

Pediatric Tumors and Decision Making

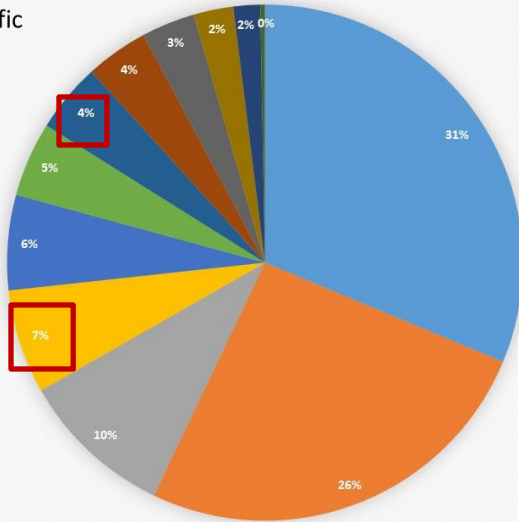
Tae Won Kim, MD

10.6.18

Orthopaedic Rehabilitation Meeting
Cooper Medical School of Rowan University

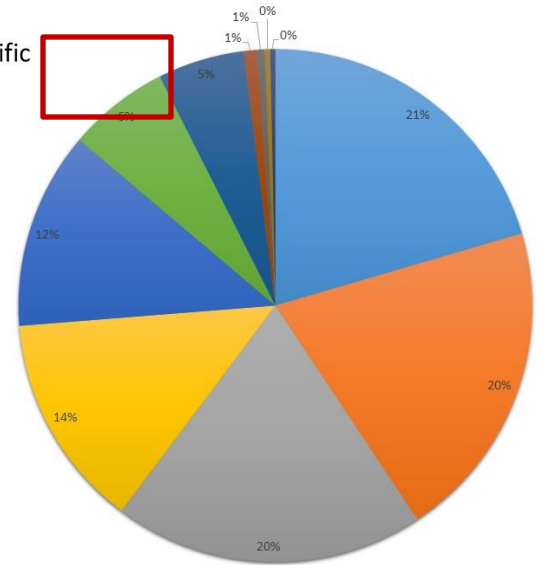
- Consultant for Stryker

Age-Adjusted and Age-Specific Cancer Incidence Rates for Patients Aged 0–14 Years (SEER 2009–2012)



- Leukemia
- CNS
- Lymphoma
- Soft tissue
- Neuroblastoma
- Renal
- Bone
- Epithelial
- Germ cell
- Retinoblastoma
- Liver
- Other

Age-Adjusted and Age-Specific Cancer Incidence Rates for Patients Aged 15–19 Years (SEER 2009–2012)



- Epithelial
- CNS
- Lymphoma
- Leukemia
- Germ cell
- Soft tissue
- Bone
- Renal
- Liver
- Neuroblastoma
- Other

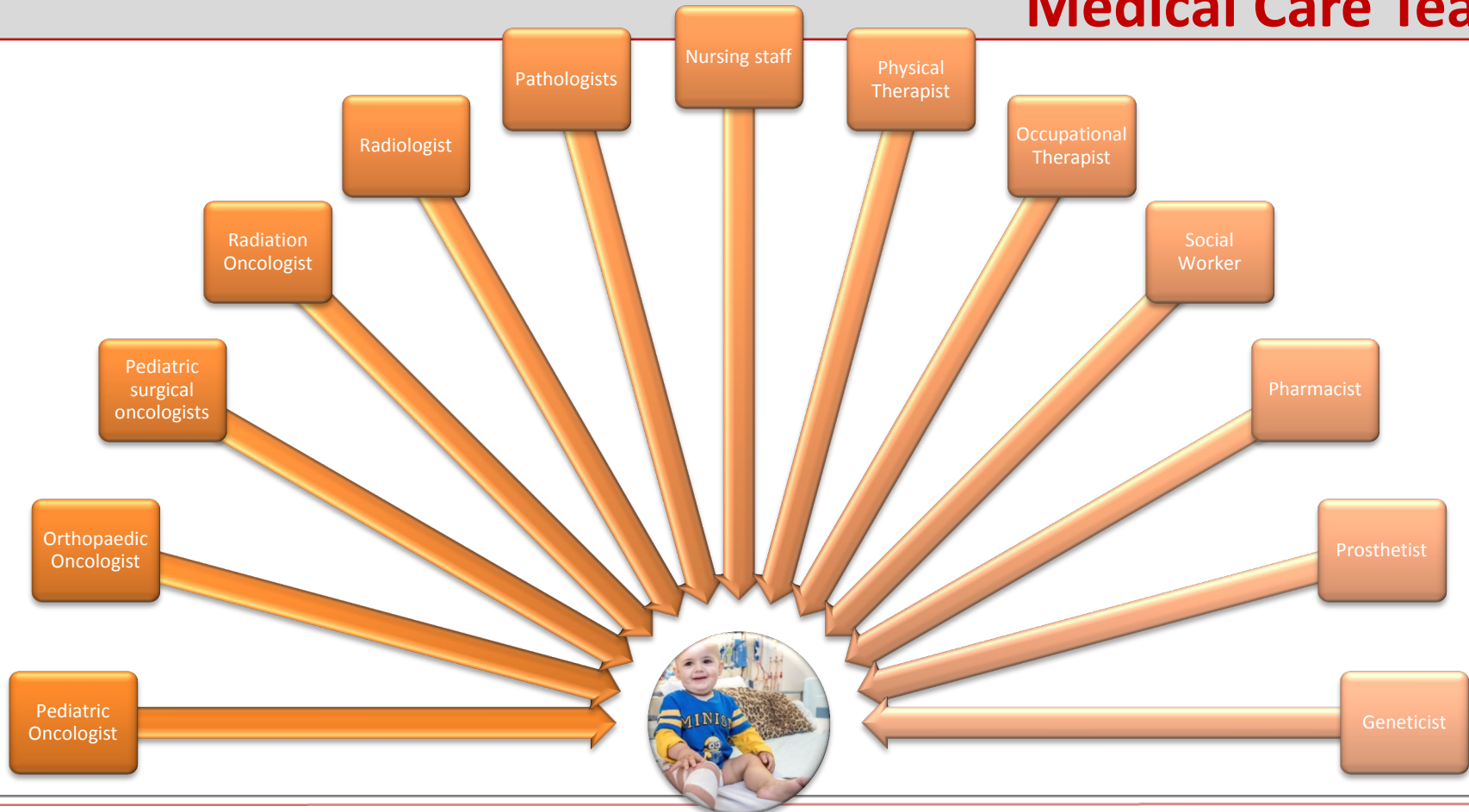
- Osteosarcoma
- Rhabdomyosarcoma
- Ewing's Sarcoma

Who is the patient?

