

Portals

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ANATOMY

From an arthroscopic perspective, the hip can be considered to have 3 distinct compartments. Two of these compartments, the central and peripheral, are intracapsular. The central compartment, or femoroacetabular articulation, is the intra-articular compartment of the hip. The peripheral compartment is the extra-articular portion where the femoral head-neck junction, retinacular vessels, acetabular rim, and labrum can be visualized.¹ The third compartment is the lateral compartment or peritrochanteric space.² Lying between the iliotibial band and the greater trochanter, this space allows access to the hip abductors and the greater trochanteric bursa. By understanding the pertinent anatomy and adhering to proper insertion techniques, multiple portals can be used to access each of these compartments.

Once the patient is positioned and appropriate traction applied, a surgical marking pen is used to outline the greater trochanter and anterior superior iliac spine (ASIS). From the ASIS, a line is drawn distally along the anterior aspect of the thigh (Figure 2-1). Staying lateral to this line during portal insertion will help prevent injury to the femoral neurovascular structures.

After the bony anatomy has been outlined, the portal insertion sites should be marked. Multiple portals can be utilized during an arthroscopic hip procedure. While certain standard portals are routinely used, others serve as accessory portals and may only be established for more complex procedures.

Arthroscopic portal insertion is limited posteriorly by the sciatic nerve, anteriorly by the femoral nerve and vessels, and proximally by the superior gluteal nerve. In between these structures lies a relative safe-zone for arthroscopic portal insertion (Figure 2-2).³ While staying within this zone allows safe access to all 3 hip compartments, branches of the lateral femoral cutaneous nerve (LFCN) and the ascending branch of the lateral circumflex femoral artery (LCFA) remain at risk for iatrogenic injury. The relationships between the intra-articular portals and the pertinent anatomy are summarized in Table 2-1.

The LFCN courses distally along the surface of the sartorius muscle before dividing into several branches. This branching pattern can be variable and occurs more proximally in approximately 25% of patients.⁴ When the anterior portal is placed in its traditional location, in line with the ASIS, it passes through the sartorius in close proximity to the LFCN or one of its medial branches.⁵ Moving the entry site of the anterior portal 1 cm lateral to the ASIS places it further lateral, and in doing so appears to place the nerve at a lesser risk.³ Regardless of the insertion site, however, proximal LFCN branching patterns may place a branch of the nerve within millimeters