

Holding Traction During CT: Simple Tricks to Maintain Reduction in the Lower Extremity

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Introduction

- Traction can provide both temporizing and definitive treatment for anatomic malalignment associated with orthopaedic injuries.
- Post-traction imaging can be crucial for preoperative planning.
- In emergent situations, orthopaedic providers are often forced to choose between holding traction while sustaining radiation exposure versus permitting imaging to be obtained without traction.
- The techniques described here were developed to optimize occupational health and orthopaedic care. The primary aim of this project is to describe these techniques in detail and provide rationale for use.

Technique #1

- Traction is first applied to the patient while in the ED bed.
- A provider or technician must briefly maintain manual traction while the patient is transferred to the CT scanner bed and settled.

- The ED bed is positioned so that it is foot to foot with the CT scanner table, or such that the foot is at an angle up to 90 degrees (Figure 1). The traction apparatus is repositioned on its pulley system to provide in-line traction.
- The weights are reapplied, manual traction is released, and the patient can undergo scanning
- Important to note, a dedicated length of rope for this traction apparatus may be required; the height of the patient bed must be higher than the length of travel of the CT scanner table during use.



Figure 1: Technique #1 utilizing patient bed as counter-weight

Technique #2

- This technique is recommended in the circumstance of a CT imaging room not being able to accommodate an ED bed.
- A single eyebolt is mounted to an adjacent wall in line with either the head or foot of the CT scanner so that the weight of a traction apparatus can be supported (Figure 2).
- Distance is again an important factor: the height of the eyebolt from ground level must be higher than the length of travel that the CT scanner table will translate during operation.

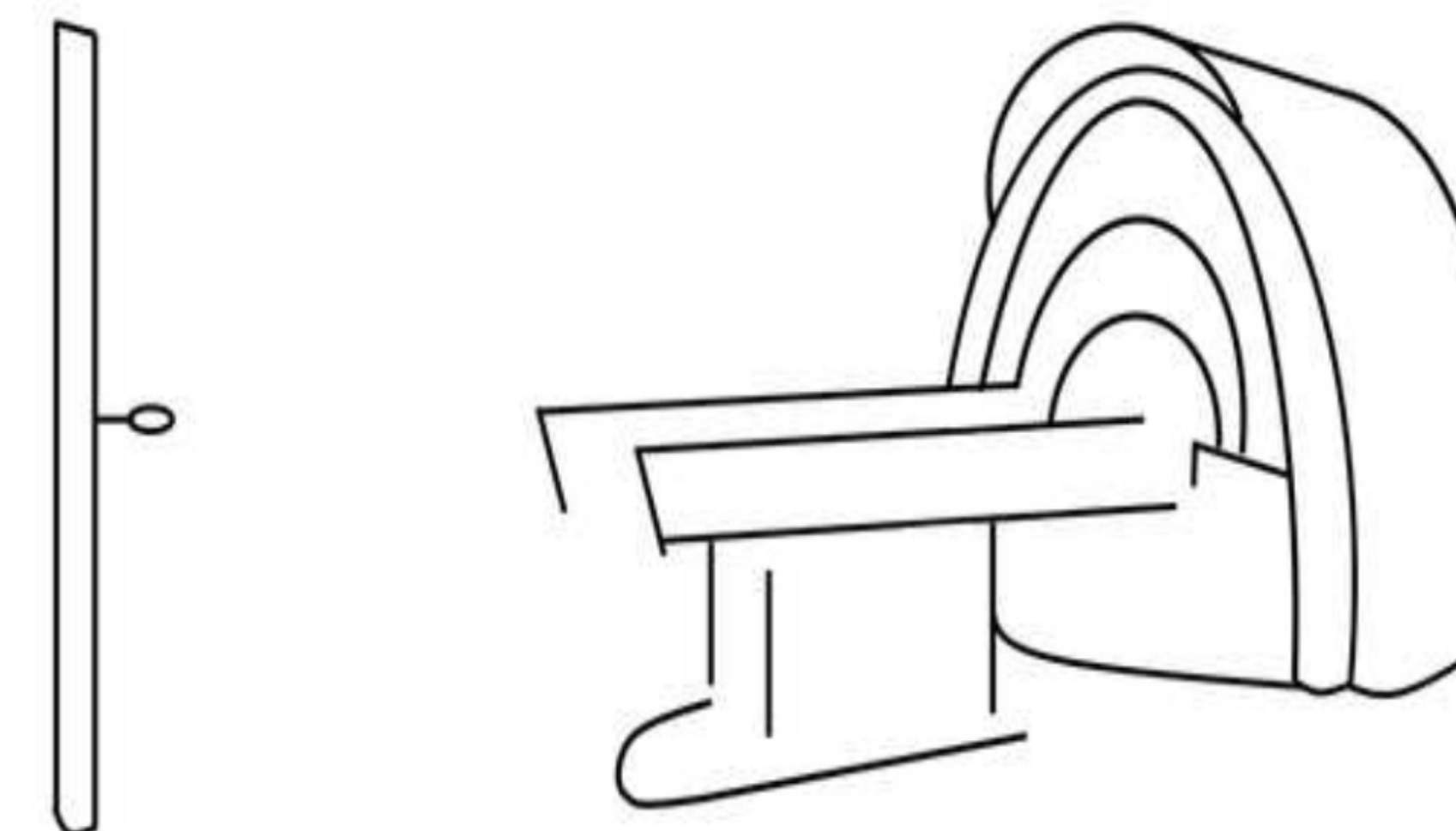


Figure 2: Technique #2 utilizing an eyebolt installed in CT suite

Discussion

- The described techniques provide a means through which traction is maintained without forcing providers to weigh the risk of radiation exposure.
- Implementation may not be feasible based upon the physical configuration of a specific imaging center at a given medical facility.
- An absolute requirement of the eyebolt setup is access to a load-bearing support structure. An appropriate surface may not always be present in the necessary alignment within a given imaging suite.
- The techniques provided offer a roadmap with plenty of room for creative adaption, rather than a one-size-fits-all solution.

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