Suggested approach to atraumatic limping child

HISTORY

Ask about:

- Onset of symptoms
- Features suggestive of:
  - sepsis
  - NAI
  - Malignancy
  - Reactive arthritis
  - JIA
- Parental concerns
- Development and growth

EXAMINATION

- General examination
- Examination of whole limb
- pGALS MSK screen
- Regional MSK examination
- Neurological examination
- Temperature
- Urinalysis

INVESTIGATIONS

If red flags are present undertake:

1. **Blood tests:** FBC (+ blood film), CRP, ESR, blood cultures.
2. **Plain X-rays:** Symptomatic joint + contra-lateral. Consider x-raying adjacent joints if origin of pain is uncertain. For hip x-rays - request frog-leg views *
3. **Hip USS:** Request urgently. If no effusion present on USS, septic arthritis unlikely.

RISK FACTORS FOR SEPTIC ARTHRITIS#

1. History of fever of > 38.5^{o}C
2. Non-weight bearing
3. Serum WCC > 12x10^{-9}
4. ESR > 40mm/h or CRP > 20 mg/l

Risk of septic arthritis increased if **effusion on USS** or if **> 3 risk factors**

- Admit under shared paediatric / orthopaedic care.
- Urgent joint aspiration. Synovial fluid for microscopy / Gram stain & culture.
- If > 50 x 10^{9}/l WCC ± bacteria in aspirate - commence IV antibiotics urgently**

2 risk factors – 40% risk of septic arthritis

- Admit under shared paediatric / orthopaedic care.
- If systemically unwell, severe restriction of joint movement – discuss with paediatric / orthopaedic consultants as urgent joint aspiration may be necessary.

0 or 1 risk factor only – risk of septic arthritis is very low

Systemically well, temp < 37.5^{o}C, full weight bearing, no red flags, full range movement, normal FBC / ESR.

NO

YES

- Analgesia, open access to ward
- Arrange paediatric review in 48 hrs.
- If still symptomatic, re-examine & screen all joints (pGALS as a minimum)
- Consider repeat bloods (FBC, ESR, CRP), Mantoux test, Lyme serology and imaging.
- **If symptomatic for > 2 weeks OR before contemplating invasive procedures (e.g MRI, bone scan, arthroscopy) refer to paediatric**

Red flags:
Systemically unwell, temperature >38.5^{o}C, non-weight bearing , reduced range / asymmetry of joint movement, focal bone or joint tenderness, "Pseudoparalysis" , red, warm, hot joint, pallor / bruising, lymphadenopathy and organomegaly

*If x-ray abnormal or suggestive of fracture, SUFE / Perthes – refer to orthopaedics

**If microscopy negative, treat as transient synovitis: regular analgesia, mobilisation, open access, regular OP review until symptoms resolved. Advise to consult if high fever / unwell. If symptoms persist for > 3 weeks refer to paediatric rheumatology.

based on Kocher's clinical prediction rule and validated to differentiate between septic arthritis and reactive arthritis at the hip

References

1. Kocher MS, Zurakowski D, Kasser JR. Differentiating between septic arthritis and transient synovitis of the hip in children: an evidence-based clinical prediction algorithm. Journal of Bone and Joint Surgery of America 1999; 81(12):1662-70.

2. Kocher MS, Mandiga R, Zurakowski D et al. Validation of a clinical prediction rule for the differentiation between septic arthritis and transient synovitis of the hip in children. Journal of Bone Joint Surgery of America 2004 Aug; 86-A (8):1629-35.