

WOMEN'S HEALTH AND PAEDIATRICS  
 PAEDIATRIC DEPT

**Acutely Limping Child and Septic Arthritis**

Amendments			
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July 2012	New Guideline		
March 2018		Whole document review – no changes	Paediatric Guideline Group

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**In Consultation with:**

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**Target Audience:** Doctors, nurses and support staff  
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**Impact Assessment Carried  
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## **Acutely Limping Child and Septic Arthritis**

### **Assessment of limping child (beware the child who does not weight bear at all):**

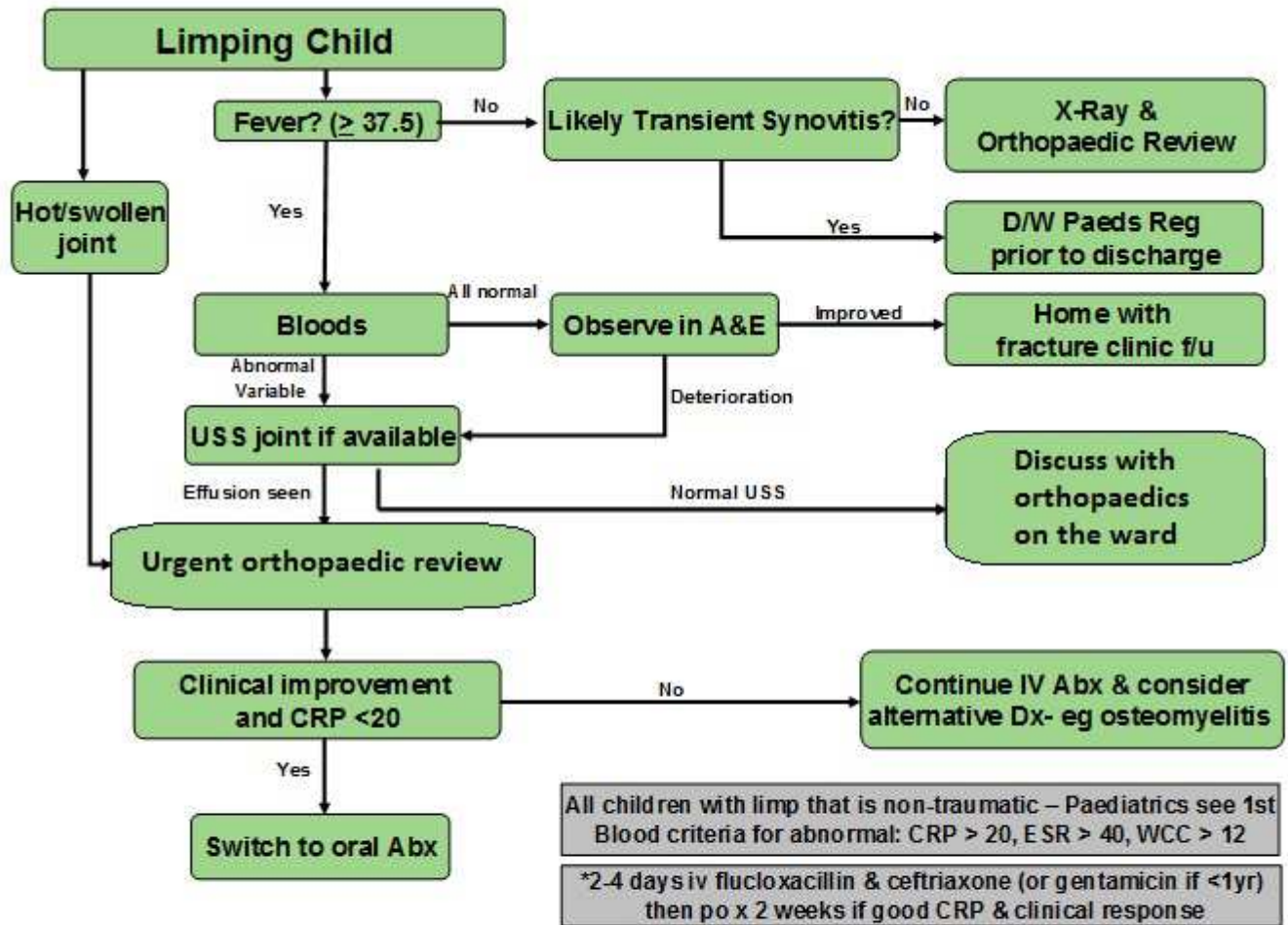
#### **History**

- Careful history of any significant injury, or recent viral illness
- Ask about any related symptoms e.g. pain or swelling of other joints, rashes, bruising, fever, weight loss, pain progressing or waking child at night
- Note any recent antibiotic treatment
- In NAI there may be no history of injury given by the parent

#### **Examination**

- The child must be undressed, including socks and shoes
- General appearance of child well/unwell
- Temp, HR, RR, BP, O2 sats
- Gait: Ask the child to walk towards you, and assess the gait
  - A limp may become more obvious when the child runs
  - If the child can kneel or crawl, their pathology is likely to be below the knee
- Examine the legs for swelling, bruising or deformity or decreased muscle mass
- The feet should be examined, including the soles, and between the toes
- Check for tenderness or increased temperature of bones or joints
- Check range of movements of joints and if movement is limited by pain
- Lower limb reflexes should be checked and full neurological exam if indicated
- The back should be examined for scoliosis and bony tenderness
- The pelvis and sacroiliac joints should also be examined
- The abdomen should be examined, looking for any masses, scars, tenderness  
hepatosplenomegaly, herniae, inguinal lymph nodes and scrotal swellings
- If there is bruising or a petechial rash, the child should be examined for lymph nodes
- The chest should be auscultated as pneumonia can cause pain, and may occasionally lead to an altered gait

