DROPPED BABY

Based on BAPM document: The Prevention, Assessment and Management of In-Hospital Newborn Falls and Drops. Published March 2020 (https://www.bapm.org/resources/161-the-prevention-assessment-and-management-of-in-hospital-newborn-falls-and-drops#:~:text=of%20Perinatal%20Medicine)

RISK FACTORS

- Co-bedding/co-sleeping whilst breastfeeding
- Impaired awareness of mother e.g. fatigue, sedation, mobile phone use, dim lighting
- Immobility of mother e.g. epidural
- Primiparous mother
- Underlying maternal condition e.g. epilepsy, diabetes, disability, raised BMI
- Social issues e.g. young mother, single mother, language barrier
- Time of day

ASSESSMENT – IMMEDIATE ACTIONS

- Place baby on warm, well-lit surface – ideally resuscitaire
- Assess:
  - airway, breathing, circulation
  - level of consciousness, and pupil size and reaction to light
  - local traumatic injuries
  - full neurological examination and enhanced observations

Immediate assessment and actions

Assessment	Action
Any of following: • Unresponsive • Abnormal movement/posturing/seizure • Floppy/not moving • Only opens 1 eye with/without new bruising/swelling • Asymmetrical pupils • New external injury	• Call neonatal crash team • Assess and stabilisation as per NLS algorithm • Admit to NNU for investigation and assessment

All of following:
• Alert and moving normally
• Sleepy, but wakes on handling
• Poor feeding/not interested
• Irritable but consolable
• Eyes equally open
• Pupils equal and reactive
	• Paediatric team to review within 15 min
	• Can remain on PN ward/transitional care unit
	• Start enhanced observations*
	  • continue for 12 hr
	  • if observations change, for immediate paediatric review

*Enhanced observations = neonatal early warning score (NEWS) + modified paediatric Glasgow coma scale (GCS)

ASSESSMENT – BY PAEDIATRIC MIDDLE GRADE

History

- Details of fall
  - time
  - detailed description of events
  - estimated height of fall (significant injury can occur after fall from a low height)
  - witnesses
- Most falls are accidental but be alert to possibility of non-accidental injury. Note:
  - consistency of history
  - consistency between injury and proposed mechanism of injury
  - other injuries
  - wider social situation (including safeguarding risks)
- Mode of delivery and any injuries attributed to birth

- Administration of vitamin K – if not given or given orally, give IM (for dose see **Vitamin K** guideline)

Examination

- Full medical and neurological examination checking for signs of injury
- Use body map to document any bruises, redness, swelling or skin marks
- Perform neurological examination, and enhanced observations (NEWS + modified GCS)
- Check https://hubble-live-assets.s3.amazonaws.com/bapm/attachment/file/244/Baby_Falls_-_FINAL_VERSION_19-03-20.pdf
  - anterior fontanelle and sutures
  - pupil size, symmetry and response to light
  - tone and power
  - primitive reflexes
- Measure occipital frontal circumference and plot
- Review the need for analgesia (see **Pain assessment and management** guideline)

MONITOR

- NEWS and modified GCS for ≥12 hr
  - half hourly for 2 hr
  - hourly for 4 hr
  - 2-hrly for 6 hr
- NEWS:
  - heart rate
  - respiratory rate
  - SpO_2
  - temperature
- Modified GCS
  - eye opening
  - pupil reaction and size
  - best vocal response or grimace to stimulus
  - best motor response to stimulus
  - limb movement and tone

Modified Glasgow Coma Scale for Infants and Children

	Child	Infant	Score
Eye opening	Spontaneous To speech To pain only No response	Spontaneous To speech To pain only No response	4 3 2 1
Best verbal response	Oriented, appropriate Confused Inappropriate words Incomprehensible sounds No response	Coos and babbles Irritable cries Cries to pain Moans to pain No response	5 4 3 2 1
Best motor response*	Obeys commands Localizes painful stimulus Withdraws in response to pain Flexion in response to pain Extension in response to pain No response	Moves spontaneously and purposefully Withdraws to touch Withdraws to response in pain Abnormal flexion posture to pain Abnormal extension posture to pain No response	6 5 4 3 2 1

*If patient is intubated, unconscious, or preverbal, the most important part of this scale is motor response. Motor response should be carefully evaluated.

- If all observations normal: discontinue after 12 hr
- If any observations abnormal: request immediate middle grade review
- baby may require return to half hourly observations or NNU admission and investigations

INVESTIGATIONS

Babies on postnatal ward/transitional care unit with stable enhanced observations

- No further investigations needed

Babies admitted to NNU for clinical concerns

- FBC, U&E, group and save, clotting, blood gas, blood glucose
- If intracranial bleeds/fracture suspected, urgent CT head scan (see below)

Urgent CT head scan

- If indicated should be performed and reported within 1 hr of injury after stabilisation
- Do not delay CT by performing cranial ultrasound scan as this has poor sensitivity for detecting extra-axial fluid collections
- If any of the following risk factors perform CT scan:
- seizure
- focal neurological deficit including:
  - asymmetrical pupils
  - ptosis
  - unilateral weakness
  - posturing
- loss of consciousness or unresponsive episodes
- modified GCS <14 on first assessment
- any soft tissue injury (bruise, swelling, laceration) not present before fall
- suspicion of non-accidental injury
- suspected open or depressed skull fracture
- any sign of basal skull fracture
  - haemotympanum
  - 'panda' eyes
  - cerebrospinal fluid leakage from ear or nose
  - Battle's sign (bruising over mastoid process)

- If ≥2 of the following risk factors, urgent review, and consideration of need for CT
- ≥3 episodes of forceful/projectile vomiting in 1 hr
- abnormal drowsiness or irritability lasting >5 min
- fall from height ≥90 cm
- If concerns of spinal injury, MRI head and spine after discussion with paediatric neurosurgical team

DOCUMENTATION/COMMUNICATION

- Complete incident form
- Consider possibility of non-accidental injury and document outcome of this
- Ensure communication with mother includes provision of emotional support and information about immediate management plan
- Inform consultant

SUBSEQUENT MANAGEMENT

- If CT abnormal discuss with neurosurgical centre
  If CT normal/not indicated continue to monitor baby as described above for ≥12 hr
- If enhanced observations become abnormal admit to NNU and investigate as detailed above
- Baby with normal CT scan and no other clinical concerns may be monitored on postnatal ward or transitional care if staff are competent to perform enhanced observations

DISCHARGE

- If observations normal for 12 hr and no significant extracranial injuries nor concerns about safeguarding, then middle grade/consultant may discharge baby
- Ensure community midwife/health visitor is aware of discharge and that the fall, assessment and investigations documented in discharge summary
- If CT scan abnormal follow-up as advised by neurosurgical team