

BACKGROUND

Pediatric rotationplasty is a limb-sparing procedure for children with malignant lower-extremity bone tumors. The surgery removes the diseased bone, rotates the distal limb 180 degrees, and reattaches it, preserving the femoral vessels and sciatic nerve while rendering the femoral nerve nonfunctional. This creates a functional “neo-knee” for use with a below-knee prosthesis. Analgesia typically involves multimodal, opioid-sparing strategies. This case highlights effective postoperative pain control using femoral and sciatic peripheral nerve catheters.

MATERIALS & METHODS

As the case report is devoid of patient identifiable information, it is exempt from IRB review under University of Kansas guidelines. Informed consent was obtained from the patient prior to the writing of this case report.

DISCUSSION

Regional anesthesia in pediatric orthopedic surgery now often favors peripheral nerve blocks over traditional neuraxial techniques, driven by improved ultrasound guidance, new block options, and opioid-sparing goals. Comparative data for rotationplasty remain limited, but large registries show similarly low complication rates for both techniques, with serious adverse events being rare^{3,4}. Current guidelines recommend selecting the technique based on patient factors, surgical needs, and provider expertise, noting that both methods are safe under general anesthesia in children.

MEDIA

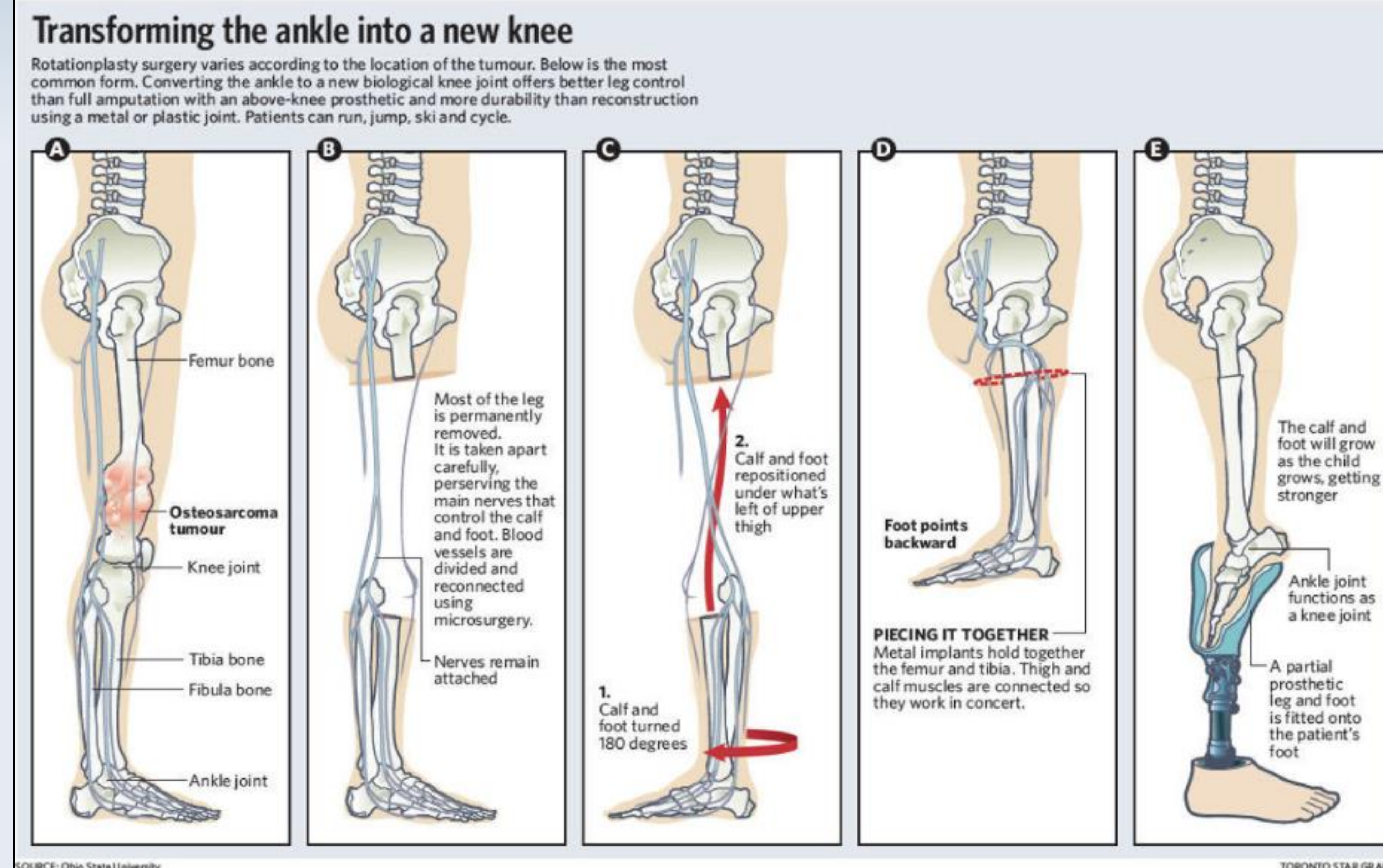


Figure 1: Diagram outlining rotationplasty procedure.
Source: Ohio State University

CASE

- A 12-year-old male with a history of left distal femur osteosarcoma was treated with wide resection, endoprosthetic reconstruction, hardware removal, and rotationplasty. Pre-emergence placement of a left femoral and subgluteal sciatic peripheral nerve catheter was completed with no complications — both lower extremity catheters contained a concentration of bupivacaine 0.125% at a rate of 6ml/hr.
- Initial post-operative pain score was recorded as a 7 on a standard 10-point scale in the recovery bay. During his hospital course, the patient reported pain scores ranging from 2 to 4, with subjective descriptions in the Acute Pain Service notes including terms such as “discomfort” and “sore.” He utilized a regimen of scheduled acetaminophen and methocarbamol supplemented with PRN doses of oxycodone, decreasing use over the following days.
- Upon discharge, the patient and the family expressed comfort with the plan to transition to oral medications. The patient continues to remain opioid-free in the postoperative period indicating that our interventions in the perioperative setting could have potentially played a role in preventing chronic opioid use for this pediatric patient.

REFERENCES

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