

# Lateral Decubitus Position for Minimally Invasive Surgery for Correction of Hallux Valgus Deformity: A Technique Tip

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## Introduction

Hallux valgus is one of the most common causes of pain in the foot and one of the most commonly performed procedures by foot and ankle surgeons.<sup>8</sup> Recently there has been increasing interest and research in surgical techniques using minimally invasive surgery (MIS) to correct symptomatic hallux valgus. Percutaneous hallux valgus surgery has showed promising results with excellent clinical and radiographic outcomes for patients.<sup>3,5,7</sup> This procedure is typically performed in the supine position. Given the minimally invasive nature of the surgery, intraoperative fluoroscopic imaging is necessary to aid in osteotomy and screw position. Most surgeons recommend supine positioning of the patient.<sup>1,2,4,9</sup> However, the supine position can present challenges for hand positioning during burr utilization, angular correction of the hallux, and screw placement. We have found the use of the lateral decubitus position during MIS for hallux valgus correction can aid in ease and efficiency of burring, drilling, and screw placement. We present this technique tip to consider in the evolving field of MIS for hallux valgus correction.

## Technique

The patient is positioned on a bean bag in the lateral decubitus position (Figure 1) with the operative side down. The operative leg is positioned off the end of the table to the level of the midcalf. The operative leg is also positioned such that the leg is toward the edge of the bed. Placing the leg at the edge of the bed and then a portion of the leg off the bed allows for ease of access for orthogonal fluoroscopic imaging throughout the procedure (Figure 2). The fluoroscope is usually obtaining the anteroposterior view of the foot, which allows the surgeon to operate over the base plate for the fluoroscopic machine and obtain images while the cuts are being made or K-wires/screws are being placed.

All bony prominences and potential nerve compression sites are well padded, including use of an axillary roll and cushioning under the operative fibular head. The nonoperative knee is flexed, supported with pillows and/or a leg holder, such that it is not overhanging the end of the bed. The positioning can take an extra 5 minutes of time in set-up based on the experience of the operating room staff. All patients that are deemed candidates by the anesthesia staff have an ankle block and receive either sedation or general anesthesia based on the anesthesiologist's clinical judgment.

This technique is primarily for hallux valgus procedures. However, it is not uncommon for patients to have lesser toe deformities that warrant surgical intervention. We have performed hammertoe corrections with either a proximal-interphalangeal joint arthroplasty or a toe tenotomy in this position in addition to minimally invasive bunionette and akinette procedures, although we are not proposing this positioning as a general approach to those procedures at this time.

## Discussion

As MIS hallux valgus surgery evolves, so do techniques for performing these surgeries. During the initial adoption of the third-generation surgical technique, we had some technical issues placing the guide(s) into position, maneuvering the C-arm around the guide(s), and placement of wires. Given these challenges, we sought to analyze our position as an opportunity for improvement in the flow of the

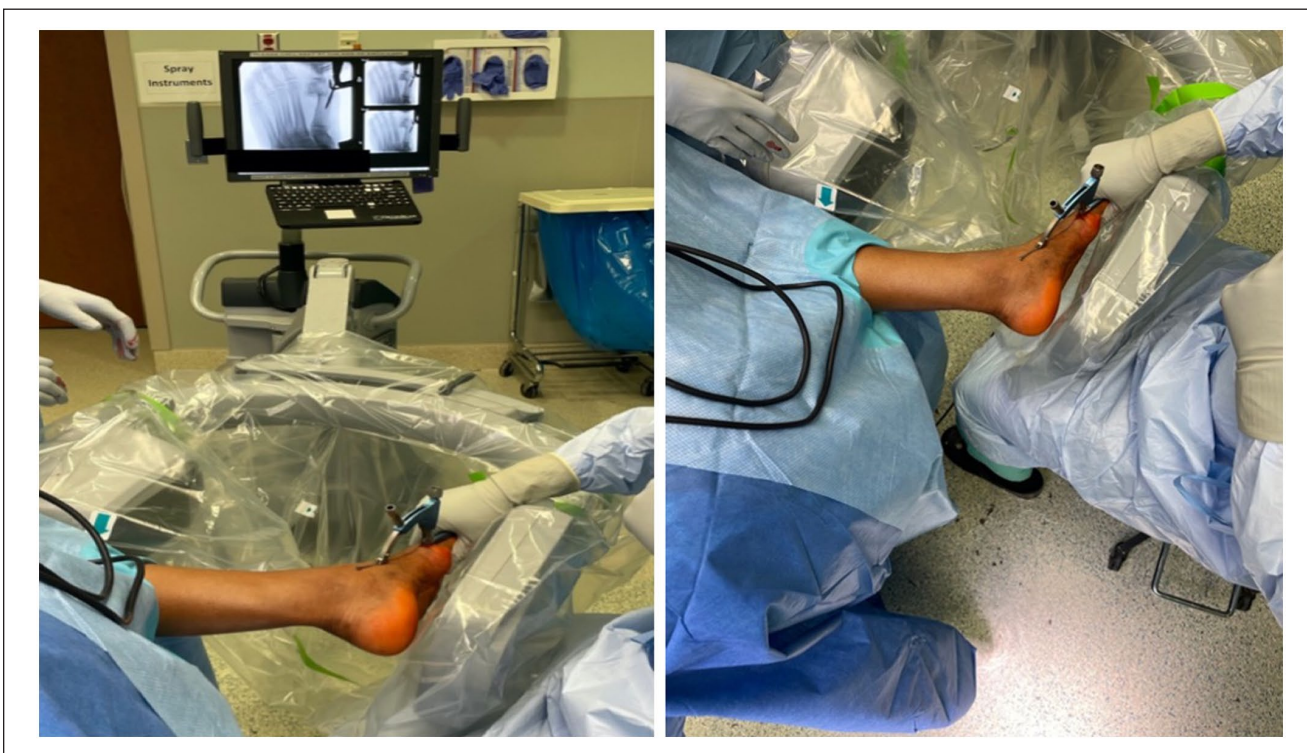
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**Figure 1.** Initial positioning the patient on a lateral decubitus position (left), C-arm on a lateral angle (middle), C-arm on an anterior posterior angle (right).



**Figure 2.** The surgeon is able to manipulate the C-arm to obtain orthogonal views while maintaining the osteotomy and guide position.

procedure. We present a novel positioning technique for MIS hallux valgus surgery. We have not had to convert to any other position during any of the procedures done with a lateral position.

This technique may assist surgeons in creating more reproducible images intraoperatively while making their procedure more predictable and potentially decrease the operating room time. One of the main advantages of placing

the patient in a lateral position is the ability to obtain high-quality orthogonal fluoroscopic imaging during any part of the surgery and reduce radiation exposure and potential surgical field contamination.<sup>6</sup> We hope this technique aids surgeons in their ability to perform more reproducible MIS hallux valgus correction with lower operating room time.

### Ethical Approval

IRB was not required. As no patient identifiers are in the pictures, we are allowed to use clinical photographs without IRB approval.

### Declaration of Conflicting Interests

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