Harris Heel View Is Inadequate to Visualize Screw Prominence of the Medial Calcaneus

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Purpose: The tarsal tunnel contains tendinous and neurovascular structures located medial to the calcaneus. Prominent implants in this area can cause injury and necessitate return to the operating room. Commonly utilized fluoroscopic views do not adequately image this area. The purpose of this study was to determine if a reliable image could be obtained with 2-dimensional (2D) fluoroscopy to identify prominent screw penetration at the medial calcaneus inferior to the sustentaculum.

Methods: A soft-embalmed cadaver was used for the study. The medial calcaneus was exposed, and a Kirschner wire (K-wire) was inserted inferior to the sustentaculum. This K-wire was advanced through the calcaneus and out the lateral aspect of the foot. It was left 1 cm prominent from the medial cortex, directly inferior to the sustentaculum. The cadaver was then placed in the lateral decubitus position on a radiolucent operating room table. A standard 2D C-arm was used to first obtain a Harris heel view, which appeared to show that the K-wire was safely in bone. The angle of the fluoroscopy unit was then gradually decreased to try and find an optimal angle for imaging the medial aspect of the calcaneus.

Results: With the image intensifier perpendicular to the plantar foot, the fluoroscopic view obtained clearly shows the medial aspect of the calcaneus (Fig. 1).

Conclusion: The sustentaculum tunnel view is an easy and reliable method to examine the inferior aspect of the sustentaculum and medial cortex of the calcaneus during calcaneus open reduction and internal fixation using only standard 2D fluoroscopy. This cadaveric study showed that a Harris heel view is inadequate to identify prominent implants inferior to the sustentaculum and may incorrectly reassure the surgeon that implants are in a safe position. The sustentaculum tunnel view can be obtained without excessive manipulation of the foot or fluoroscopy unit, and it is easily obtained in sequence with other common fluoroscopic views. Obtaining this view when placing fixation into the sustentaculum limits iatrogenic complications related to implant placement.