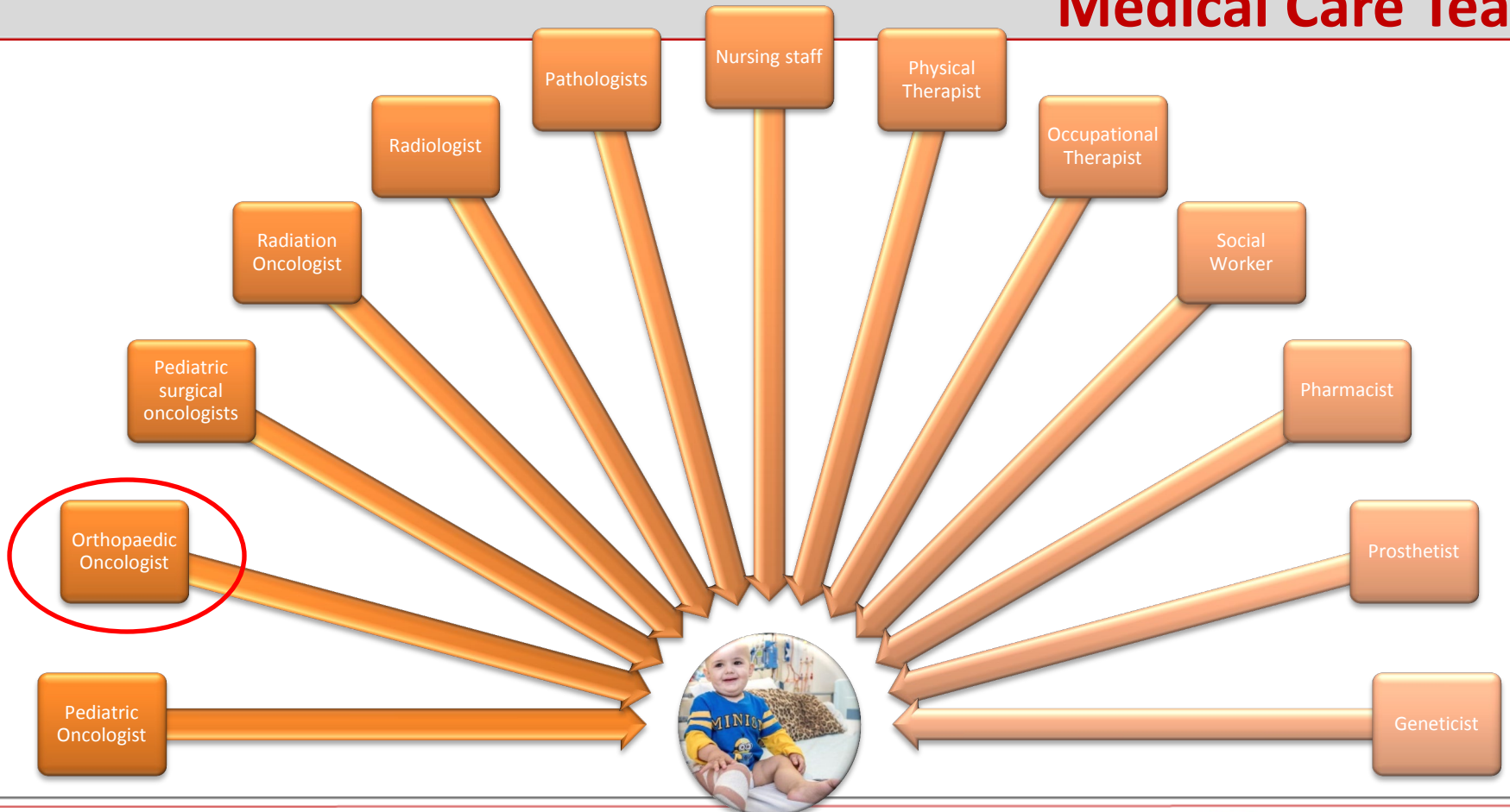


UNCLE AUNT

Medical Care Team



Medical Care Team



Limb salvage vs Amputation



- Best oncologic outcome
 - Timing to surgery
 - Timing to chemo
- Growth potential
- Body image
- Longevity of reconstruction
- Cultural acceptance

- Best oncologic outcome - Amputation/limb salvage
 - Timing to surgery
 - Timing to chemo
- Growth potential – Limb salvage
- Body image - Limb salvage
- Longevity of reconstruction - Amputation
- Cultural acceptance - Limb salvage

