Arthroscopic Hip Patient Positioning Using the Advanced Supine Hip Positioning System

Prepared in consultation with:
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Arthroscopic Hip Patient Positioning
Using the Advanced Supine Hip Positioning System

The purpose of this technique is to distract the patient’s leg to allow access to the central compartment of the hip joint during hip arthroscopy procedures. This technique requires no fine traction adjustments, is efficient, and enables easy alignment of the patient’s pelvis. The technique requires only limited use of fluoroscopy.

The Smith & Nephew Advanced Supine Hip Positioning System utilizes two Universal Hip Distractors, which easily attach to most standard operating room tables. The ball joint of each distractor mast allows the hip to be flexed, abducted or adducted with the turn of the distractor positioning handle, providing control over the patient’s legs during hip arthroscopy. After the hip is repositioned, the system automatically locks into place to prevent movement. A control system allows both fine and gross traction adjustments, although the technique described herein eliminates the need for fine adjustments.
System configurations can be customized by technique and/or surgeon preference. The Advanced Supine Hip Positioning System is described in this technique while Traditional Supine and Lateral Hip Positioning Systems are also available. The Advanced Supine Hip Positioning System requires two Universal Hip Distractors, while the traditional supine system employs one Universal Hip Distractor and one Well Leg Holder.

The Active Heel™ Traction Boot conforms to the patient’s anatomy to securely hold the patient for the duration of a hip arthroscopy case. The design enables the boot to easily detach from the hip positioning system intra-operatively to minimize constraint during dynamic assessment of the hip, and to provide a wide range of motion during dynamic assessment of bony work during femoroacetabular impingement (FAI) procedures. The boot easily attaches to the system via the quick disconnect feature, so the patient can be secured in the boot prior to positioning if desired.

Operating Room Set-up

Position the C-arm display at the head of the operating room (OR) table, with an arthroscopy display above it on the non-operative side. An additional arthroscopy display can be placed to the side of the patient’s head on the operative side.
Technique

Patient Positioning with the Advanced Supine Hip Positioning System

STEP 1
Using two Universal Hip Distractor legs, secure the patient's feet in the Active Heel™ Traction Boots per the Instructions for Use (REF 10600768). If using two Universal Hip Distractor legs with the Leather Boot, refer to that product’s Instructions for Use (REF 10600135).

Note: Ensure that the boot ball joint knob is loose.

Note: If loading the patient's foot in the Active Heel Traction Boot pre-operatively, attach the boots to the distractor legs at this time and complete securing the foot per the Instructions for Use (REF 10600768). If using the Active Heel Traction Boot, ensure that the foot is flat and snug against the bottom of the boot. If using the Leather Boot, ensure that the foot is flat and snug against the foot plate.

To help seat the heel in the Active Heel Traction Boot:

a. Form a C-shape with one hand and place it on top the center strap buckle and pad over the Talus (midfoot).

b. Grasp the loop end of the center strap with the other hand, and pull the center strap in the direction of the patient (towards the perineal post when the leg is straight). Repeat on the other side of the boot.

CAUTION: Do not exceed the Advanced Supine Hip Positioning System's 330 lb./150 kg patient weight limit.

STEP 2
Position the patient so that the perineal post pad is between the legs.

Note: Ensure that the perineal post is well seated and that the patient's genitalia are not folded or compressed against the perineal post.

Note: This may require a manual inspection to ensure that testicles are out of the compression zone and that labia are not folded in the compression zone.

Note: Shield the gonads to protect against radiation during fluoroscopy.

STEP 3
Place the patient's non-operative side arm on an arm board on the operating table in a safe and comfortable position.

STEP 4
Place the patient's operative side arm across the chest, then raise the arm to 90° of forward flexion with a 90° bend at the elbow (Figure 1).

Note: Prop up the arm with towels.

STEP 5
Bring the patient’s gown up and over the flexed arm. Secure the gown with tape (Figure 2).

Note: When taping, bring the tape up and over the arm. Be sure to pass the tape under the elbow, avoiding the ulnar nerve. Then pass the tape over the forearm, and secure the tape.

Note: The tape should come over the arm so that it is well clear of the ulnar nerve. This provides support to the arm that is forward flexed to 90° with an elbow at 90° with internal rotation of the shoulder at 90°. This support does not compress any neurovascular structures and secures the limb safely out of the way.

Start a second piece of tape below the patient on the operative side, bring the tape above the arm, and finish below the patient on the non-operative side.
**Technique (continued)**

**STEP 6**
Loosen the carriage knob and the boot ball joint knob on the non-operative leg.

**STEP 7**
Abduct the non-operative leg approximately 25–30° by turning the distractor positioning handle to adjust the Universal Hip Distractor leg. Flex the leg approximately 20° and pull gentle traction on the non-operative leg. When the desired traction is achieved, tighten the carriage knob (Figure 3).

