EXAMINATION OF THE NEWBORN ● 1/4

INDICATIONS

- Comprehensive physical examination performed within <72 hr of life
- See – http://www.e-lfh.org.uk/programmes/screening
- Includes screening for:
  - developmental dysplasia of the hip
  - congenital cataracts
  - cryptorchidism
- Assessment of the heart
- General physical examination
- Examination has limitations and cannot identify all abnormalities that may be present in the newborn period
- Provides reassurance to parents and opportunity for discussion

EQUIPMENT

- Maternal and baby notes
- Stethoscope
- Ophthalmoscope
- Measuring tape
- Tongue-depressor

AIMS

- Identify congenital malformations
- Identify common neonatal problems and initiate management
- Continue with screening, begun antenatally, to identify need for specific interventions (e.g. immunisation)

PRE-PROCEDURE

- Before undertaking clinical examination, familiarise yourself with maternal history and pregnancy records, including:
  - maternal medical, obstetric and social history
  - paternal medical history, if appropriate
  - family health, history of congenital diseases
  - identify drugs mother may have taken during pregnancy and in labour
  - health of siblings
  - identify pregnancy complications, blood tests, ultrasound scans, admissions to hospital
  - identify maternal blood group, presence of antibodies, serology results for sexually transmitted diseases
  - duration of labour, type of delivery, duration of rupture of membranes, condition of liquor
  - Apgar scores and whether resuscitation required
  - birth weight, gestational age, head circumference

Consent and preparation

- Introduce yourself to mother and gain oral consent. Ask about particular concerns
- Keep baby warm and examine in quiet environment

PROCEDURE

Skin examination

- Hydration
- Rashes: including erythema toxicum, milia, miliaria, staphylococcal skin infection, candida
- Pigmented lesions: naevi, Mongolian blue spots, birth marks, café au lait spots
- Bruises: traumatic lesions, petechiae
- Cutis aplasia
- Tufts of hair not on head
- Vascular lesions: haemangioma, port wine stain, simple naevus
- Colour: pink/cyanosis/jaundice/pallor/plethora
- Acrocyanosis
- Cutis marmorata

Facial examination

- General facial appearance to identify common syndromes

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Eyes
- Shape
- Slant
- Size
- Position
- Strabismus
- Nystagmus
- Red reflex
- Presence of colobomata
- Discharges

Nose
- Nasal flaring
- Patency

Ears
- Shape
- Position
- Tags or pits

Mouth
- Size
- Cleft lip
- Symmetry of movement
- Swellings, Epstein's pearls, ranula, tongue-tie (for parental reassurance)
- Teeth
- Cleft palate, hard/soft palate, [by both inspection (using tongue depressor) and palpation]
- Sucking

Skull
- Palpate:
  - skull for sutures and shape/cranio-synostosis
  - swellings on scalp, especially crossing suture lines, cephalhaematoma
  - signs of trauma associated with birth (e.g. chignon from vacuum extraction)
  - subgalaeal haemorrhage [see **Subgaleal haemorrhage (SGH)** guideline]
  - sutures for ridging or undue separation

Neck
- Swellings
- Movement
- Webbing
- Traumatic lesions from forceps delivery

Clavicles
- For fracture

Arms and legs
- Position and symmetry of movement
- Swelling and bruising

Hands and feet
- Extra digits (polydactyly)
- Syndactyly, clinodactyly
- Palmer creases
- Skin tags
- Position and configuration of feet looking for fixed/positional talipes
- Overlapping toes

Hips
- Developmental dysplasia using Ortolani's and Barlow's manoeuvres [see **Developmental dysplasia of the hip (DDH)** guideline]

Spine

- Curvatures
- Dimples (see **Sacral dimples** guideline)
- Sacrococcygeal pits
- Hairy patches/naevi
- Hairy tuft on spine

Systems

- Examine (inspection, palpation, auscultation) each system

Respiratory

- Respiratory rate
  - grunting
  - nasal flaring
- Chest shape, asymmetry of rib cage, swellings
  - nipple position, swelling/discharge/extra nipples
- Chest movement
  - presence/absence of recession
- Auscultate for breath sounds

Cardiovascular

- Skin colour/cyanosis
- Palpate:
  - precordium for thrills
  - peripheral and femoral pulses for rate and volume
  - central perfusion
- Auscultate for heart sounds, murmur(s), rate, rhythm
  - pulse oximetry of right arm and either leg (<3% difference in SpO_2 normal)

Gastrointestinal tract

Ask mother how well baby is feeding, whether baby has vomited and, if so, colour of vomit Bilious vomiting may have a surgical cause and needs prompt stabilisation and referral

- Abdominal shape
- Presence of distension
- Cord stump for discharge or inflammation/umbilical hernia
- Presence and position of anus and patency
- Stools passed
- Palpate abdomen for tenderness, masses and palpable liver
- Auscultation is not routinely undertaken unless there are abdominal concerns

Genito-urinary system

Ask mother if baby has passed urine, and how frequently

- Inspect appearance of genitalia: ambiguous?

Male genito-urinary system

- Penis size (>1 cm)
- Position of urethral meatus. Look for hypospadias
- Inguinal hernia
- Chordee
- Urinary stream
- Scrotum for colour
- Palpate scrotum for presence of 2 testes and presence of hydrocoele

Female genito-urinary system

- Presence of vaginal discharge (reassure parents about pseudomenstruation)
- Skin tags
- Inguinal hernia

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- Proximity of genitalia to anal sphincter
- Routine palpation of kidneys is not always necessary as antenatal scans will have assessed presence

Neurological system

- Before beginning examination, observe baby's posture
- Assess:
  - muscle tone, grasp, responses to stimulation
  - behaviour
  - ability to suck
  - limb movements
  - cry
  - head size in relation to body weight
  - spine, presence of sacral pits, midline spinal skin lesions/tufts of hair
- If neurological concerns, initiate Moro and stepping reflexes
- Responses to passive movements:
  - pull-to-sit
  - ventral suspension
- Palpate anterior fontanelle size (<3 cm × 3 cm) and tone

OUTCOME

Documentation

- Complete neonatal examination record in medical notes and sign and date it. Also complete Child Health Record (Red Book) and/or in NIPE Smart if used
- Record any discussion or advice given to parents

Normal examination

- If no concerns raised, reassure parents of apparent normality and advise to seek advice if concerns arise at home
- GP will re-examine baby aged 6–8 weeks

Abnormal examination

- In first instance, seek advice from middle grade/consultant
- Refer to postnatal ward guidelines for ongoing management
- Refer abnormalities to relevant senior doctor