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Guest Editorial

A Limping Child an Opinion

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The parents of a three-year old boy present to the surgery concerned about their son's limp.

What you should consider

Pain which may be direct (i.e. from anywhere in the leg) or referred (e.g. from the testicles, abdomen or back); also consider weakness and/or a deformity.

Age:

- Normal rhythmic gait cycle is established at around the age of seven-so the younger the child the more difficult it is to assess gait.
- In children under three, consider developmental dysplasia of the hip in a child that is otherwise well, and septic arthritis/osteomyelitis in a systemically unwell child.
- Between 3 - 10 years, common causes of limping include trauma and transient synovitis. Less common, but an important cause includes avascular necrosis of the femoral head (Perthes' disease).
- Osgood-Schlatter disease (osteochondritis of the knees) and slipped upper femoral epiphysis (especially if the child is obese) should be considered in children aged 10 - 15 years; both are often bilateral.

Enquire about birth history: Breech delivery may be associated with developmental dysplasia of the hip and anoxia may result in cerebral palsy.

Are there systemic symptoms?

Reactive arthritis can follow a sore throat and/or diarrhoea. Fever, anaemia, weight loss and loss of appetite may suggest a serious underlying cause. An acute limp (less than 2 days) with pain when not weight bearing suggests infection or malignancy (e.g. neuroblastoma and primary/secondary bone tumours). Henoch-Schönlein purpura is associated with a rash on the buttocks/legs.

Ask if the child and/or parents about joint pain and/or stiffness

Although single joint involvement can occur in a well child with juvenile idiopathic arthritis, multiple joint involvement makes this diagnosis more likely, particularly if associated with early morning stiffness. In a child less than 18 months several joints can be infected, as blood can permeate the epiphysis.

Consider ethnicity

Think of sickle cell disease in Black children, and TB and rickets in South Asian children.

Remember the possibility of non-accidental injury.

What you should do

Check for temperature, evidence of anaemia or a rash-all suggest a possible systemic cause.

Examine the leg and joints

Check for restriction of movement, swelling, erythema and tenderness (e.g. from a spiral undisplaced fracture of the tibia). Painless restriction to abduction of the hip in a child less than 3 years of age suggests developmental dysplasia of the hip.

Ask the child to bend and straighten the knee and feel for crepitus. With inflammation or infection of the hip, joint movements are restricted and painful, particularly internal rotation of the hip in flexion, which is a more sensitive marker than abduction of the hip as a child may tilt the pelvis giving a false impression of abduction.

Observe the spine from the side and behind for any abnormal curvature/pain, whilst asking the child to bend down and touch his toes.

Examine gait: This is best done from the front, behind, and whilst the child is standing on tiptoes and running. Look for a shortened 'stance phase' in the gait cycle in which the child 'hurries off' one leg to offload the source of pain. Monitor facial expressions for signs of discomfort/pain.

Carry out Gower's manoeuvre whereby the child rises from a squatting position helps to reveal proximal muscle weakness.

Check the testicles for evidence of torsion, the groins for hernias and the abdomen for any unexpected lumps and bumps.

Beware of classing persistent limp as 'growing pains' as limp is not a feature of these transient aches and pains of unclear aetiology.

Observe for a week if transient synovitis is suspected. Here the child is well, afebrile, mobile and has normal blood tests, but is limping. Treat with analgesia and advise rest. Have a low threshold for further investigations or referral, if symptoms worsen or change, as this may indicate Perthe's disease.

Consider imaging: In suspected developmental dysplasia of the hip, request an ultrasound for a child below nine months of age; older children will need an x-ray because of a bony ossification nuclei in the hip. An ultrasound can also help in detecting a hip effusion in transient synovitis. An ultrasound of the abdomen can be carried out at the same time and may help exclude pain radiating from pathology in the spine, adrenals or kidneys (absence of haematuria would be reassuring). Consider an x-ray if the ultrasound is normal; in a child aged 3 - 9 years, an antero-posterior view of pelvis will help rule out Perthe's disease, but for suspected slipped upper femoral epiphysis also request a lateral view.

Blood tests: Request a FBC, ESR, CRP, CPK, tests for rheumatological disorders/sickle test, and blood cultures, as appropriate.

Urgently refer suspected developmental dysplasia of the hip, a painful non-weight bearing joint, a systemically unwell child of less than 3 years or any child with fever, anaemia, weight loss, bone/joint tenderness, rash and suspected testicular torsion. If juvenile inflammatory arthritis is suspected refer to a paediatric rheumatologist/ophthalmologist as anterior uveitis is a risk.

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