DEVELOPMENTAL DYSPLASIA OF THE HIP (DDH)

INTRODUCTION

- DDH ranges from mild acetabular dysplasia with a stable hip through more severe forms of dysplasia, often associated with neonatal hip instability, to established hip dysplasia with/without later subluxation or dislocation
- Delayed diagnosis requires more complex treatment and has a less successful outcome than dysplasia diagnosed early
- Screening for DDH is part of the newborn and infant physical examination (NIPE)

MORE COMMON IN BABIES WITH:

- Family history of first degree relative with DDH
- Breech presentation during pregnancy
- Hip abnormality on clinical examination
- Structural foot abnormality – congenital calcaneovalgus, fixed talipes equinovarus
- Significant intrauterine moulding – congenital torticollis, congenital plagiocephaly
- Birth weight >5 kg
- Oligohydramnios
- Multiple pregnancy
- Prematurity
- Neuromuscular disorders

SCREENING FOR DDH

- All babies are offered a NIPE to be completed by age 72 hours (if gestation at birth is ≥ 34/40) OR at 34/40 CGA (if gestation at birth is < 34/40) to include:
- questions to the parents to identify risk factors for DDH and a thorough examination for hip abnormalities
  - ask parents: “Is there anyone in the baby’s close family, i.e. mother, father, brother or sister, who has had a hip problem that started when they were a baby or young child and that needed treatment with a splint, harness or operation?”
- Ortolani and Barlow tests, to detect an unstable hip, or hip that is dislocated or subluxated but reducible
  - will not detect an irreducible hip, which is best detected by identifying limited abduction of the flexed hip

HIP EXAMINATION

Observe for

- Symmetry of leg length
- Level of knees when hips and knees are both flexed with feet together

Manipulation

- Barlow test and Ortolani test (see **Figure 1**)
- When examining hip, stabilise pelvis on opposite side
- Can legs be fully abducted

Barlow test

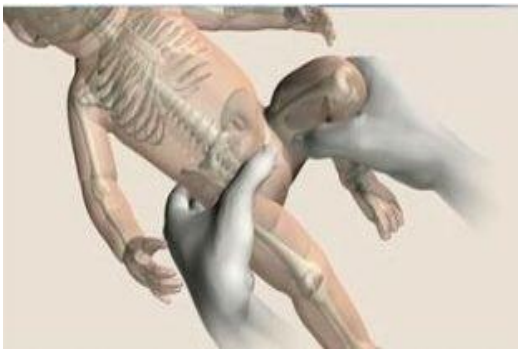
- Hip adducted and flexed to 90°
- Hold distal thigh and push posteriorly on hip joint
- Test is positive when the femoral head felt to slide posteriorly as it dislocates

Ortolani test

- Stabilise pelvis and examine each hip separately
- In a baby with limited hip abduction in flexion, hip is flexed to 90° and gently abducted while examiner’s finger lifts the greater trochanter

- Test is positive when the femoral head is felt to locate into the acetabulum

Figure 1



REFERRAL FOR ENHANCED SCREENING

- Enhanced screening is done through ultrasound of the hips
- NIPE guidelines include specific criteria for referral for enhanced screening and the timescale in which this should occur
- Individual trusts may add local criteria to supplement national criteria
- **SCREEN POSITIVE** result is an abnormal clinical hip examination (with/without risk factors) or NIPE hip risk factors

Abnormal examination defined as:

- Difference in leg length
- Knees at different levels when hips and knees bilaterally flexed
- Difficulty abducting hip to 90°
- Palpable ‘clunk’ when undertaking Ortolani or Barlow manoeuvre

NIPE hip risk factors:

- Family history of first degree relative with hip problems in early life, unless DDH has definitely been excluded
- Breech presentation at ≥36 completed weeks of pregnancy, irrespective of presentation at delivery or mode of delivery, **or**
- Breech presentation at the time of birth between 28 weeks’ gestation and term
- In the case of a multiple birth, if any baby falls into either category, all babies in this pregnancy to have ultrasound examination

Additional local criteria for referral may include:

- Significant moulding
- Congenital torticollis, congenital plagiocephaly
- Structural foot deformity
- Congenital foot deformity, especially fixed talipes calcaneovalgus or equinovarus
- Check your local referral criteria

PROCESS

Screen negative − no risk factors on history and normal examination

- No further intervention needed
- Inform parents and document findings
- These babies will be rechecked at their 6–8 week check

Screen positive – (risk factors or abnormal examination as detailed above)

- Inform parents of findings and plan for further investigation
- Document findings and plan
- Request outpatient hip ultrasound to be performed in accordance with NIPE guidance
- For babies born <34^{+0} weeks’ gestation, hip ultrasound should be undertaken 38−40 weeks’ corrected age

- For babies born ≥34^{+0}, hip ultrasound scan should be undertaken at aged 4–6 weeks
- Departments to have system in place to review all hip scan results and inform parents as they are reported
  - babies with normal hip scan require no further action and will be re-examined at their 6–8 week check
  - babies with abnormal hip scan require a specialist assessment
- An outcome decision for all babies should have been made by aged 6 weeks for babies born ≥34^{+0}, and by 40^{+0} weeks' corrected age for babies born <34^{+0} weeks

Dislocated/dislocatable/unstable hip – positive Ortolani or Barlow test or limited hip abduction

- Review by tier 2 staff/consultant to confirm diagnosis
- Inform parents of findings and plan for further investigation and management
- Document findings and plan
- Urgent referral required
- Check local policy regarding referral to physiotherapy/orthopaedic team and ultrasound. Service may be provided locally or referral to a tertiary centre paediatric orthopaedic team may be required