

Hashimoto's hypothyroidism presenting with SUFE (slipped upper femoral epiphysis)

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DESCRIPTION

A healthy 12-year-old girl presented to the emergency department with a 6 week history of atraumatic limp with left lower limb pain. An examination revealed limited range of movement at the left hip joint. Hip X-ray showed left slipped upper femoral epiphysis (SUFE) (figure 1), severity of which was assessed on CT scan.

Thyroid functions were performed preoperatively due to short stature (0.4th–2nd centile), overweight (>50th centile) and coarse facial features (figure 2). Results confirmed autoimmune (Hashimoto's) hypothyroidism with thyroid stimulating hormone (TSH) >300 mIU/L (0.2–4), free thyroxine 2.6 pmol/L (10–25) and raised thyroid antibodies of 229 IU/mL (<100). Following referral to the paediatric endocrine team, a detailed history revealed static growth for 2 years, weight gain and tiredness. Bone age was delayed by 2 years, suggesting longstanding hypothyroidism.

She was started on levothyroxine, and open reduction and femoral neck osteotomy were deferred until TSH improved, due to the risk of postanaesthetic coma secondary to severe hypothyroidism. Clinical and biochemical euthyroidism was achieved by 4 weeks.

She attained menarche 3 weeks into treatment. A gonadotrophin-releasing hormone analogue was initiated to arrest puberty in an attempt to maximise height, as ovarian activity and increased growth from restoring euthyroidism result in rapid bone turnover and epiphysal fusion.¹

SUFE has historically been linked with endocrinopathies, especially hypopituitarism and hypothyroidism.² In around 30% of patients with SUFE the



Figure 2 Coarse facial features suggestive of hypothyroidism.

contralateral hip also becomes involved over time and fixing the other hip prophylactically (figure 3) is often favoured.³ Uncertainty exists about future growth, as fixing the contralateral hip may result in leg length discrepancy due to epiphysiodesis effect.



Figure 1 Kline's line (aka Trethowan's sign) is drawn along the femoral neck on an anteroposterior radiograph and should pass through the lateral margin of the femoral head (arrow). If the upper femoral epiphysis has slipped the line does not.



Figure 3 Postoperative film showing prophylactic fixation of right and slipped epiphysis fixation on left.



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Learning points

- ▶ It is important to consider hypothyroidism in a child with slipped upper femoral epiphysis (SUFE), who is short, obese or lethargic.
- ▶ Although moderate hypothyroidism causes delayed puberty, precocious or accelerated puberty is seen in severe hypothyroidism where thyroid stimulating hormone possibly acts as a gonadotrophin.
- ▶ It is important to be aware of the risk of SUFE in the contralateral hip and consider fixing this prophylactically.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Cabrera SM, DiMeglio LA, Eugster EA. Incidence and characteristics of pseudoprecocious puberty because of severe primary hypothyroidism. *J Pediatr* 2013;162:637–9.
- 2 Puri R, Smith CS, Malhotra D, *et al.* Slipped upper femoral epiphysis and juvenile hypothyroidism. *J Bone Joint Surg* 1985;67:14–20.
- 3 Hansson G, Nathorst-Westfelt J. Management of the contralateral hip in patients with unilateral slipped upper femoral epiphysis. *J Bone Joint Surg* 2012;94:596–602.

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