Table 1

Relative Contraindications to Limb Salvage

Factors most likely to preclude attempting limb salvage

- Major neurovascular involvement

- Very immature skeletal age

Factors most likely to delay reinstating chemotherapy

- Infection preceding definitive resection

- Difficulties with postoperative wound healing

Factors most likely to be associated with local recurrence

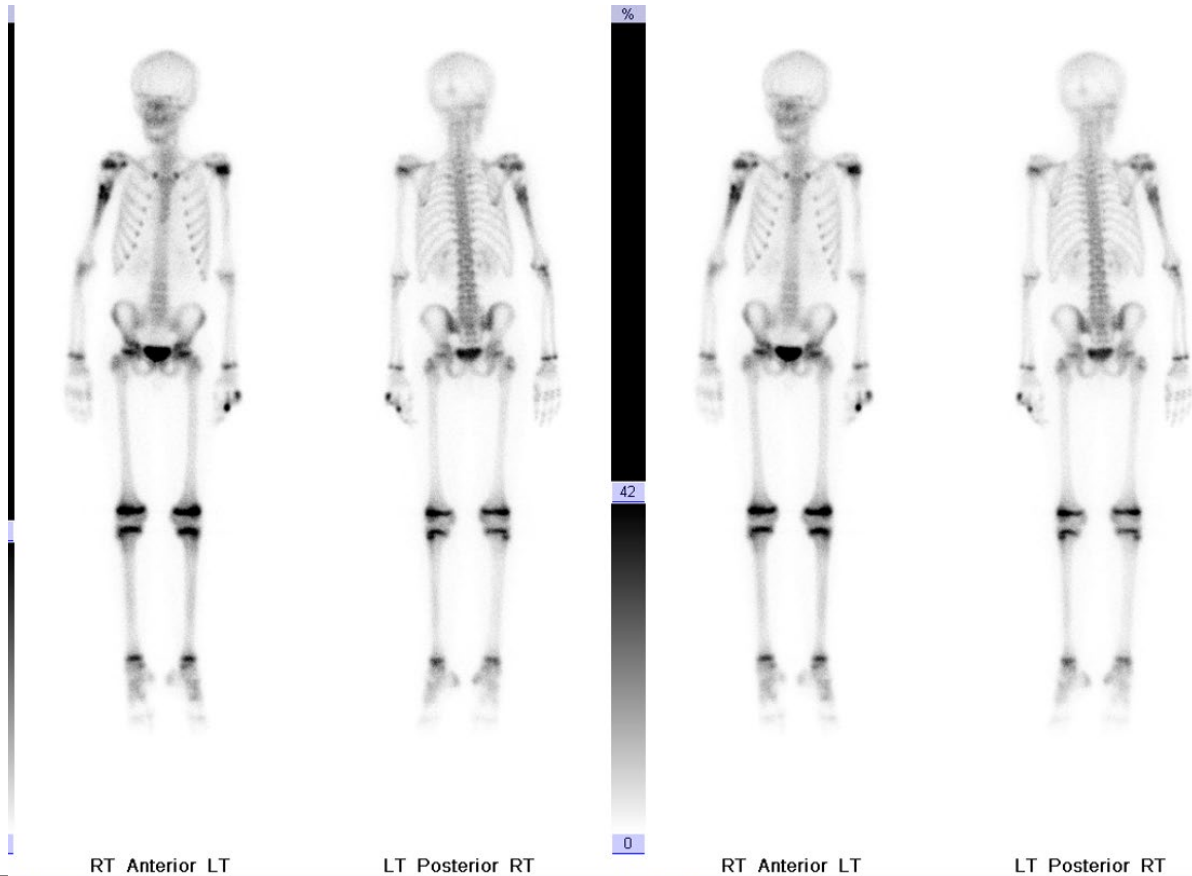
- Tumor-bed contamination (eg, biopsy complications)

