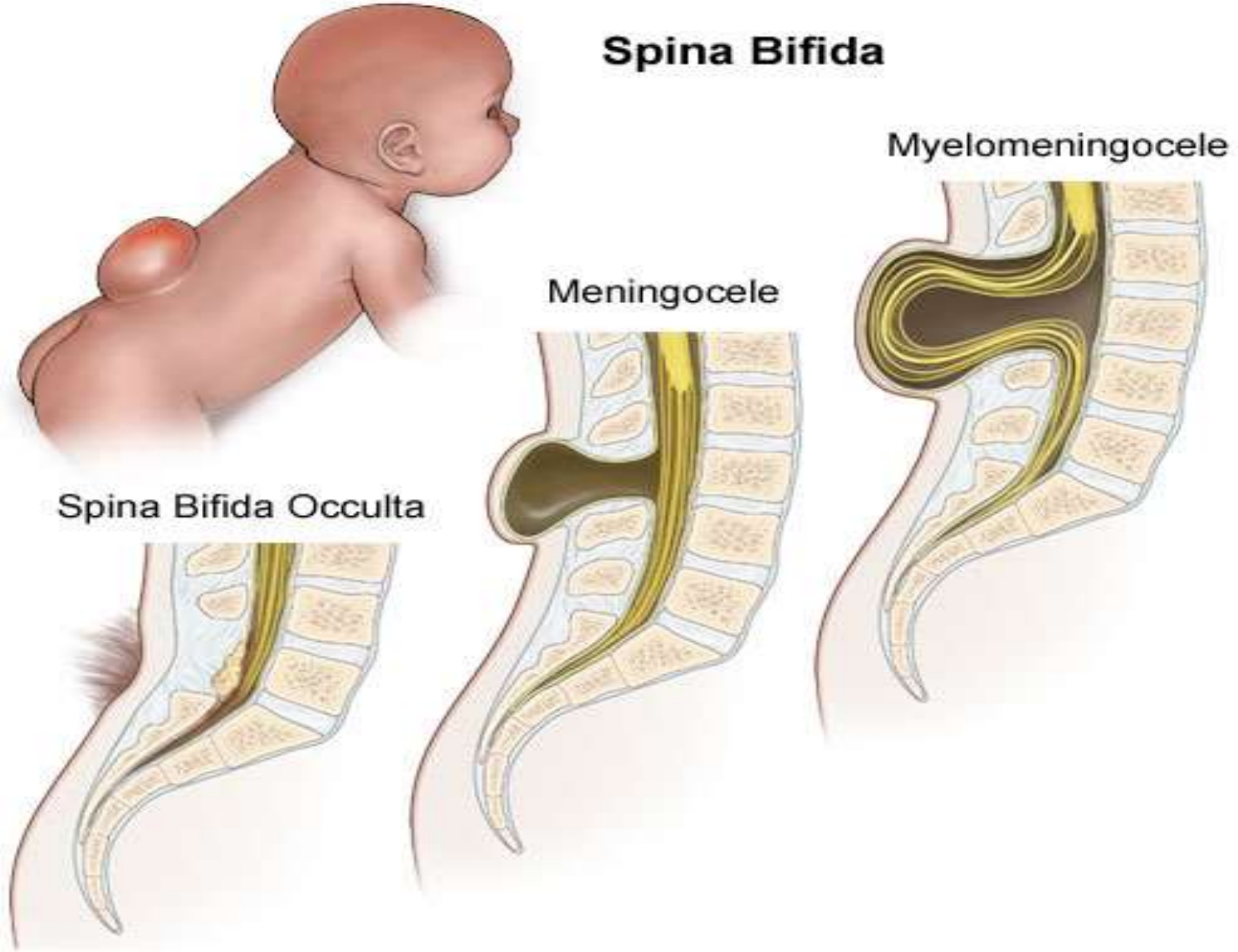
SPINA BIFIDA

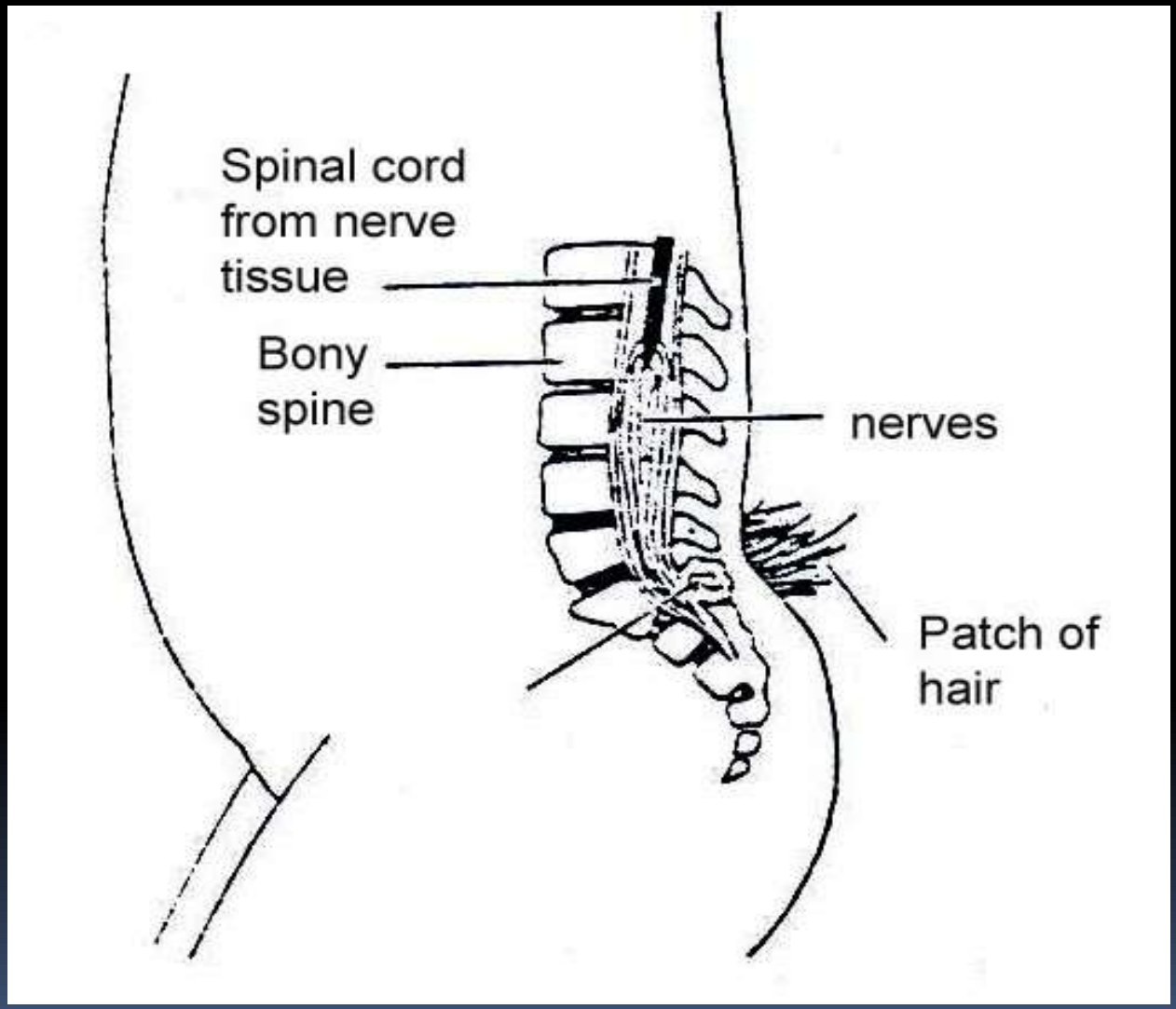
- It is a congenital neural tube defect characterized by incomplete closure of the vertebrae & neural tube during fetal development.
- Classified as :

- Spina bifida occulta
- Spina bifida cystica: meningocele, meningomyelocele, lipomeningocele, lipomyelomeningocele