The following flow diagram refers to a child who is thought to have HIP PATHOLOGY ONLY.



IF A CHILD IS TO BE DISCHARGED THEY SHOULD BE GIVEN A LIMPING CHILD DISCHARGE ADVICE LEAFLET

NB: ORTHOPAEDIC REVIEW IS AS AN OUTPATIENT UNLESS SEPTIC ARTHRITIS IS SUSPECTED

## Septic Arthritis- Clinical Guideline

Background: Septic arthritis is a surgical emergency caused by bacterial infection of one or more joints. Accurate and rapid diagnosis is essential to avoid delay in treatment which can cause permanent damage to the joint and long term disability.

Infection of a joint may occur at any age and most commonly affects the hip joints and knees. Most cases of septic arthritis are monoarticular (hip, knee, ankle or elbow), but in 10% of cases multiple joints may be involved. Occasionally osteomyelitis and septic arthritis can co-exist. This occurs when the metaphysis is intra-articular with a thin periosteum (such as the hip, shoulder, ankle and wrist). Vascular connections between the metaphysis & epiphysis make infants with osteomyelitis particularly prone to arthritis of the adjacent joint.

The most common causative organisms are *Streptococci* and *Staphylococci* but other bacteria that can cause septic arthritis include: Salmonella, E. coli, Lyme etc.

The gold standard for diagnosis is joint aspirate which will show a WCC>50 and culture will usually identify the causative organism (if taken before antibiotics are commenced).

Septic arthritis should be considered as a differential in all children who present with an acute limp. However, non-traumatic limp is a much more common presentation than septic arthritis. The majority of these will be caused by transient synovitis (irritable hip) or reactive arthritis. However, there are important differentials to consider in any child with an unexplained limp: see below.

### **Children with septic arthritis usually present with typical features:**

- fever>38C
- refusing to weight bear/limping
- hot & swollen joint with effusion
- pseudoparalysis/ asymmetric movement of limb (early sign in infants/neonates)

However, there may be misleading factors:

- pain may be referred to the knee
- hip effusion is hard to rule out on physical examination alone

Assessment of cases: Children with **non-traumatic** limp should all be seen by Paediatrics first and then referred on to Orthopaedics if appropriate.