- Positive surgical margins

- Pathologic fracture

Case 1



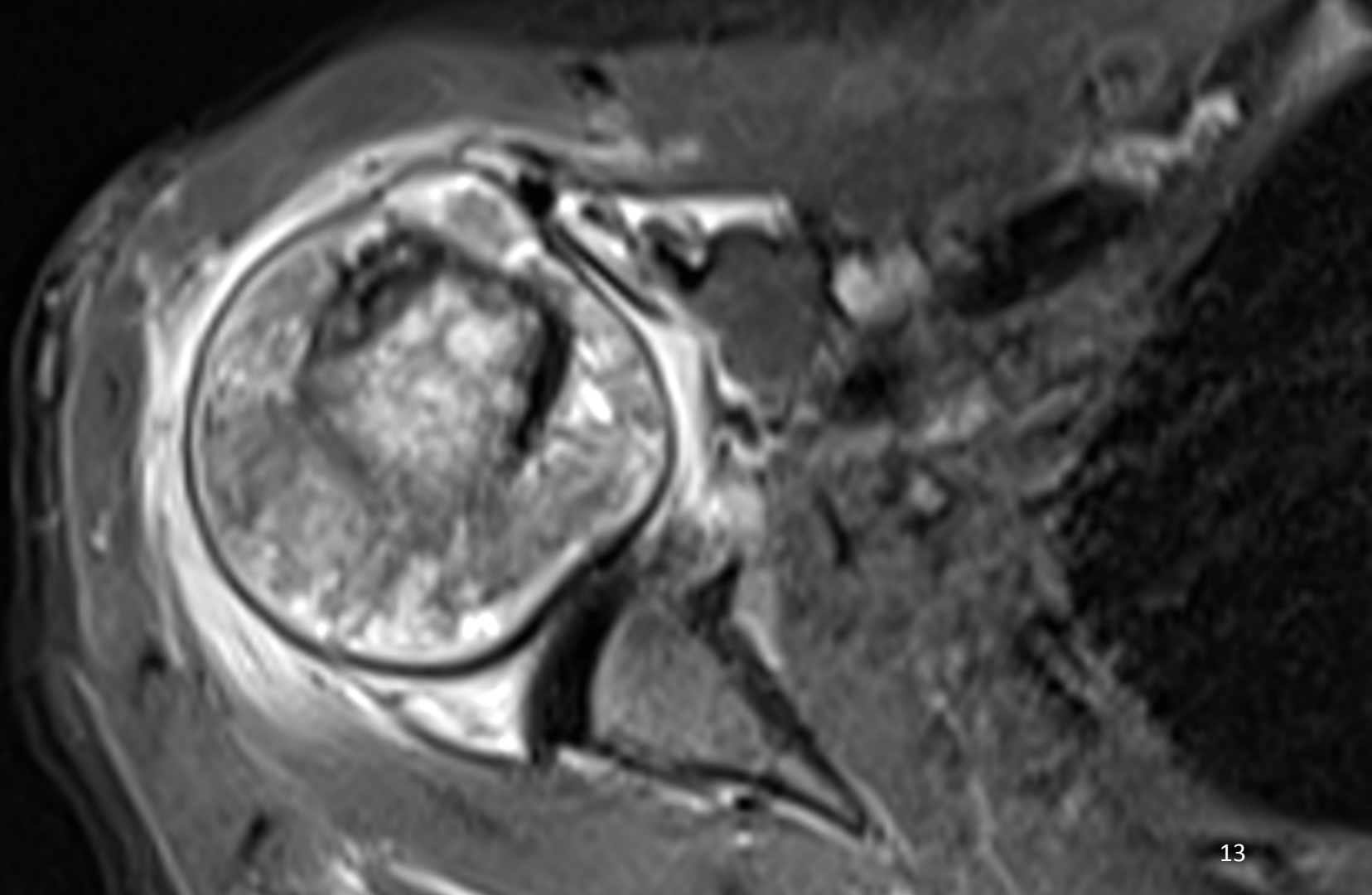


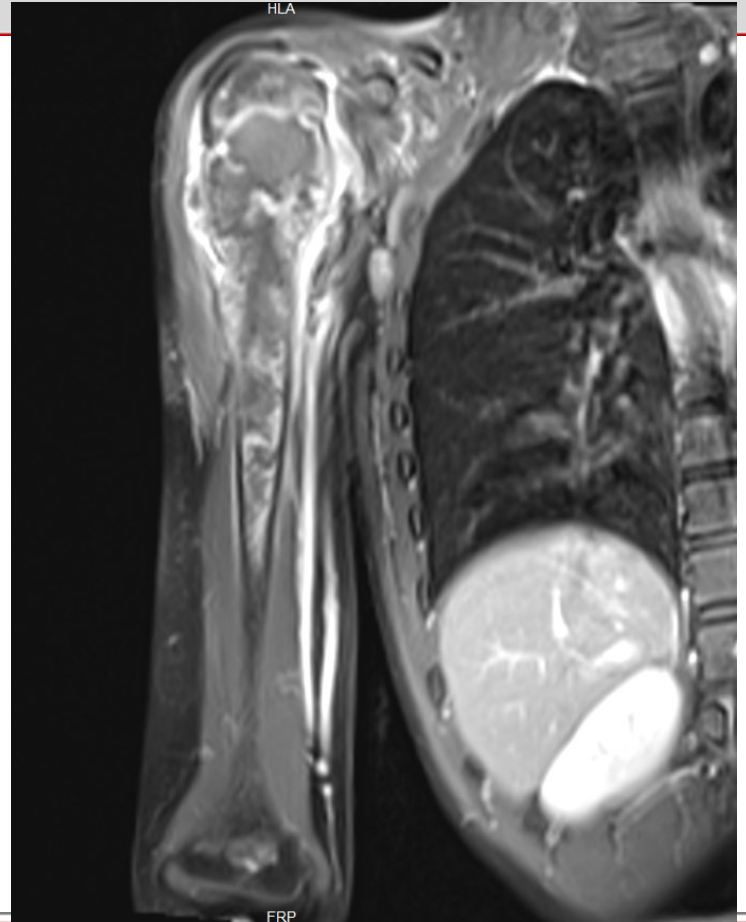
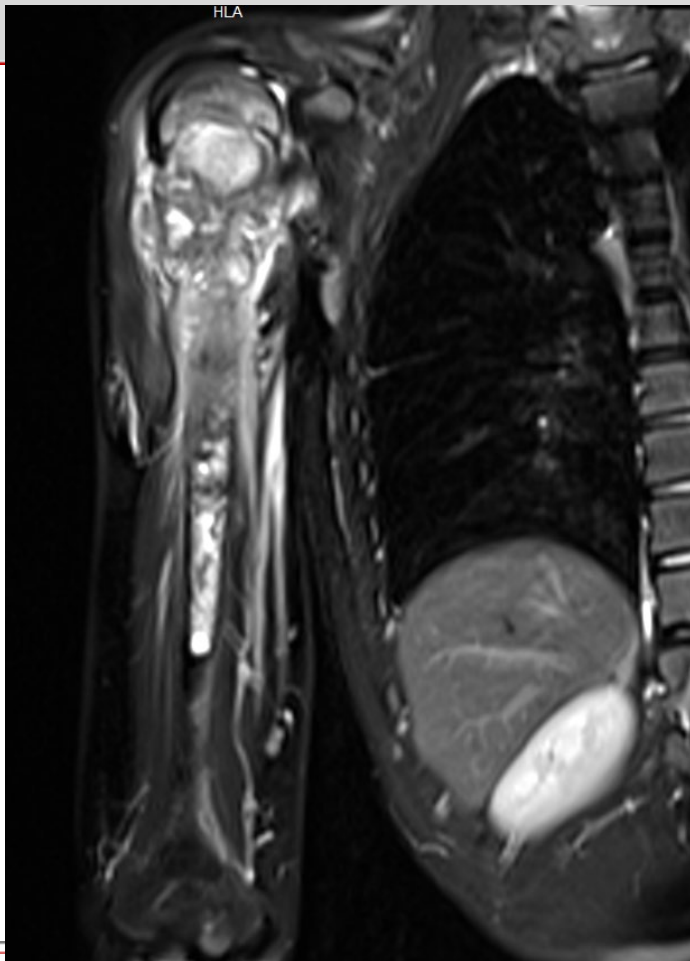
RT Anterior LT

