

# Avoiding Failure in Hip Arthroscopy

## Complications, Pearls, and Pitfalls



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### KEYWORDS

• Hip arthroscopy • Complication • Revision • Indication • Failure

### KEY POINTS

- Neurapraxias are one of the most common complications following hip arthroscopy, but most are expected to resolve with time.
- Limiting traction time to 1 hour, with an absolute maximum of no greater than 2 hours, will likely reduce the incidence of neurapraxias and skin breakdown.
- Careful insertion of arthroscopic instruments will help to avoid traumatic injuries to intra-articular structures and chondral surfaces.
- Proper patient selection is key to optimizing the chance for a successful postoperative outcome.
- There is a substantial learning curve for hip arthroscopy and receiving specialized training likely helps to reduce the duration of this curve.

### INTRODUCTION

Hip arthroscopy continues to gain popularity as a treatment option for a variety of hip pathologies. A recent national database study demonstrated a 250% increase in hip arthroscopic procedures between 2007 and 2011.<sup>1</sup> Likewise, the indications for hip arthroscopy continue to increase as surgeons become more comfortable with the technology and instrumentation and techniques continue to improve. However, the growth in case volume and innovation has been accompanied by a parallel rise in complications. Postoperative failures are likely multifactorial, with poor patient selection and incorrect diagnoses among the most common contributory factors. In

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this article, the various complications are discussed as well as tips to avoid them. Additionally, reasons for postoperative clinical failure are examined.

## COMPLICATIONS

As with most orthopedic procedures, the complications from hip arthroscopy are diverse and difficult to accurately quantify. When all adverse events are included, an estimated 1.4% to 6.1% of patients will encounter at least 1 complication from hip arthroscopy.<sup>2-5</sup> Fortunately, most of these complications are transient and do not likely impact long-term outcomes.<sup>2,6,7</sup> Included in this list are nerve and vascular injuries and iatrogenic damage to chondrolabral structures, as well as the less commonly seen hip destabilization, loose foreign body formation, skin damage, heterotopic ossification, and abdominal compartment syndrome.

### *Nerve Dysfunction*

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Of all complications, nerve dysfunction is the most commonly discussed, with neurapraxias, nerve compression, and direct nerve injury all potential mechanisms.<sup>2,4,6-8</sup> The lateral femoral cutaneous nerve (LFCN) and femoral nerve are at greatest risk when portals are created anterior to the greater trochanter. The pudendal nerve may be compressed between the pubic rami and perineal post, and the sciatic nerve may be stretched while traction is applied or directly injured during the creation of portals posterior to the greater trochanter. Although the frequency of these complications is likely underreported, most studies place the incidence at 1% to 10%.<sup>2,7</sup> However, a retrospective study by Dippmann and colleagues<sup>7</sup> specifically examined postoperative nerve symptoms and found that 46% (23/50) of patients had nerve dysfunction, but only 18% (9/50) persisted longer than 1 year. Similarly, Pailhé and colleagues<sup>6</sup> noted complete resolution of all pudendal neuralgias between 6 weeks and 3 months postoperatively.

To minimize traction-related nerve complications, the following recommendations have been made<sup>6,8</sup>:

- Lateral decubitus positioning
- A large, well-padded perineal post (8–10 cm) positioned just lateral to the patient's midline toward the operative extremity, which allows the minimum amount of traction necessary
- Distraction via an external distractor
- Generous systemic muscle relaxation
- Less than 50 pounds of traction
- Traction time less than 1 hour, with an absolute limit of 2 hours has been suggested. (Traction time may be minimized by removing the force during prepping and draping and after completion of treatment of central compartment pathology.)

However, as has been seen in previous studies, Dippmann and colleagues<sup>7</sup> noted no significant difference in traction time between patients with and those nerve dysfunction postoperatively (98 vs 100 min,  $P = .88$ ), suggesting that traction is likely only one component of the overall risk. Merrell and colleagues<sup>8</sup> described their positioning technique using a taped, deflated beanbag instead of a perineal post and had zero cases of nerve dysfunction after 30 arthroscopic procedures.

To avoid direct injuries to nerves, careful portal creation and a knowledge of the path of the nerves is imperative (**Fig. 1**). To minimize nerve lacerations, only the skin should be cut with the scalpel followed by blunt penetration of the underlying soft tissues with the trocar and obturator. In 1995, Byrd and colleagues<sup>9</sup> published their findings from a

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