



A boy with a limp

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A 15-year-old boy was evaluated for short stature and increasing weight gain. On the basis of an elevated thyroid stimulating hormone (TSH) value, palpable thyroid gland, and presence of thyroid antibodies in significant titres, he was diagnosed to have juvenile hypothyroidism secondary to autoimmune thyroiditis. He was started on replacement levothyroxine therapy at a dose of 700 mcg/week/m² of the calculated body surface area.

Three months later, the boy was brought to the hospital with complaints of a limp associated with pain on bearing weight on the right hip. On re-examining his blood, he had normal TSH values, and he was compliant with his medications. An X-ray of the hip was obtained. (Figure 1).

Figure 1



What is the diagnosis?

Diagnosis and discussion

Analysis of anteroposterior radiographs demonstrates a medioinferior slipping of the capital femoral epiphyses and an increase in the width of the growth plate and articular cartilage. This is consistent with the diagnosis of a *slipped capital femoral epiphysis* (SCFE).

SCFE is defined as a posterior and inferior slippage of the proximal femoral epiphysis on the metaphysis (femoral neck), occurring through the physeal plate during the early adolescent growth spurt. It is the most common hip disorder in adolescents and the aetiology is thought to be a combination of endocrine and biomechanical factors.¹ The diagnosis may be missed because occasionally the pain is localised to the knee or the groin. This delay results in a less favourable long-term prognosis.²

The diagnosis of SCFE should always be considered when a physician is assessing the causes of limp and/or hip, thigh, and knee pain in children.

There are many theories as to the cause of SCFE. Most likely, SCFE is caused by multiple factors including local trauma, obesity overcoming the physeal plate (growth plate), inflammatory factors, and possible endocrine abnormalities (increased incidence seen in hypothyroidism, panhypopituitarism, renal osteodystrophy).

Obesity seems to be the strongest risk factor for SCFE, and in this case it is believed that the child's increased weight caused excessive mechanical stress on the physis (growth plate).³

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References:

1. Loder RT. Slipped capital femoral epiphysis. *Am Fam Physician*. 1998;57:2135–42.
2. Kocher MS, Bishop JA, Weed B, et al. Delay in diagnosis of slipped capital femoral epiphysis. *Pediatrics*. 2004;113:e322–5.
3. Loder RT, Wittenberg B, DeSilva G. Slipped capital femoral epiphysis associated with endocrine disorders. *J Pediatr Orthop*. 1995;15:349–56.