



Synopsis

This case involves a 50-year-old male who sustained a closed, displaced tibial head fracture after high-energy trauma and was treated with ORIF using bone graft and locking plate. Significant preoperative swelling and postoperative pain raised concern for acute compartment syndrome (ACS). Continuous postoperative monitoring with CPMX1 showed an initial drop in limb compressibility (21% pre-op to 8% at 6h) followed by gradual recovery to 19% at 24h, without evidence of critical deterioration. This monitoring effectively differentiated between postoperative pain and pathological pressure rise, safely ruling out ACS and thereby avoiding unnecessary fasciotomy. The case highlights CPMX1 as a valuable noninvasive tool for postoperative surveillance, supporting conservative management while ensuring patient safety.

Patient Profile

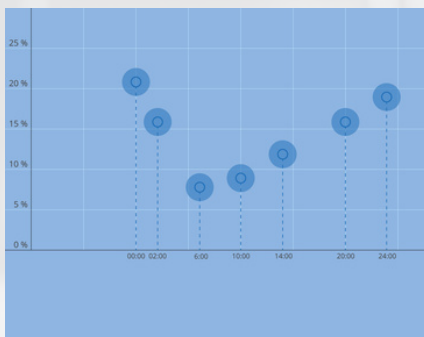
- Age/Sex: 50-year-old male
- Injury: Dislocated, closed fracture of tibial head after high-energy trauma
- Treatment: ORIF with bone graft and locking plate

Initial Presentation

- Severe soft tissue swelling pre-op; direct lateral approach with supportive arthroscopy performed after consolidation

Clinical Progression and CPMX1 Assessment

- Postoperatively, the patient reported increasing pain, raising concern for ACS
- CPMX1 was deployed for post-op monitoring
- Pre-op injured limb: 21% (vs. control 28.5%)
- Post-op timeline: (0h: 16%; 6h: 8%; 10h: 9%; 14h: 12%; 20h: 16%; 24h: 19%)
- Impact: Continuous monitoring showed gradual recovery of compressibility without critical drop-off, ruling out ACS and avoiding unnecessary fasciotomy



Conclusion

- CPMX1 supported safe post-op monitoring, distinguishing pain from critical pressure rise
- Enabled conservative management and avoided surgical over-treatment