Common Problems in Children’s Orthopaedics – When to refer?

Mr Mike Uglow FRCS (Tr & Orth)
Southampton University Hospitals
Presentation due to problems of...

- Appearance
- Pain
- Function
When to refer
Topics

- Idiopathic pains of childhood
- Limping child
- Lower limb malalignment
  - Bow legs
  - Knock knees
  - Rotation
- Patella instability
- Infant hip examination
- Foot shape issues
Idiopathic pains of childhood

- Real
- Mainly centred around knee in young child
- Night time
- Normal joint motion
- No muscle spasm

- If persistent
  - FBC
  - Vitamin D
  - CRP
Calf tightness
Hamstring – popliteal angle
Twice daily stretches
The limping child

- 5 yr old
- 2/52 URTI
- 1/52 limping
- Points to left leg

- Identify whether…
  - Well
  - Pyrexia
  - Spasm
    - Hip
    - Knee
    - Ankle
  - Splinter
  - Trauma Hx
The limping child

- 3 yr old
- Limp
- Not quite right
- Some ache/pain

- Irritable
- Sore throat
- Limp/reluctant
- Pyrexia 38°C
- Spasm on hip rotation
- ROM sl. reduced
The limping child

- Age 5yr
- Limping 24/48 hrs
- Pain
- Unwell
- Lying still
- Pyrexia
- Limb pseudo paralysis
- Severe pain on movement
- Joint tender
When to refer
When to refer

- Unwell
- Pyrexia
- Joint swelling
- Spasm or pseudo paralysis
- Persistent
- Progressive
When to refer

- Well
- Progressive
- Persistent
- Excessive
- Joint swelling
- Reduced joint motion
Transient synovitis

- Usually <9 yrs
- (Associated URTI)
- Limp
- Joint pain
  - Hip
  - Knee
  - Ankle
- Well
- Apyrexial
- Limp
- Spasm
  - Hip rotation
  - Knee flex/ex
  - Ankle DF/PF
Septic arthritis – 1 or 2
Criteria for admission to hospital
Taylor & Clarke

- Severe spasm
- Tenderness
- Pyrexia $\geq 38 ^\circ C$
- ESR $\geq 20$ mm/hr

- specificity 91%
- sensitivity 95%
- for sepsis

- CRP
Chickenpox with joint pain

- **Group A Streptococcus**
  - Osteomyelitis
  - Septic arthritis
The limping child

- 6 yr old
- Right knee pain
- Intermittent limp
- Sometimes stops playing
- Can wake at night
- 6 weeks
Knee pain comes from the HIP until proven otherwise.
Perthes
Clinical features

- Pain & Limp
  - Intermittent
  - Activity related

- ROM
  - Reduced
  - Spasm

- Leg length discrepancy
  - 2 cm
Shortening and Limited Abduction
Perthes

- **Maintain movement**
  - ROM exercises
  - Physio
- **Reduce impact**
  - Walking
  - Swimming
  - Cycling

- NSAIDs/Calpol
- Bed rest
- Admission
  - Traction
  - Arthrogram
  - Surgery
The limping adolescent

- Age 13 yrs
- Thigh and knee pain
- 4 months
- Often off games
- Not keeping up with peers
What to examine…?

- Leg posture
- External rotation
- Gentle rotation of extended leg
- Spasm
- Leg length
- Shorter
Knee pain comes from the HIP until proven otherwise
Referral

- If any doubt exists about the hip
- Acute
  - Phone referral
- Not so acute
  - X-ray
    - AP Hips
    - Frog lateral
14 yr old boy

- Keen sportsman
- Few months niggling groin pain
- Seen a Physiotherapist
  - Several times
- Diagnosed groin strain
- Sent for MRI when not improving
Femoral neck cyst
Keep out of trouble...

NEVER
Alignment

- Longitudinal
- Rotational

- Appearance
- Pain
- Function
Longitudinal – valgus
Knock knees Age 3
Longitudinal – varus
Bow legs Age 4
Normal alignment changes

Varus

3 yrs  6 yrs

Valgus
Asymmetry
When to refer

- Asymmetric
- Progressive
- Varus over 3 yrs
- Excessive
Physiological bowing
Vitamin D deficiency
Southampton study

- 187 children - 97 m  90 f
- mean age 7.1 y
- 82% were white British, 11% were Asian
- Sixty patients (32%) had vitamin D insufficiency with 25-(OH) levels <50 nmol/L
- 15 patients (8%) had vitamin D deficiency

Map of Medicine

Bowlegs and knock-knees in children

Key
1. More information
2. Referral
3. National info
4. Local info
5. Notes
6. Primary care
7. Information

Background information

Patient information

Key messages for this pathway

Clinical features

Assessment

Reassurance and clinical review

Threshold: consider referral

Refer to Paediatric Orthopaedics

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Guided growth
Alignment

- Longitudinal
- Rotational

- Appearance
- Pain
- Function
Rotational malalignment

- Femur
- Tibia
- Foot
In-toeing  Out-toeing
Where to look...

- Patella
- Foot
Femoral anteversion
Femoral anteversion
Femoral anteversion - bilateral
Femoral anteversion - unilateral
Femoral retroversion - SCFE
Tibial rotation
Percutaneous surgery
<table>
<thead>
<tr>
<th>When to refer</th>
<th>When to reassure</th>
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<tbody>
<tr>
<td>- Asymmetric</td>
<td>- Idiopathic pains</td>
</tr>
<tr>
<td>- Progressive</td>
<td>- Normal joint motion</td>
</tr>
<tr>
<td>- Persistent</td>
<td>- No spasm</td>
</tr>
<tr>
<td>- Muscle tone</td>
<td>- Normal bloods</td>
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<td>- Spasticity</td>
<td>- FBC</td>
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<td>- Flaccid</td>
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<td></td>
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When to refer

Longitudinal
- Asymmetric
- Progressive
- Varus over 3 yrs
- Excessive
  - Rule of fist
- Persistent

Rotational
- Asymmetric
- Failure to improve
- Excessive
  - Rotation limit at hip
  - Tripping
- Symptomatic
Anterior knee pain

- On-going
- No sinister features
  - Swelling
  - Night pain
  - Mechanical symptoms
- Sitting aggravates
- Activity related
Anterior knee pain

- Physiotherapy effective in 80%
- SUHT audit
Patella maltracking
When to refer

- If you think it is the hip
- Persistent
- Intrusive
- Mechanical symptoms
- Swelling
Hip dysplasia
When to refer

- Asymmetric creases
- Length discrepancy
- Reduced abduction of hip
- Unstable
- Clicky hip
DDH examination
Foot problems

- Appearance
- Pain
- Function
Metatarsus adductus
13 yr old boy, pain in foot & ankle
Varus
When to refer

- Painful
- Stiff
- Skin sore/callus/blistering
- Excessive shoe wear
- Asymmetry
- Varus heel

To stop them getting un-necessary insoles
9 yr old boy, foot pain
Flexible flat foot

- No arch until 5 yrs
- Flexible
- Painless

- No reason to treat
Orthotics
Orthotics
Orthotics
Heel cups
Given to a 3 yr old
Natural history good for most
Summary

- Appearance
- Dysfunction
- Pain

- Asymmetry
  - Length
  - Alignment
  - Rotation

- Progression of deformity
- Persistence of pain
- or dysfunction

HIP

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