

Open Pilon Fracture



Patient information

- 50-year-old female
- Motorcycle accident



Figure 1

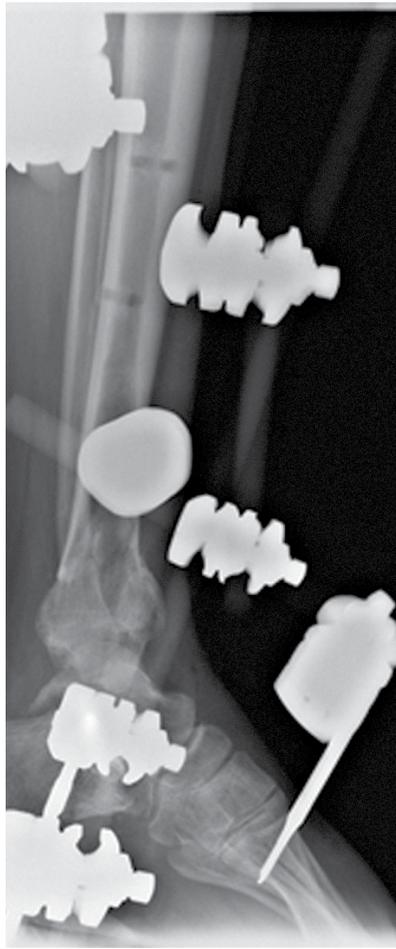


Figure 2



Figure 3

Case history

A 50-year old female motorcycle passenger was admitted to the ER with orthopaedic injuries which included a complex unstable pelvic ring injury with hypotension, bilateral Grade 2 open pilon fractures, and a closed right distal radius fracture.

Case discussion

Patient was a 911-trauma activation to a level-2 trauma center. Damage control orthopaedic care was provided on the day of injury, including pelvic binder, component blood therapy, temporizing pelvic external fixation, irrigation and debridement of the open pilon fractures with ankle spanning external fixation and wrist closed reduction with splinting.

Definitive fixation was provided for the complex pelvic injury after ICU admission and resuscitation. Repeat ankle debridement with revision external fixation was necessary with soft tissue rest before definitive ORIF of the bilateral pilon fractures.

Implants	
EVOS® MINI 2.7mm 20 hole Flex Plate (cut to 12 holes)	
PERI-LOC® 3.5mm 13 hole Anterolateral Distal Tibia Plate	
EVOS MINI 2.7mm 7 hole Y-Tine Plate	
EVOS MINI 2.7mm Cortex Screws	
2.0mm K-wire	

Procedures
Removal of external fixation under anesthesia
Repeat irrigation and debridement open fracture
Open reduction internal fixation pilon fracture
Closed treatment of ankle instability with percutaneous fixation

Procedure

The patient was positioned supine on a radiolucent table and leg ramp, to prepare the left ankle. The external fixation construct was prepped for use as a reduction adjunct. The fibula was reconstructed first to establish length and stability of the ankle mortise. The fibula was approached with an incision over the posterior border >5cm from the anteromedial tibial incision. An EVOS[®] MINI 2.7mm Flex Plate was cut and contoured for posterolateral bridge plating of a small-sized fibula not amenable to standard size plating (Figure 1).

The articular and metadiaphyseal tibial fractures were provisionally reduced with forceps and K-wires, then definitively fixed with a lag screw technique using EVOS MINI 2.7mm cortex screws (Figures 2 – 3). Neutralization plate fixation was provided with a PERI-LOC[®] 3.5mm Anterolateral Distal Tibia Plate and an EVOS MINI 2.7mm Y-Tine Plate (Figure 4). Ligamentous stress exam found a stable syndesmosis, however anterior ankle instability treated with closed reduction and percutaneous K-wire fixation (Figure 5). A splint was placed for soft tissue rest.



Figure 4



Figure 5

Results

Ankle pinning was removed at six weeks with progressive non-weight bearing range of motion. Partial weight bearing began at 12 weeks with progression to full weight bearing with standard physical therapy. The fracture healed without complications.

Case study author



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Dr. Mamczak specializes in Orthopaedic Trauma at Memorial Hospital in South Bend, IN. He is fellowship trained (Washington University School of Medicine 2009) and continues to publish manuscripts and book chapters on a variety of topics related to fracture care and trauma. He previously served in the US Navy as an Orthopaedic Trauma Surgeon with missions to help wounded soldiers in Afghanistan and earthquake victims in Haiti.

Surgeon quote

“The EVOS® MINI system provides a wide array of provisional and definitive fixation options. The low profile size, plate variety and longer screw lengths make this set an ideal supplement to most of my small bone and peri-articular fracture cases.”

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