



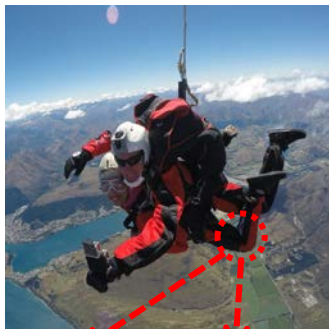
Joint-sparing Surgery in Paediatric and Young Adult Patients with Bone Sarcoma of Lower Extremities



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ORT, PWH, CUHK, NTEC

Primary bone sarcoma

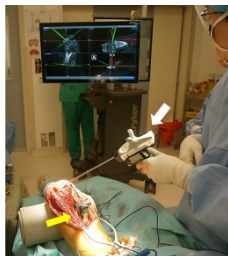
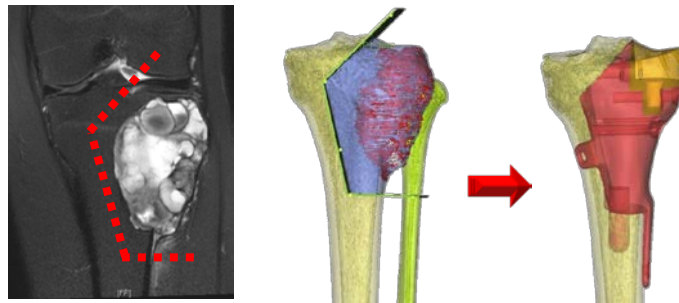
- **Rare** condition (2014: 53 new cases)
- Treatment: mainly **surgical resection**
- Conventionally, **limb saving operation with joint sacrificed**





Joint sparing surgery in young bone sarcoma of LL

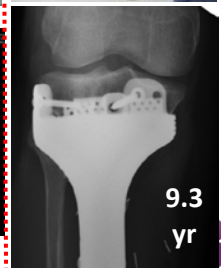
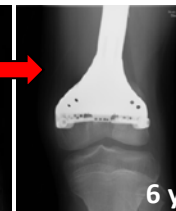
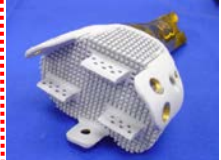
- Save native joint → better function
- Technically demanding
- *Investigate* the mid-term results of the *computer-assisted surgery (Navigation / 3D printed surgical guides)*
- *Jan 2006 – Jan 2016 (15)*
- Mean age: 13 (5-24)
- High grade: 13; low grade: 2



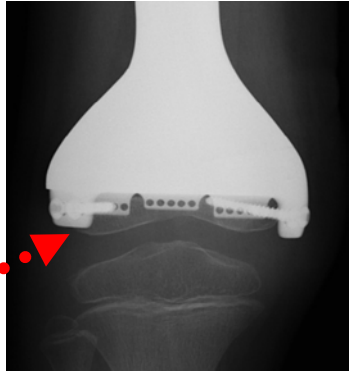
Results: mean FU 5.1 years (0.4 – 10.9)

- *All –ve margin* except one
- One LR (6.7%) and one died of lung metastases
- *No infection*
- Two (13%) early loosening
- Four (26%) mechanical failure in extendable prostheses
- *Small remaining joints viable and growing*

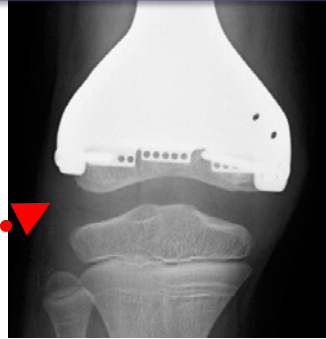
Mean MSTS score:
28.7/30



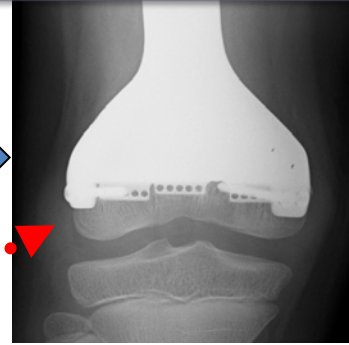
The remaining joint is growing!



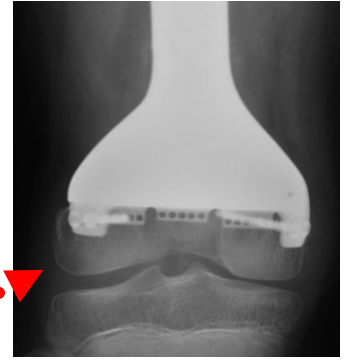
1 Mo: age 6



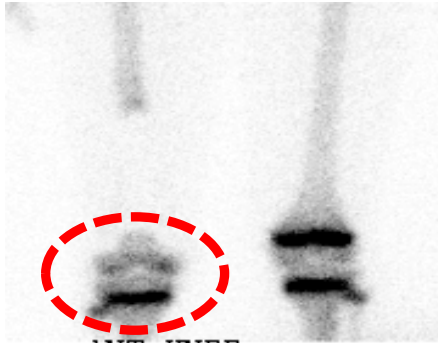
1 year



3 years



7 years: age 14



ANT KNEE

Viable joint





Conclusion

- To date, **largest series** of joint-sparing surgery with custom prostheses that our group has **pioneered**
- In select patients, mid-term results suggest the technique → achieve **better function and similar survival** than traditional method.
- Computer Navigation & 3D printing** → personalized surgery
- Comparative studies: ? real clinical efficacy