LT Posterior RT

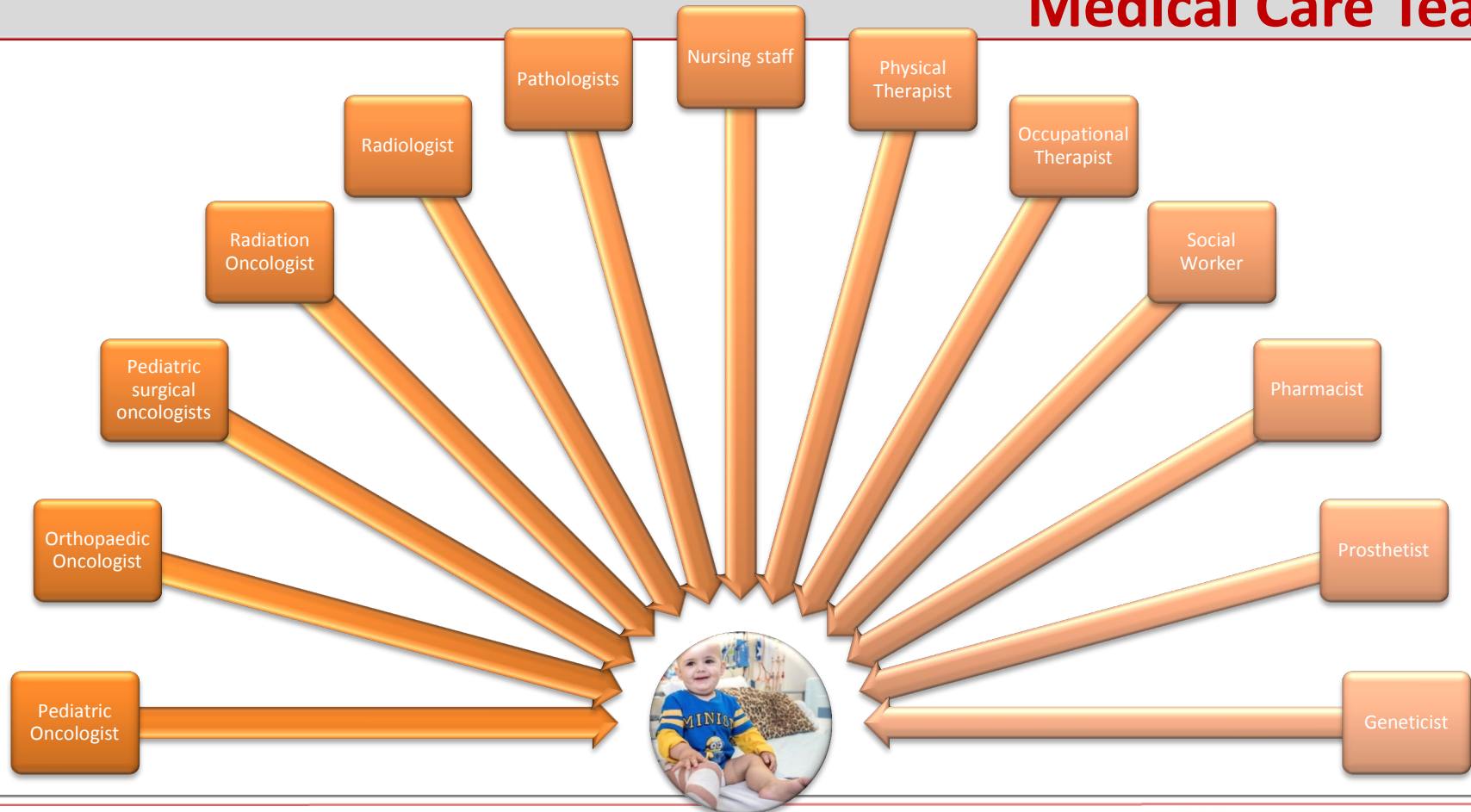
RT Anterior LT

LT Posterior RT





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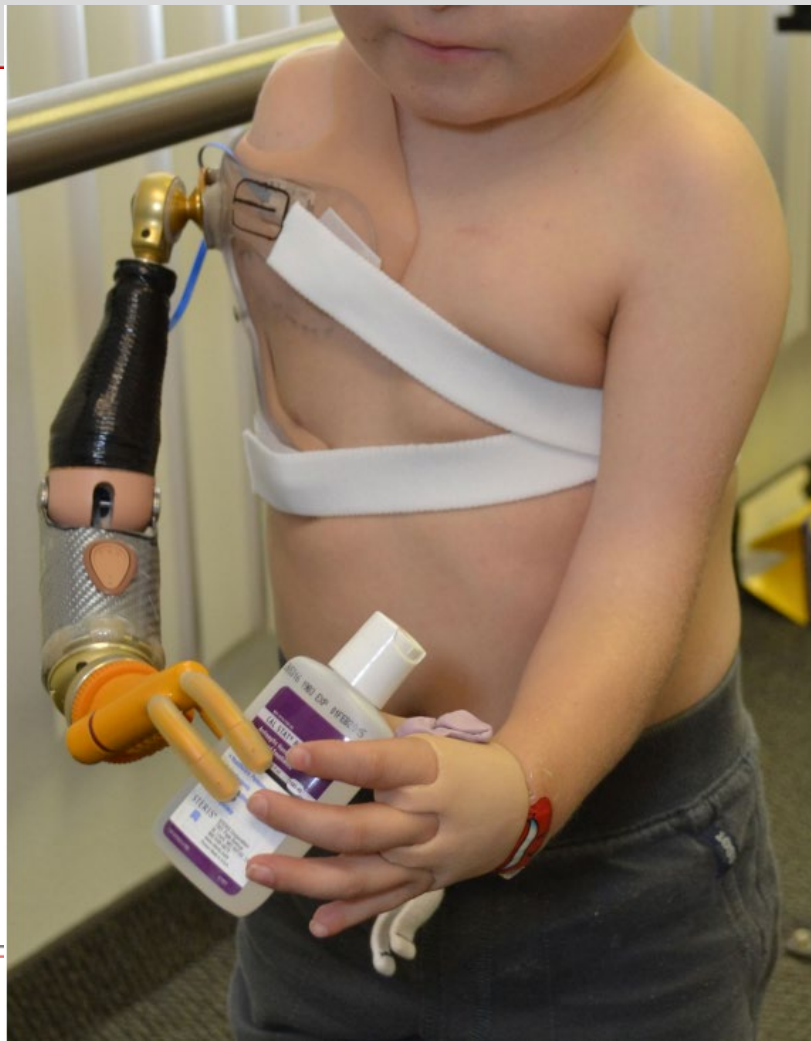
Effect of Time to Resumption of Chemotherapy After Definitive Surgery on Prognosis for Non-Metastatic Osteosarcoma

