

# Reduction of Ankle Fracture Dislocation with Anatomic Low-Profile Plates



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CoLink® Afx Ankle Fracture Plating System

## INTRODUCTION

A 45-year-old female presented in the emergency department for an ankle fracture dislocation following a fall. The attending physician reduced and splinted the affected ankle and referred the patient for additional treatment.

During the initial examination, x-rays were taken to assess the severity of the fracture (**Figures 1 & 2**).

The physical examination scope was limited due to the prior reduction and splinting of the patient's ankle. Still, mild swelling and ecchymosis to her toes were observed, and the affected foot was warm and pink with brisk cap refill.

Treatment options were discussed with the patient, and surgical intervention

to repair the posterior malleolus fracture was recommended due to the instability of the ankle in combination with the posterior dislocation. An ankle arthroscopy was also recommended to identify any secondary chondral damage from the dislocation.

After considering the presented indications and the dislocation of the posterior tibial fracture, it was determined that surgical treatment using the CoLink® Afx Posterior Tibia and Posterior Lateral Fibula Plates from the In2Bones CoLink Afx Ankle Fracture Plating System would be the best course of action (**Figure 3**).

The CoLink Afx Posterior Tibia Plate allows for fixation of the posterior malleolus fracture while maintaining a low-profile, thanks to anatomic plate contours (**Figure 4**).

## PROCEDURE

The patient was placed in the supine position and an ankle arthroscopy was performed to inspect for any secondary chondral damage from the dislocation.

Maintaining the supine position, the medial malleolus fracture was then addressed using In2Bones CoLag® Screws to provide a secure reduction of the bone fragment. This may be performed with the patient prone or in a supine position, per surgeon preference.

The patient was shifted to a prone position for the remainder of the procedure, to enable a posterior approach between the Achilles and posterior border of the fibula. The sural nerve and lesser saphenous vein were identified and protected throughout the procedure.

The peroneal tendons were then retracted medially to gain access to the posterior fibula.

At this time, the fibula fracture was reduced and stabilized (**Figure 5**) with clamps, K-wires, and a lag screw.

To enable better C-arm visualization of the posterior malleolus fixation, placement of the CoLink Afx Posterior Lateral Fibula plate was deferred until later in the case.

The posterior malleolus fracture was reduced and fixed to accommodate



Figure 1. Pre-op lateral x-ray



Figure 3. CoLink Afx Posterior Lateral Fibula Plate



Figure 2. Pre-op AP x-ray

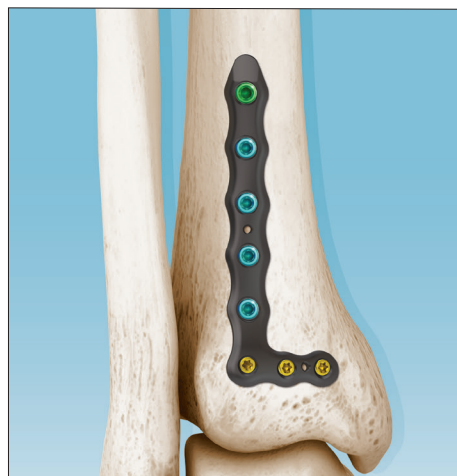


Figure 4. CoLink Afx Posterior Tibia Plate

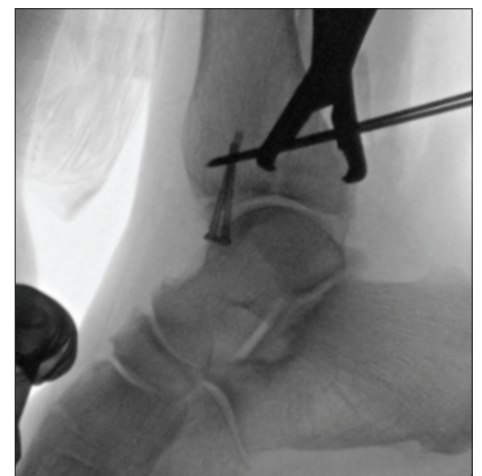


Figure 5. Intra-op fixation

# Reduction of Ankle Fracture Dislocation with Anatomic Low-Profile Plates - *cont.*

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proper coverage of the fracture pattern. Of note, the contoured plates of the In2Bones CoLink Afx system are fragment and anatomy specific, providing side-specific variations in some cases, and may act as a buttress plate; screw angulation options help to avoid joint violation.

After the posterior malleolus fracture was stabilized, attention was brought back to the posterior fibula.

Using a CoLink Afx Posterior Lateral Fibula Plate, the fibula was stabilized. Multiple screw fixation options are available distally with a variety of screw hole options to accommodate various fracture patterns. This plate is designed to allow for syndesmosis screw placement at this point in the procedure, if needed.

Final x-rays were then taken, and the fracture was well reduced.

## POST-OPERATIVE COURSE

The patient was splinted in a neutral position until the wound healed. After healing, the patient was instructed to start range of motion exercises. Early motion is allowed and is a key benefit of anatomic fixation of the fracture fragments.

At six weeks, post-operative x-rays were taken (**Figures 6 & 7**) and the patient began weight-bearing in a CAM walker, followed shortly thereafter by progression to physical therapy.



**Figure 6.** Six weeks post-op lateral x-ray



**Figure 7.** Six weeks post-op AP x-ray

## RESULTS

The patient has followed the normal post-operative course and is doing well, improving as expected with physical therapy.

## DISCUSSION

When treating ankle fractures, various fracture patterns and indications must be considered to ensure appropriate treatment and reduction.

The CoLink Afx Ankle Fracture Plating System provides a low-profile anatomic design in five plate geometries, which allowed for stabilization of the posterior malleolus and the posterior fibula for this patient. The screw hole configurations and variable angle screws further enable the fixation of many different fracture patterns.

The CoLink Afx Posterior Lateral Plate features a highly contoured geometry to follow the anatomy without the need for additional manual contouring. This design also helps surgeons avoid the peroneal tendons and provide excellent fracture fixation.

Paired with the plate's low-profile design, the need for reoperation to remove the construct is reduced.

In2Bones CoLag screws were also utilized in this case. The novel design of this screw allows for improved fixation and fracture reduction due to both primary and secondary threads, and a low-profile head that provides more significant compression compared with conventional screws.



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