**All children with fever** and limp/swollen joint must have a diagnosis of SA considered and should have the following investigations:

- **FBC** (WCC<12 counts against SA)
- **ESR** (ESR<40 counts against SA)
- **CRP** (CRP<20 counts against SA)

If bloods are abnormal then they should have an **Ultrasound** if available and **Ortho RV**, with **aspiration of the joint** if an effusion is seen. They should also be reviewed by orthopaedics if the ultrasound is negative to rule out other causes.

**X-ray** (if effusion may see joint space widening. Main use is to look for signs of osteomyelitis/tumour/SUFE/Perthe's)

**Management of Septic Arthritis:** If abnormal blood results/ultrasound, the child should have **urgent** joint aspiration and washout followed by IV ceftriaxone and flucloxacillin (Gentamicin & flucloxacillin if <1yr old).

If penicillin allergic: Clindamycin. Change according to sensitivities. Consider changing antibiotics if clinical and laboratory progress suboptimal.

If good response (clinically AND improving CRP) change from IV to oral antibiotics (eg high dose clindamycin or co-amoxiclav) may be considered from day 2 (when culture results available). Oral antibiotics should continue for a total of 2 weeks minimum with orthopaedic follow-up in all cases. Paediatric physiotherapists should be involved from an early stage of admission.

**In children with limp but no fever** the differentials below should be considered and investigations chosen as appropriate:

Differential	Suggestive features	Investigations
<b>Osteomyelitis</b>	<ul style="list-style-type: none"> <li>• often more insidious pain</li> <li>• more localised to bone than joint</li> <li>• may co-exist with septic arthritis</li> </ul>	<ul style="list-style-type: none"> <li>• MRI (if will tolerate)</li> <li>• Bone scan (if unable to tolerate obtain MRI)</li> </ul>
<b>Transient synovitis/'Irritable Hip'</b>	<ul style="list-style-type: none"> <li>• Viral prodrome</li> <li>• Well child</li> <li>• Usually weight bearing</li> </ul>	<ul style="list-style-type: none"> <li>• No diagnostic test</li> <li>• Can have effusion (sterile)</li> </ul>
<b>Bone tumour/leukaemia</b>	<ul style="list-style-type: none"> <li>• Pain- often worse at night</li> <li>• Bruising etc.</li> <li>• Wt loss</li> <li>• Night sweats</li> </ul>	<ul style="list-style-type: none"> <li>• FBC &amp; film</li> <li>• LDH, urate</li> <li>• X-ray</li> <li>• MRI</li> </ul>
<b>Psoas abscess</b>	<ul style="list-style-type: none"> <li>• Fever</li> <li>• Pain on hip flexion</li> <li>• Often insidious</li> </ul>	<ul style="list-style-type: none"> <li>• Abdo USS</li> </ul>
<b>Appendicitis</b>	<ul style="list-style-type: none"> <li>• Abdominal pain etc</li> </ul>	<ul style="list-style-type: none"> <li>• Surgical opinion</li> <li>• Abdo USS</li> </ul>
<b>Slipped upper femoral epiphysis</b>	<ul style="list-style-type: none"> <li>• Early teens</li> <li>• Obesity</li> <li>• Hypothyroidism/T21</li> </ul>	<ul style="list-style-type: none"> <li>• Hip x-ray</li> <li>• Orthopaedic opinion</li> </ul>
<b>Perthe's disease</b>	<ul style="list-style-type: none"> <li>• Younger child</li> <li>• Male</li> <li>• Chronic</li> </ul>	<ul style="list-style-type: none"> <li>• Hip x-ray</li> <li>• Orthopaedic opinion</li> </ul>
<b>Cellulitis</b>	<ul style="list-style-type: none"> <li>• Cutaneous signs</li> </ul>	<ul style="list-style-type: none"> <li>• Culture (blood/skin)</li> </ul>