

OTA Tip of the Month – March 2012

Method for Optimizing Imaging During Repair of Proximal Humeral Fractures

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Current techniques for the stabilization of proximal humeral fractures, whether performed by closed reduction and percutaneous pinning, plate fixation, or intramedullary nailing, require intraoperative imaging using a C-arm fluoroscope. For such imaging, the surgeon should consider whether to obtain an axillary lateral or a trans-scapular lateral, because optimal positioning of the C-arm is different.

I prefer to place the C-arm above the head of the table on the ipsilateral side for axillary imaging (Figure 1) for pinning or plating procedures, or to come across the table from the opposite side for trans-scapular lateral imaging during IM nailing. Adequate AP views can be obtained easily using either approach.

It is critical to “practice” these images after patient positioning but before final preparation and draping. Frequently, adjustments in patient positioning are needed to improve visualization of the fracture, and it is easier to do it at this stage than after prepping and draping. Ideally, these practice images are obtained with the same C-arm technologist who will be present during the case.

I’ve found that once images of acceptable quality have been obtained (Figure 2), it is very helpful to place adhesive tape place-markers on the operating room floor to indicate the precise position of the C-arm (Figure 3). This simple step facilitates returning the C-arm back to the exact same physical position that it was in when the “practice” images were obtained. This avoids the time and extra imaging needed to improve poor-quality intra-operative images. The tape is placed to mark the location of the front and outside wheels of the C-arm. When the C-arm is pulled back for prepping and draping, the tape remains to guide its repositioning. (Figure 4) The tape markers are especially valuable if the tech is replaced during the operation.

Figure 1



Figure 2

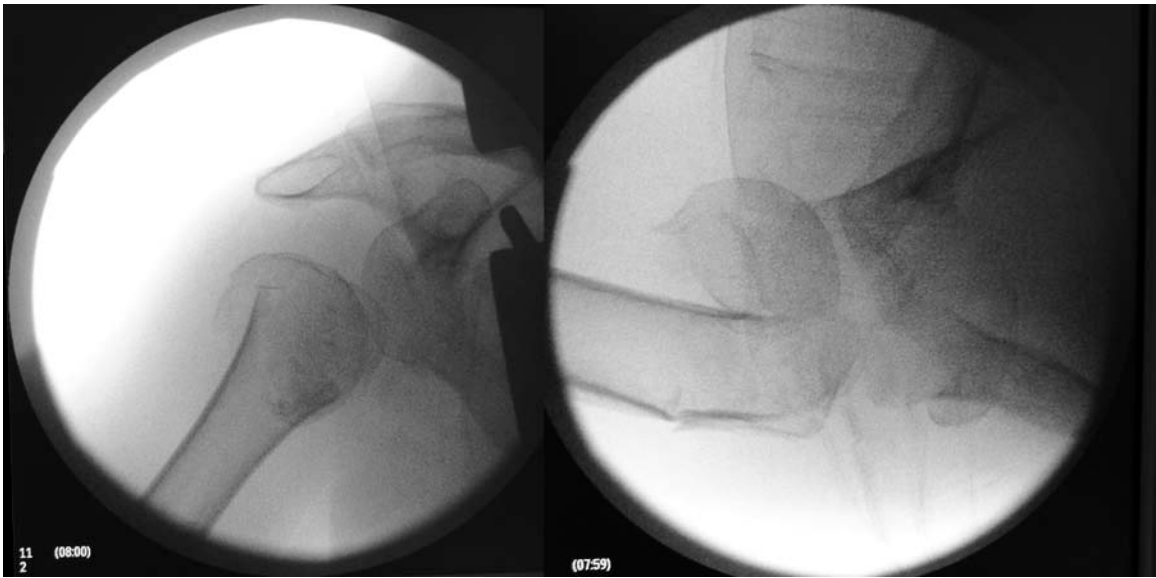


Figure 3



Figure 4

