest followup, five patients were alive and disease-free and one had died from metastatic disease. All tumor resections resulted in local control; there were no local recurrences. The mean MSTS score was 79% (range, 53%–97%) and corresponding mean TESS was 83% (range, 71%–92%). In one case, postoperative infection required amputation of the proximal lower leg. All physéal distractions were successful except for one patient in whom distraction resulted in rupturing into the tumor. This situation was salvaged by transepiphyseal resection.

Conclusions We consider Cañadell's technique a useful tool in the armamentarium to treat children with malignant tumors that are in close proximity to an open physis.

Level of Evidence Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

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