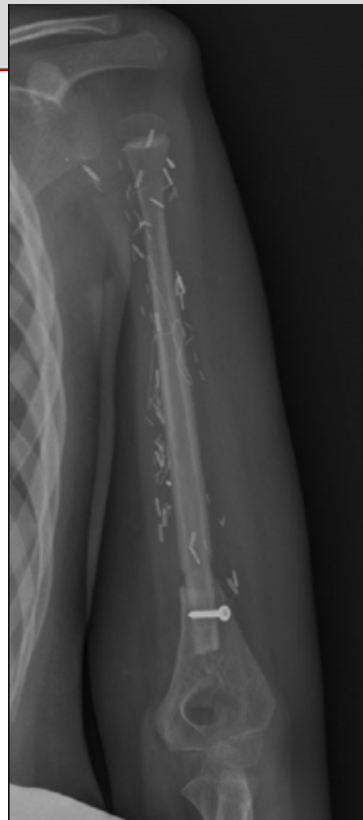
By Hamayun Imran, MD, MSc, Felicity Enders, PhD, MPH, Mark Krailo, PhD, Franklin Sim, MD, Scott Okuno, MD,
Douglas Hawkins, MD, Joseph Neglia, MD, MPH, R. Lor Randall, MD, Richard Womer, MD,
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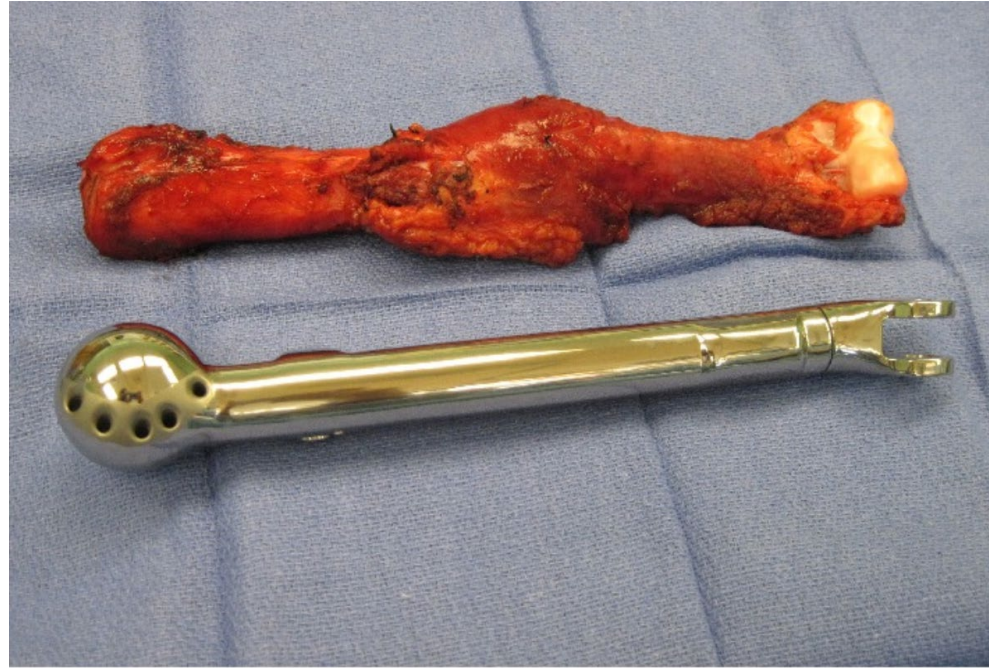
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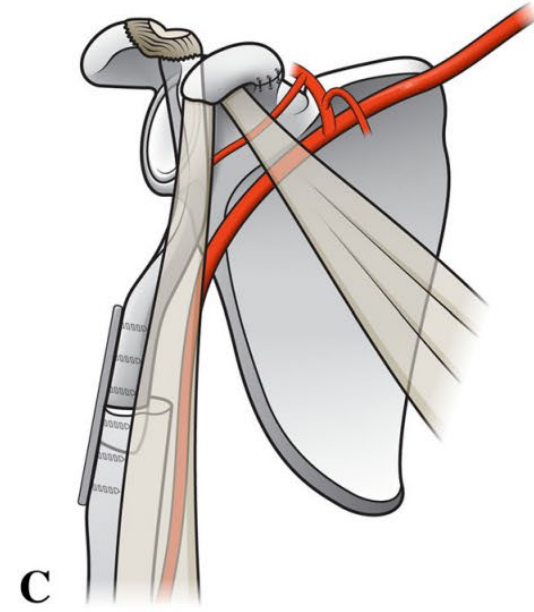
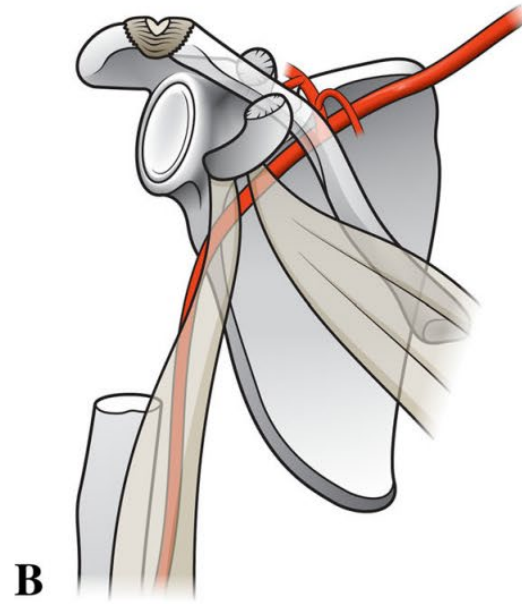
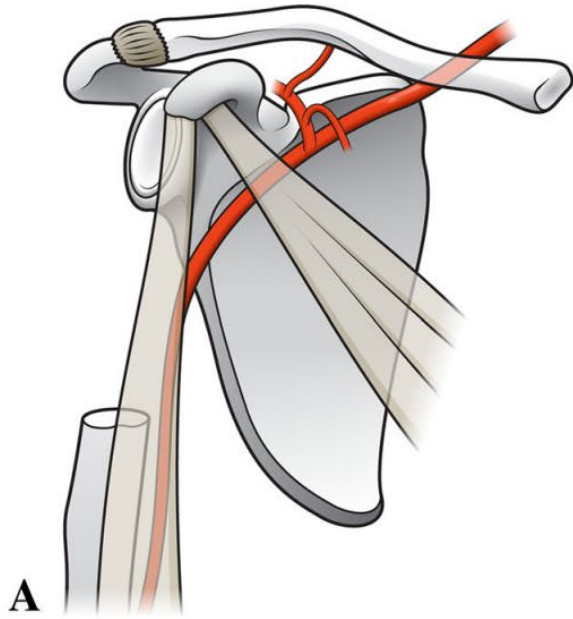
Delay >3 weeks decrease prognosis

