

“It’s Your Call” – Solution
Kathy McLeron
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When do you straighten angulated long bone injuries?

It is vitally important to maintain proper circulation distal to extremity injuries. This may involve straightening deformities in long bones (i.e. “make limbs look like limbs”). Even when a pulse is present, a patient with a severely deformed extremity may have compromised circulation to part of the injured limb, especially when the bone ends can be seen to be pushing against the skin from the inside, (known as “tenting”) which can interfere with capillary circulation of the skin. This, combined with pressure from a splint, can interfere with perfusion of the extremity. If your standing orders or medical control allow it, an EMT may take up to two attempts to straighten a limb with a severe deformity. This, combined with splinting, may also make the patient more comfortable.

As an EMT, do you ever straighten joint injuries, if so when is it appropriate?

Generally, EMTs and paramedics should not try to reposition injuries involving joints – they should be splinted in the position found. In the case where there is no pulse distal to an injury involving a joint an EMT should attempt to align the joint into its normal anatomic position. This is best accomplished by pulling traction along the long axis of the body before pushing the joint back into its usual position. “Severely deformed ankle injuries should be moved back into alignment regardless of circulatory status.”¹

How would you treat this injury?

Since this patient has an ankle injury with a severe deformity, the EMT should make an effort to straighten this deformity. This is not “reducing” the fracture/dislocation which is done by an Orthopedic specialist while using imaging, but aligning the bones in a better position and trying to ensure that circulation is maintained. Since the foot is angled to the “outside”

What bones are broken in an ankle fracture?

Typically, ankle fractures involve the fibula, the tibia or both. In a specific ankle injury (Maisonneuve Fracture) there is an injury to the inside of the ankle, either the tibia or the deltoid ligament, as well as a fracture of the proximal fibula (the boney area felt on the outside of the lower leg by the knee). Fractures of the talus and other tarsal bones are usually considered “foot” fractures.

What types of splint are effective for this type of injury?

Since ankle fractures are fractures of the tibia and fibula, they should be treated (as with all bone injuries) by splinting the joint above and joint below the injury site, in the case of ankle fractures this includes the knee. This is especially true when the inside of the ankle

¹ *Prehospital Trauma Guidelines for EMTs in Alaska* (2007) page 15.

is injured as there is a chance for significant ankle instability as well as proximal (high) fibula injury. Movement at the knee causes movement along the length of the fibula and tibia, so the splint should include the knee as well as the ankle and the foot.

The specific type of splint is less important than ensuring it immobilizes the foot/ankle, tibia/fibula, and the knee. I prefer not to use air splints for this injury. In my experience as an Orthopedic PA, I have found that the plastic often makes the patient sweat – when I have gone to remove the boot-shaped air splint from patients with severe ankle fractures it is very difficult to get the splint free from their foot without causing more pain once the splint is “stuck” in place with sweat. This can be minimized if baby powder is applied to the leg before it is placed in the splint. Since there are now many other splinting options, I typically do not select air splints for this injury.