**Note:** This step balances the pelvis. The pelvis should now be tilted in the direction of the non-operative side.

**STEP 8**
Loosen the carriage knob and the boot ball joint knob of the operative side Universal Hip Distractor.

**STEP 9**
Abduct the operative leg approximately 20°. Flex the operative leg approximately 10–15°. Pull manual traction on the operative leg. When the desired traction is achieved, tighten the carriage knob (Figure 4).

**STEP 10**
**Note:** Ensure that the heel is not lifting out of the boot.
If the patient’s heel is lifting off the sole of the Active Heel™ Traction Boot, release traction, reposition the foot in the boot, and tighten the boot securely.
STEP 11
Adduct the operative leg.

Note: As the leg is adducted, the patient’s leg will flex further. Extend the operative leg to a near-neutral position to achieve traction. Tighten the boot ball joint knob (Figure 5).

Note: As the operative leg extends, feel how much traction is being applied. It should not be necessary to utilize the fine distraction crank to achieve traction.

STEP 12
The OR staff should put on lead shields at this point.

STEP 13
Position the C-arm between the patient’s legs.

STEP 14
Confirm distraction via fluoroscopy.

STEP 15
Prep and drape the patient.

STEP 16
Pull the instrument cords from the arthroscopy tower over the patient. Be sure that the cords remain outside of the x-ray field.

STEP 17
Insert an arthroscopy needle into the joint at the anterior-lateral position. Take one spot x-ray to confirm that the needle is inside the joint.

Note: Ensure that the needle is not going through the labrum.

STEP 18
Proceed with subsequent portal placement and the hiparthroscopy case.
ORDERING INFORMATION

To order the instruments used in this technique, call +1 800 343 5717 in the U.S. or contact an authorized Smith & Nephew representative.

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Key Smith & Nephew device(s) required for technique*

If you currently have two of the Universal Hip Positioning Systems with Leather Boots (REF 72200626) and would like to upgrade to the Active Heel™ Traction Boots, order two of the following:

- 72203992 Active Heel Traction Boot Retrofit Kits for Universal Hip Distractor (1)

Advanced Supine Hip Positioning System†

- 72203990 Active Heel Traction Boot with Universal Hip Distractor** (Leg 1)
- 72203990 Active Heel Traction Boot with Universal Hip Distractor (Leg 2)
- 72201725 Supine Table Attachment with Pad
- 72200631 Perineal Post

Supine Rail Clamps

- 72200636 US Rail Clamps (2)
- 72200670 EU/UK Rail Clamps (2)
- 72200671 Denoyer Rail Clamps (2)
- 72200672 Japanese Rail Clamps (2)
- 72200673 Swiss Rail Clamps (2)

Single-use Disposables

- 72200634 Perineal Post Pad – Supine
- 72200635 Boot Insert Pad (2)

Accessories

- 72200637 Patient Transfer Assembly (for use with supine system only)
- 72200669 Storage Cart
- 72203800 Active Heel Traction Boot Knee Holder

Replacement Parts

- 72202682 Active Heel Traction Boot
- 72203275 Active Heel Traction Boot Replacement Kit – Center Strap Assembly
- 72203345 Active Heel Traction Boot Replacement Kit – Toe Strap Assembly
- 72204017 Active Heel Traction Boot Replacement Kit – Calf Strap Assembly
- 72204018 Replacement Carriage (black sliding mechanism on the boom compatible with the Active Heel Traction Boot)
- 72204677 Active Heel Traction Boot Replacement Kit – Pads Only (includes boot calf pad, boot sole pad and strap pads)
- 72200630 Supine Table Attachment Pad

The technique described requires two Universal Hip Distractors. For instructions related to the Traditional Supine Hip Positioning System‡ (1 Universal Hip Distractor and 1 Well Leg Holder) and Lateral Hip Positioning System, refer to the appropriate Instructions for Use:

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Active Heel is a trademark of Allen Medical.

* For a full list of Hip Positioning System SKUs, see brochure 00328 V2.

** Alternatively, two Universal Hip Distractors with Leather Boots (REF 72200626) can be used for this technique.

† Do not exceed the Advanced Supine Hip Positioning System's 330 lb/150 kg patient weight limit.

‡ Do not exceed the Traditional Supine Hip Positioning System's 400 lb/181 kg patient weight limit.

CAUTION: U.S. Federal law restricts these devices to sale by or on the order of a physician.

References

1. Design Verification Protocol and Report: 15001897
2. Design Validation Protocol and Report: 15001898