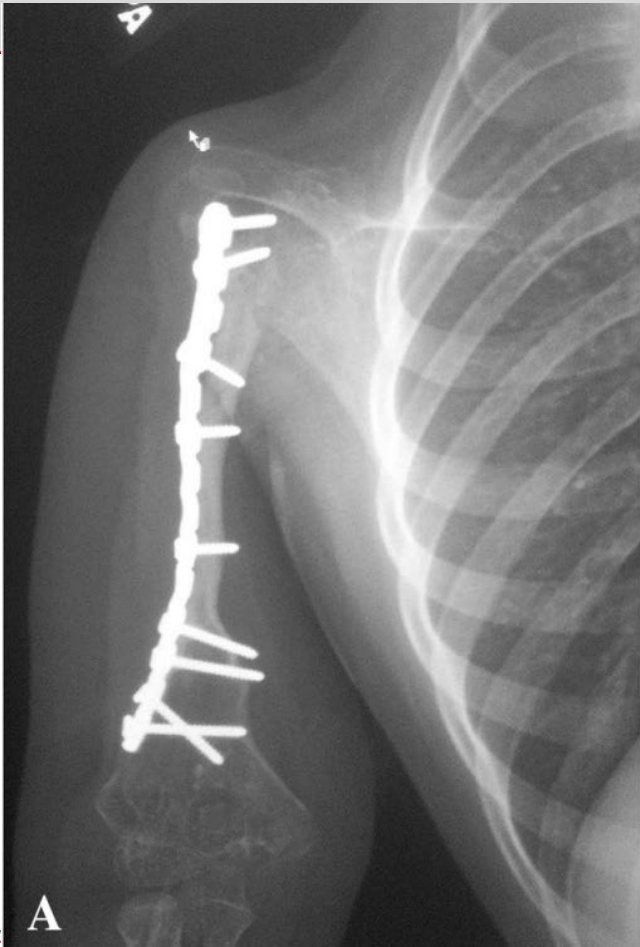




Erdmann D, Garcia RM, Blueschke G, Brigman BE, Levin LS. Vascularized fibula-based physis transfer for pediatric proximal humerus reconstruction. *Plastic and Reconstructive surgery*. 2013 Aug 1;132(2):281e-7e.

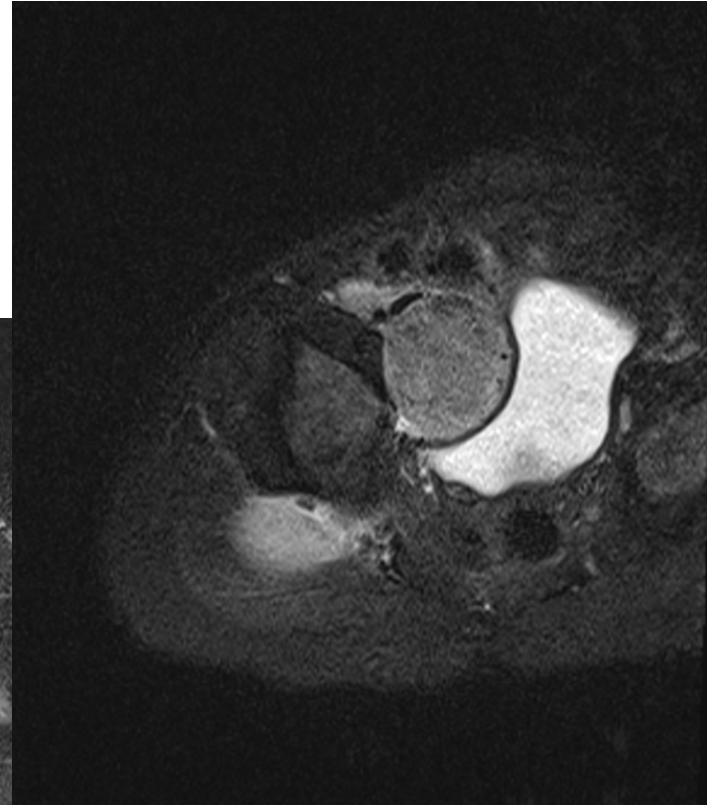
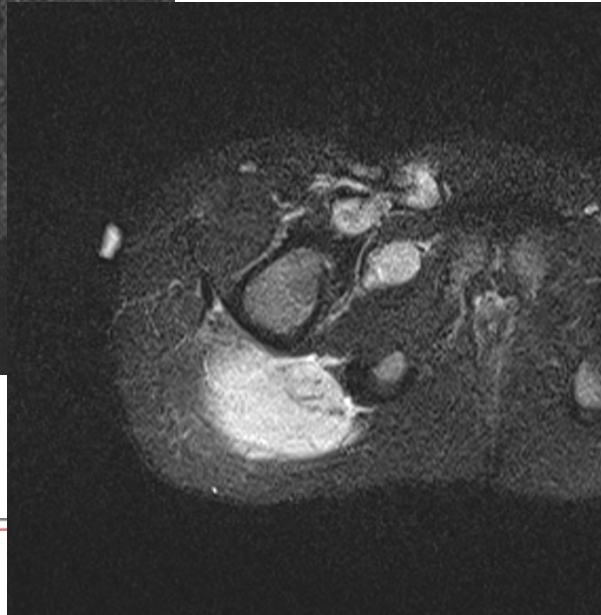
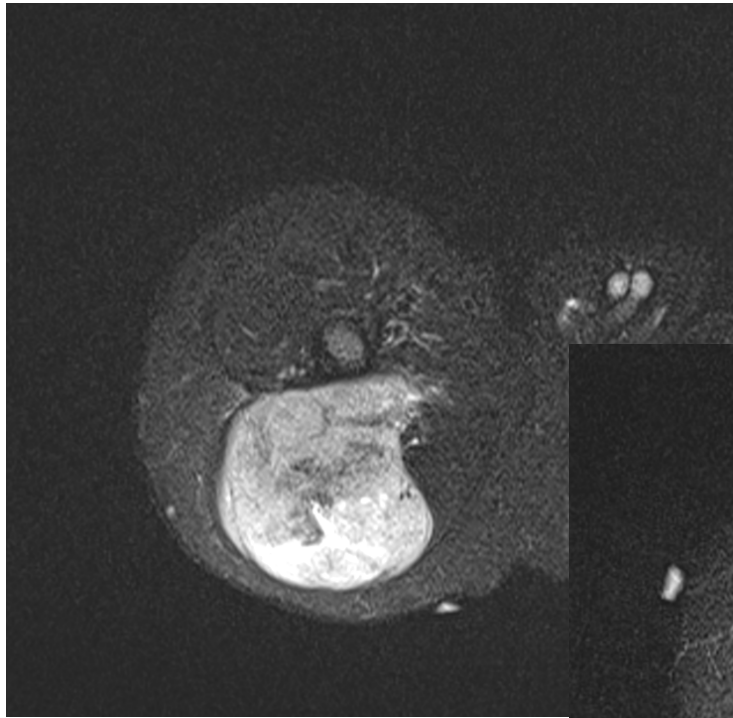


