

# Challenges in Sports Medicine & Orthopedics

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Figure 1



Figure 2



Figure 3

A 12-year-old female competitive dancer presents with a 3-month history of persistent pain in her right anterior thigh. She was seen by her primary care physician; radiographs and MRI of the right thigh were completed and were noncontributory. She was referred to physical therapy but was unable to finish her treatment due to persistent and increasing pain in her thigh. As part of your workup, you order radiographs of the pelvis and right hip (Figures 1, 2, and 3).

**What is your interpretation of these images?**

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## ANSWER



Figure 1



Figure 2

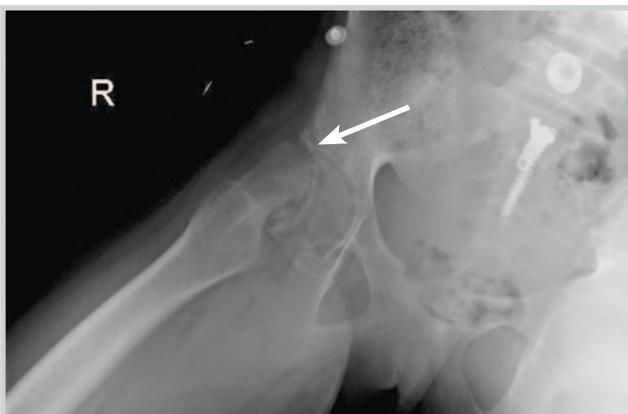


Figure 3

The radiographs of the pelvis and right hip reveal a slipped capital femoral epiphysis (SCFE). This disorder most commonly occurs in adolescents ages 12 to 15 years,<sup>1</sup> often in patients who are overweight or obese. Epiphyseal slippage results from mechanical forces being applied to the hip joint, causing shear stress across thick growth plate cartilage—in combination with the decreased stability of the physis in an adolescent. SCFE most often presents as a limp<sup>1</sup> that is frequently accompanied by slight external rotation of the affected extremity during ambulation. The affected patient's gait represents a compensatory response to a posterior and medial dislocation of the slipped epiphysis. SCFE is a leading cause of premature osteoarthritis in young adults<sup>2</sup>; therefore, it is imperative that any clinician examining an adolescent with a limp also complete a thorough exam of the hip of the affected extremity. When the diagnosis is missed and treatment is delayed, a limb length discrepancy may result, with the affected leg remaining shorter than the contralateral leg.

During examination, pain is usually noted with abduction and internal rotation of the hip. Anteroposterior radiographic views of the pelvis and the affected hip may not reveal the slip; the “frog-leg” view is more helpful for making the diagnosis. Screw fixation across the physis is usually recommended for patients with a slipped epiphysis. If radiographs are negative but clinical suspicion for SCFE remains high or if MRI reveals a nondisplaced physis fracture (Salter-Harris type I), conservative management with close follow-up can be initiated. Strict non-weight bearing of the affected extremity for 6 to 8 weeks or until symptoms resolve is necessary for nondisplaced Salter-Harris type I fractures of the hip physis, with repeat radiographs completed frequently (every 2 weeks) during management.

Surgery was performed in this patient, but final outcome remains undetermined until after adolescence, when her growth is complete.

## REFERENCES

1. Maffulli N. The younger athlete. In: Brukner P, Khan K. *Clinical Sports Medicine*. 2nd ed. New York, NY: McGraw-Hill; 2001:chap 35.
2. Rab GT. Pediatric orthopedic surgery: hip disorders. In: Skinner H. *Current Diagnosis & Treatment in Orthopedics*. 4th ed. New York, NY: McGraw-Hill; 2006:602-612.