KEY PROCEDURES

PERCUTANEOUS IN SITU FIXATION OF SLIPPED CAPITAL FEMORAL EPIPHYSIS

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Published outcomes of this procedure can be found at: *J Am Acad Orthop Surg*. 2006 Nov; 14(12):666-79 and *Orthop Clin North Am*. 2006 Apr;37(2): 133-40, v.

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Abstract

Slipped capital femoral epiphysis (SCFE), a common cause of adolescent hip pain, is a displacement of the femoral head through the proximal femoral physis. The exact etiology of SCFE is unknown, but both biochemical and biomechanical factors, including obesity, femoral retroversion, increased physeal obliquity, puberty, and endocrinopathies, play a role. Patients often present with hip, groin, or knee pain and an antalgic gait. On physical examination, obligate external rotation of the lower limb with passive hip flexion is a hallmark of SCFE. The diagnosis is confirmed with radiographs, with advanced imaging reserved for atypical presentations. Any degree of SCFE is an indication for internal stabilization. Percutaneous in situ fixation remains the gold-standard treatment for slipped capital femoral epiphysis. The procedure is performed with the following steps: (1) the patient is positioned supine on a fracture table with the contralateral lower limb in the hemilithotomy position; (2) a 1-cm longitudinal incision is made over the anterolateral aspect of the proximal part of the femur; (3) under fluoroscopic guidance, a guidewire is advanced freehand into the “center-center” of the epiphysis, stopping approximately 3 mm short of the articular surface; (4) the guidewire is overdrilled, and a 6.5-mm partially threaded cannulated screw of appropriate length is inserted into the epiphysis; (5) the proximal part of the femur is brought through a full range of internal-external rotation under fluoroscopy to confirm that the screw has not violated the joint cavity; and (6) the wound is closed in layers and a sterile dressing is applied.

Postoperatively, the patient’s weight-bearing status is advanced on the basis of the stability of the SCFE. Radiographic follow-up is performed at six-month intervals to monitor the contralateral hip until skeletal maturity. Treatment outcomes and complications such as osteonecrosis and chondrolysis correlate with the severity and stability of the

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slip on presentation. Long-term follow-up has shown good-to-excellent outcomes after in situ screw fixation of stable slips.

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