

MYELOMENINGOCELE (MMC)

DEFINITION

- Defect of the backbone and spinal cord
- MMC is the most serious type of spina bifida; spinal cord and meninges push out and create a sac in baby's back
- Associated with significant damage to spinal cord
- Can leave nervous system vulnerable to life-threatening infection

MANAGEMENT

Antenatal diagnosis

- Refer to neurosurgery team
- Offer parents appointment with neurosurgeon before the birth

Post-delivery

Neonatal management in local unit:

- Systemic management: **as per local unit guideline**
- First line antibiotics: see **Infection in first 72 hours of life** guideline
- Give vitamin K
- Nurse prone/lateral, irrespective of gestation and ventilator status
- Baseline cranial ultrasound
- Occipital frontal circumference (OFC) daily before transfer

Specific MMC management

Open MMC

- Surgical closure recommended in first 24–48 hr
- transfer to appropriate surgical unit ≤ 24 hr (providing condition stable)
- if flap closure required neurosurgeon to refer to plastic surgeon
- Protect exposed meninges until surgical closure performed. Immediately after delivery cover lesion with non-adherent silicone dressing e.g. Mepitel®, followed by sodium chloride soaked gauze. Cover with cling film
- do not place gauze in direct contact with exposed meninges – can cause tearing and leaking of CSF as gauze dries out and sticks to meninges
- if gauze becomes dry, moisten with sodium chloride, keeping Mepitel® in place
- if baby nursed in incubator, adequately soak gauze and check 4-hrly
- if gauze becomes soiled with faeces or urine, change immediately
- nurse baby prone/lateral
- do not dress baby – may cause injury to lesion
- If evidence of hydrocephalus, cerebral spinal fluid (CSF) diversion will be considered at time of closure
- avoid contact with products containing latex; high risk (25–65%) of developing latex sensitisation and allergy
- complete red allergy band with 'latex precautions' and place sign above bed
- inform theatres of latex precautions at time of booking
- Risk of hydrocephalus, daily monitoring of:
 - OFC
 - depth and softness of anterior fontanelle
- Document daily on centile chart:
 - head circumference
 - weight
- Document pre-operative administration of vitamin K and completed screening tests on neonatal checklist

Closed MMC or had in-utero repair

- Discuss with neurosurgeons regarding recommended timings for investigations, surgery and follow-up
- Risk of hydrocephalus

- monitor head circumference (request cranial USS and MRI)
- Risk of neurogenic bladder/bowel
- ensure passed urine and faeces (request renal USS)

PRE-OPERATIVE INVESTIGATIONS AND MANAGEMENT

- Protect lesion from soiling and contamination
- Nurse baby prone/lateral
- Apply minimal tape to skin due to sensitivity to tapes, and to prevent epidermal stripping
- Bloods for:
 - FBC
 - U&E
 - clotting
 - group and save
- Ultrasound of renal system
- MRI of head and spine at earliest opportunity as baseline (if possible pre-operatively, but do not delay surgery for imaging)
- Consider clinical photography before and after repair
- obtain consent at time of consenting for surgery

DISCHARGE

- Provide parents with wound care advice
- Advise first bath 7–10 days post-operatively (unless advised otherwise)
 - if no concerns regarding wound, baby bath solution can be used
- Neurosurgical clinical nurse specialist to provide information regarding shunt malfunction
 - if no shunt present, ensure parents made aware of signs and symptoms of hydrocephalus
- Liaise with health visiting team to:
 - arrange regular OFC measurement
 - share contact information
 - ensure safe infant sleeping/SIDS guidelines taught
- Arrange follow-up appointments
 - neurosurgery ward clinic: 1 week post-discharge
 - named consultant clinic: ≤6–8 weeks post-discharge
 - urology/urodynamics: book before discharge (including ultrasound appointment)
- Refer to community paediatrician
- Provide parents with contact details of neurosurgical clinical nurse specialist
 - clinical nurse specialist to provide copy of SHINE charity booklet, with additional team names completed
- Detailed discharge summary made and given to parents
- Refer to physiotherapy service