Bicondylar tibial plateau fracture case study

PERI-LOC°
Periarticular Locked Plating System

PERI-LOC° VLP°
Variable-Angle Locked Plating System

JET-X° BAR
Unilateral External Fixator System
Patient information

49 year old male, found on the sidewalk, unable to walk. Reportedly struck by a motor vehicle.

Right bicondylar tibial plateau fracture and compartment syndrome

Implants used

JET-X™ 10.5mm Carbon Fiber Bars, Stainless Steel Half Pins and Freedom Clamps

PERI-LOC™ VLP™ 3.5mm Posteromedial Proximal Tibia Plate, 7 hole

PERI-LOC 3.5mm Lateral Proximal Tibia Plate, 8 hole

PERI-LOC and PERI-LOC VLP 3.5mm Locking and Non-locking Screws

Case background information

The patient was found on the sidewalk unable to ambulate. He reported being struck by a motor vehicle while riding his bicycle. He developed compartment syndrome. The fracture was extensive and required bicondylar fixation. PERI-LOC VLP is low profile and provides buttress support for the medial plateau. The low profile nature minimizes soft tissue irritation (tendon structures) in that area. The PERI-LOC 3.5mm Lateral Proximal Tibia Plate was selected for its strength and ability to support the tibial diaphysis.
Procedural notes

Procedures
Two-incision fasciotomy, application of external fixator and subsequent ORIF right tibial plateau fracture

Patient Positioning – Supine
A two-incision fasciotomy was performed on the right leg on the day of presentation. The patient was then placed in a large JET-X™ External Fixator which spans across the knee, using 10.5mm Bars, Freedom Clamps and stainless steel half pins. Three days later, he returned to the OR for fasciotomy closure (Figure 1).

Eight days later, the patient underwent definitive stabilization of the tibial plateau fracture and removal of the external fixator (Figure 2).

Both medial and lateral incisions were made, proximal to the fasciotomy incisions. Provisional fixation was achieved by the use of Kirschner wires. The PERI-LOC VLP™ Posteromedial Plate was used to stabilize and buttress the fracture. The PERI-LOC Lateral Proximal Tibia Plate was then placed and provisionally fixed (Figure 3). Fluoroscopic imaging confirmed plate positioning. Internal fixation concluded with the insertion of an independent screw proximal to the PERI-LOC VLP Posteromedial Plate for additional subchondral bone support. Locking and non-locking screws were placed throughout each plate and the provisional wires were removed (Figure 4).

Results
The patient returned home following the procedure and has been stable on follow-up.

Surgeon quote
“The versatility of the PERI-LOC system combined with the low profile, variable-angled locking technology and precontoured nature of PERI-LOC VLP Plates helps tremendously in complex fracture management.”
Implant details

**PERI-LOC VLP 3.5mm Posteromedial Proximal Tibia Plate**
- Contoured to provide a stable buttress platform for fractures of the medial tibial plateau
- Consistent 2.0mm plate thickness (7 hole plate)
- Scallop proximal to the plate for independent lag screw placement

**PERI-LOC 3.5mm Lateral Proximal Tibia Plate**
- Posterior tilt allows for screw placement parallel to joint
- 3° bend in plate shaft to match tibial diaphysis
- Scallop proximal to the plate for independent lag screw placement

**PERI-LOC and PERI-LOC VLP 3.5mm locking and non-locking screws**

**JET-X 10.5mm Carbon Fiber Bars, Stainless Steel Half Pins and Freedom Clamps**
- Freedom clamps provide the ability to angle pins up to 50°
- 10.5mm bars are stronger than smaller bars, eliminating the need to double stack for stability

Case study participants

Michael J. Prayson, MD
Dr. Prayson is the Director of Orthopaedic Trauma at Miami Valley Hospital and Professor and Vice Chair of the Department of Orthopaedic Surgery at Wright State University Boonshoft School of Medicine. Dr. Prayson specializes in adult orthopaedic trauma and post-traumatic reconstruction surgery.