

Comparison of Fixed and Unmounted Digital Radiography System in Foot and Ankle Practice

J. Speight Grimes, MD, Mitchell Ackerman

Category: Other

Keywords: Digital Radiography

Weight bearing

Radiograph

Introduction/Purpose: Digital radiography (DR) is rapidly replacing conventional and computer radiography. The configuration of DR can vary widely. Two common types of DR seen in outpatient settings are the fixed mounted systems with a motorized arm that contains the imaging plate or a unmounted imaging plate with either a tether or wireless connection to the main console. This study compared the efficiency of the two systems in a foot and practice.

Methods: Two practices that routinely obtain weight bearing foot and ankle radiographs were identified. One used a fixed mounted DR system and the other a unmounted tethered DR system. An observer timed 50 sequential weight bearing radiographs of the foot or ankle at each facility. The time began when the patient was ready for the examination until the final image had been obtained.

Results: The mean time for a foot or ankle image was 224 seconds (SD 93 seconds) for the fixed mounted system and 122 seconds (SD 29 seconds) for the unmounted system. The time difference was statistically significant ($P < 0.001$).

Conclusion: The use of unmounted imaging plates more closely follows traditional techniques for weight bearing radiographs of the foot and ankle. Fixed mounted systems require special equipment and techniques to accommodate the mounting arm. These special needs almost double the time required to obtain the weight bearing radiographs. It is more efficient for foot and ankle practices to use systems with an unmounted imaging plate.

Foot & Ankle Orthopaedics, 1(1)

DOI: 10.1177/2473011416500150

©The Author(s) 2016