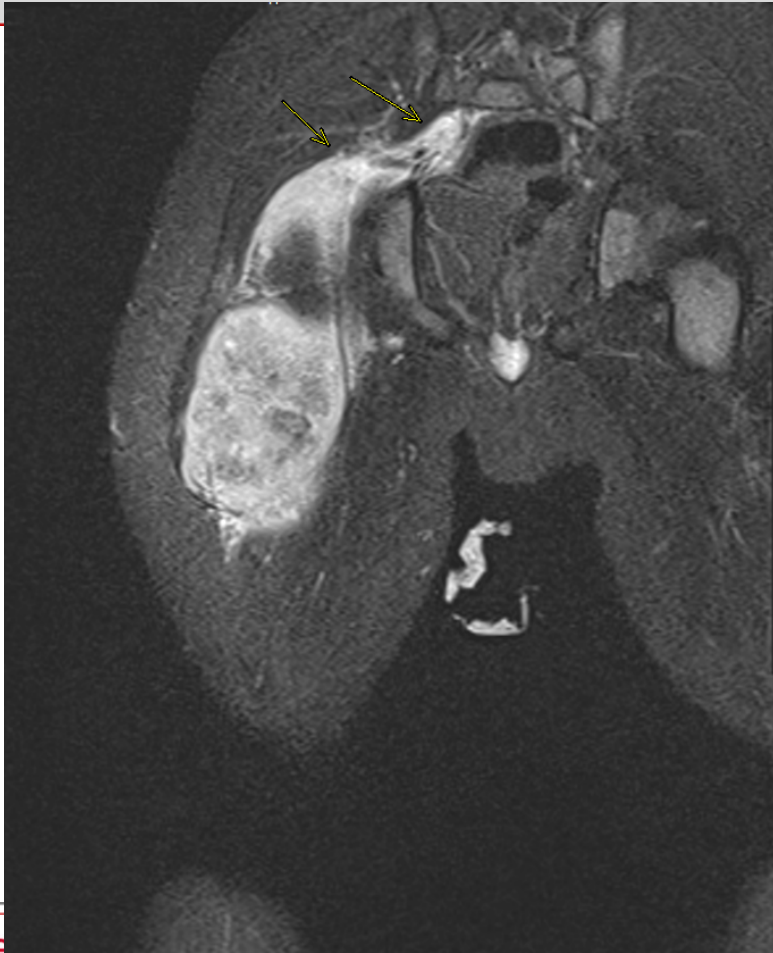




Limb salvage vs Amputation







- Staging – small pulmonary nodules, disappeared after chemo
- Family history of cancer
 - P53 germline mutation +
- Social support poor
- High risk radiation induced sarcoma
 - Want to avoid XRT

Amputation

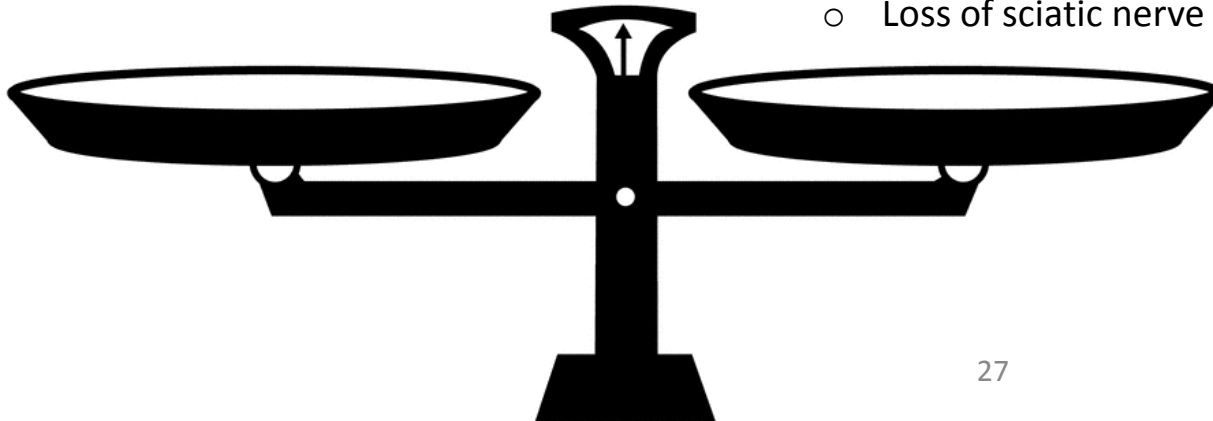
External Hemipelvectomy

- Pro
 - Margins wide
 - Avoid XRT
- Cons
 - Disfiguring
 - May need urinary diversion
 - Family distress
 - Prognosis likely poor
 - Progressive prosthetic fitting

Limb-Salvage

Front-back through the sciatic notch, femoral LN resection

- Pro
 - Maintain limb
 - Family acceptance
- Cons
 - Longer surgery
 - Will need XRT with close margins
 - Post-radiation wound and neural complications
 - Delay to chemo
 - Loss of sciatic nerve



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