

OTA Tip of the Month – for July, 2011

Cutaneous Landmarks for Distractor Pin Placement in Medial Talar Body

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The AO Universal Distractor facilitates IM nailing of the tibia as well as reduction and fixation of pilon fractures. It allows a single surgeon to restore length, rotation, and alignment. All distractor pins are placed from medial to lateral, in the coronal plane. The proximal pin is either in the proximal tibial metaphysis, posteriorly (for IM nailing) or in the meta-diaphysis for ORIF of pilon fractures. The distal Schantz pin may be placed in the posterior tibia, the talus, or the calcaneus...

A distal pin in the tibia might interfere with the nail's path, or displace a posterior malleolar fracture. Distraction through a calcaneal pin typically produces sagittal plane deformity. A talar pin is usually optimal, but raises concerns about the need for open exposure or fluoroscopic guidance.

Cutaneous landmarks alone can be used to place a talar body pin safely and without imaging.

The talar body's dense bone provides excellent pin purchase. Its location permits distraction in line with the axis of the tibia. The talar neck is too anterior.

Make a stab incision with a #15 blade directly inferior to the anterior colliculus of the medial malleolus. The saphenous vein lies anteriorly. The anterior and posterior contours of the medial malleolus are visible and palpable. The tip of the subcutaneous landmark medial colliculus is located over the center of the talar body (Fig. 1A). Using a cannulated guide for a 5mm Schantz pin, the pin path is first created with a 3.5 mm drill bit (Fig. 1B). While drilling, the foot is held in neutral. The surgeon aims holds the foot in neutral, drilling parallel to the dome of the talus, approximating its center of rotation. The Schantz pin is then inserted through the guide outer sleeve of the guide. (Figs. 2A, B). Fig. 3 shows the distractor in place. A clinical photo for this technique is presented in Fig. 3.

Legends:

Fig 1 – A: Lateral radiograph with extracutaneous Schantz pin pointing to tip of anterior colliculus (white line); 2BB: AP radiograph with tip of 3.5mm drill bit entering body of talus directly inferior to anterior colliculus.

Fig 2 – A: Lateral radiographic image collinear with shaft of Schantzthe pin after its insertion into the talar body; 2B: AP image showing Schantz pin inferior to anterior colliculus (black line).

Figure 3 – Photograph of medial femoral distractor for tibial shaft fracture, prior to distraction. Note distal Schantz pin’s position in medial talar body, just distal to anterior colliculus (see inset).. Proximal The proximal Schantz pin is in the posterior tibial metaphysis.

Inset photograph shows close-up of talar body pin location.

Figure 1

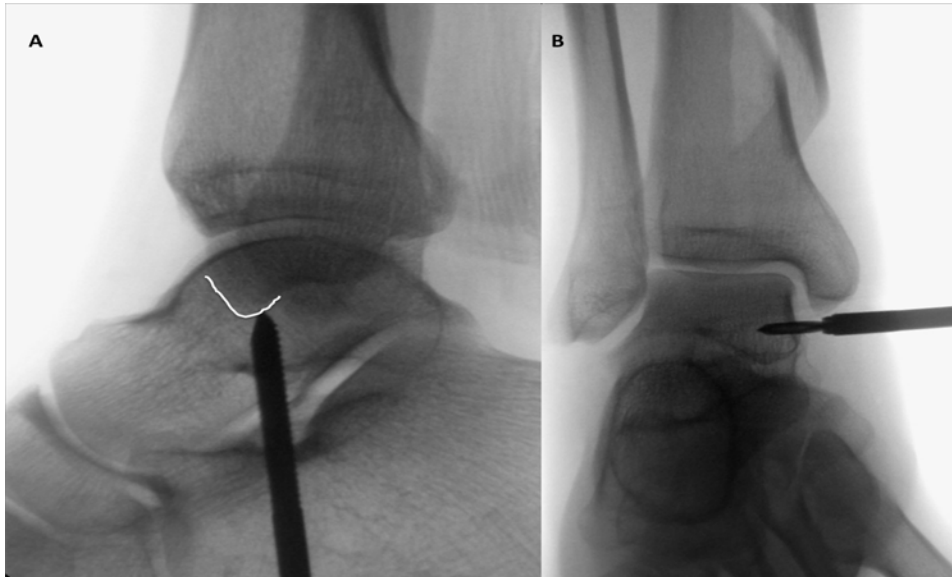


Figure 1

Figure 2

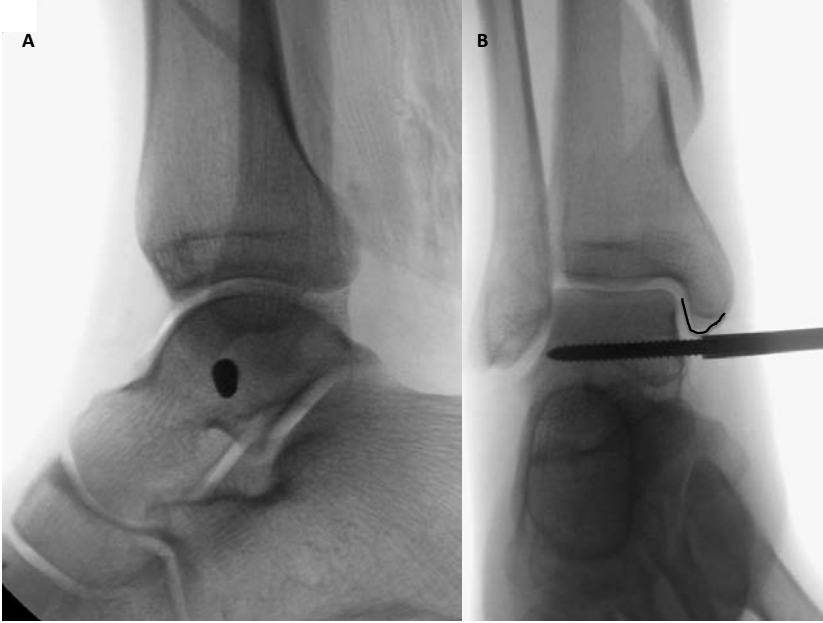


Figure 2

Figure 3

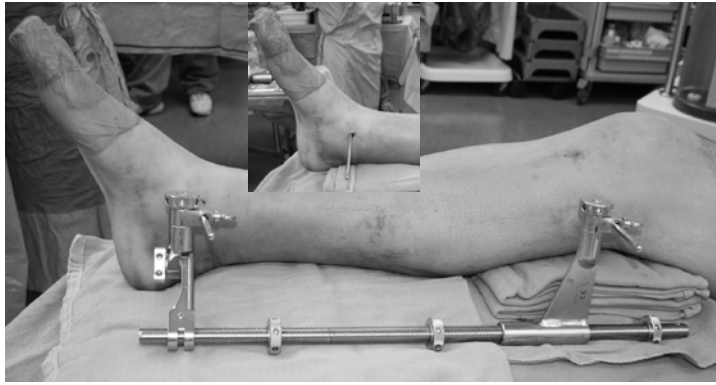


Figure 3