Spina Bifida
Myelomeningocele
Meningocele
Spina Bifida Occulta

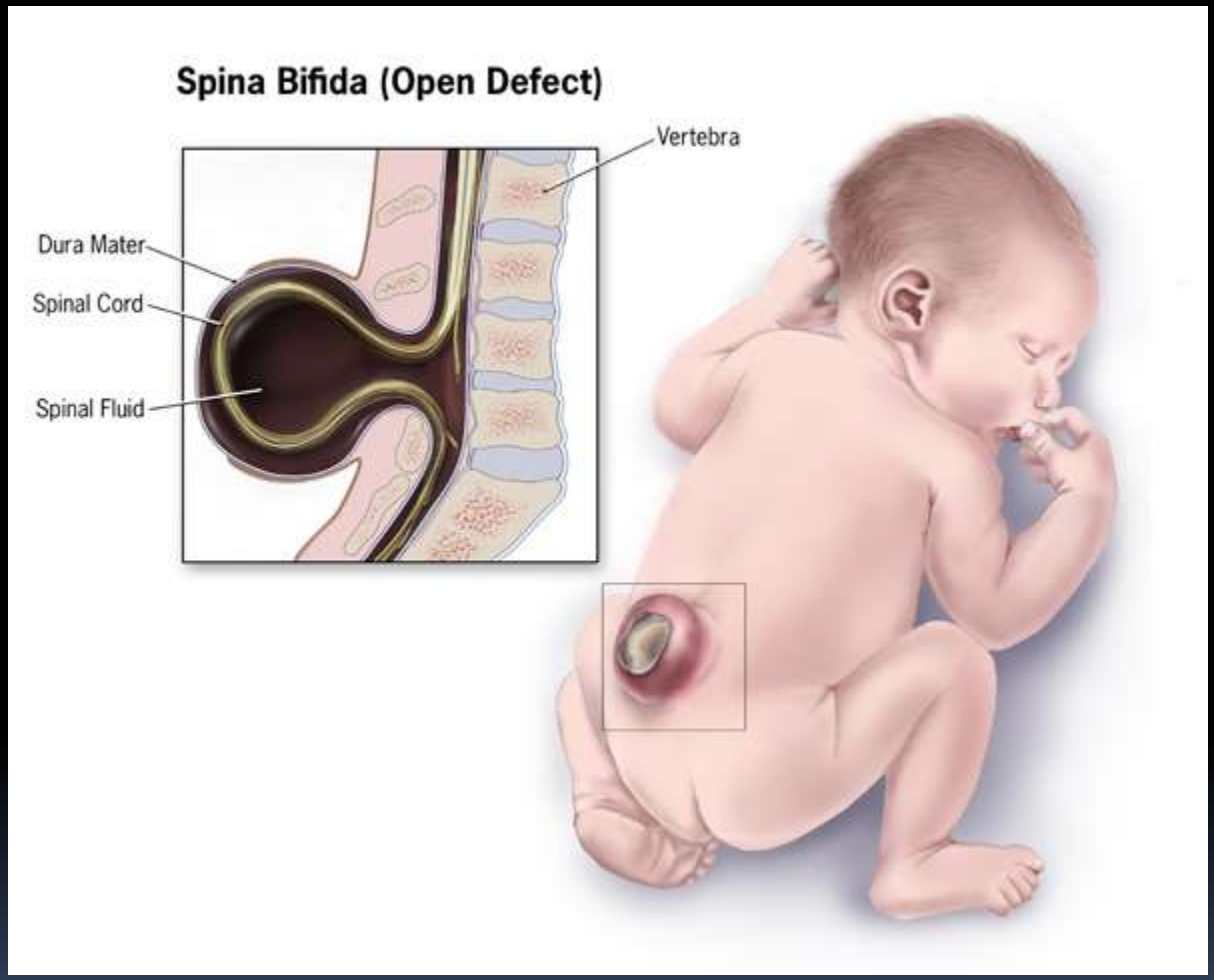
1. Spinabifida occulta

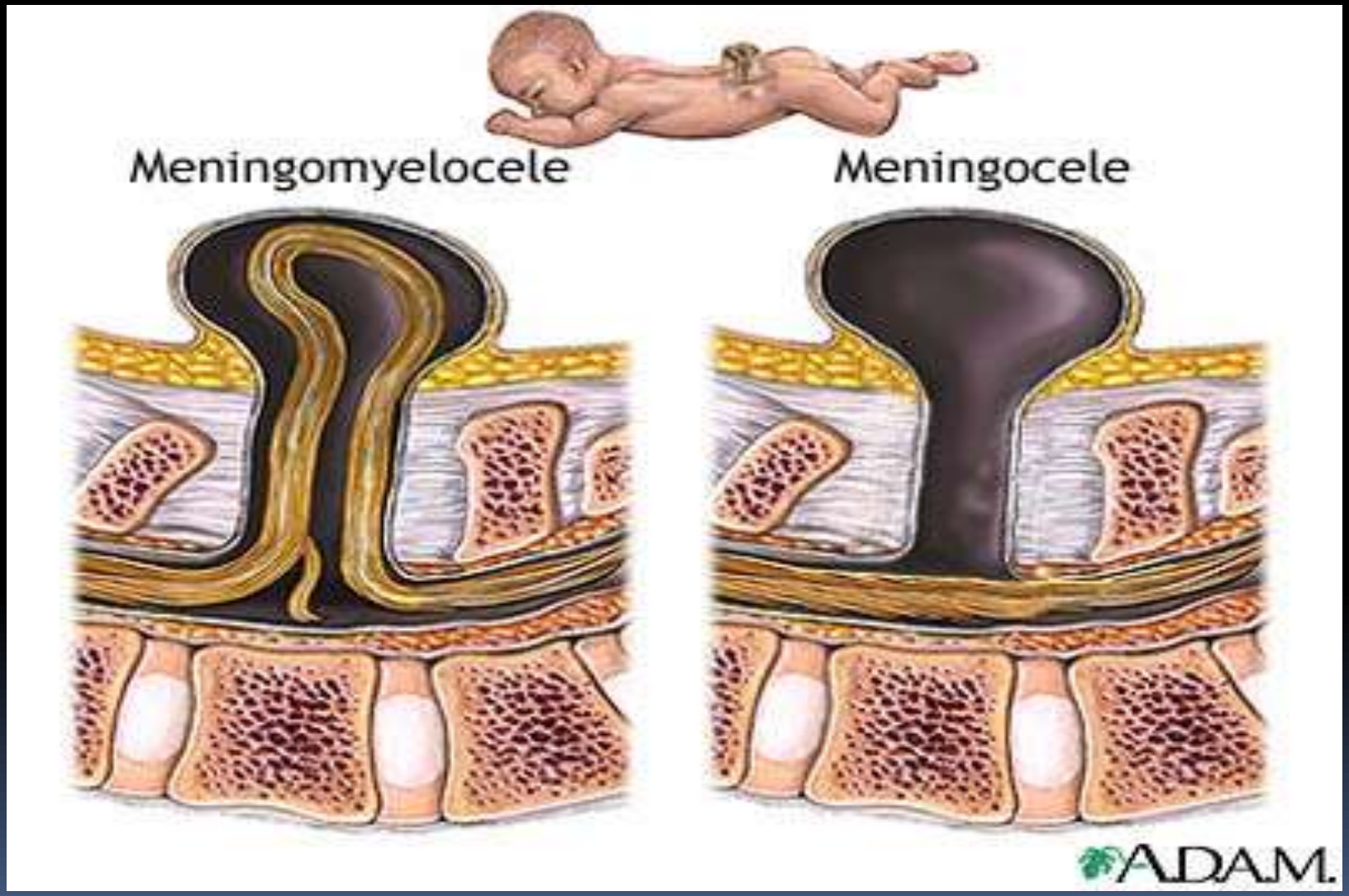
- Occurs between L5 &S1 vertebrae with failure of vertebrae to completely fuse.
- Child may have no sensory or motor defects.
- Only clinical feature is dimple, a small tuft of hair, a hemangioma or a lipoma in lower lumbar or sacral area.


Spinal cord from nerve tissue
Bony spine
nerves
Patch of hair

2. Spinabifida cystica

- Incomplete closure of the vertebrae & neural tube, evidenced by a sac like protrusion in the lumbar or sacral area with varying degrees of nervous tissue involvement.
- Meningocele: sac like protrusion filled with spinal fluid & meninges.
- Myelomeningocele: most severe form of meningocele, in which the sac is filled with spinal fluid, meninges, nerve roots & spinal cord. 80% of infants develops hydrocephalus.


Spina Bifida (Open Defect)
Vertebra
Dura Mater
Spinal Cord
Spinal Fluid


Meningomyelocele
Meningocele
A.D.A.M.

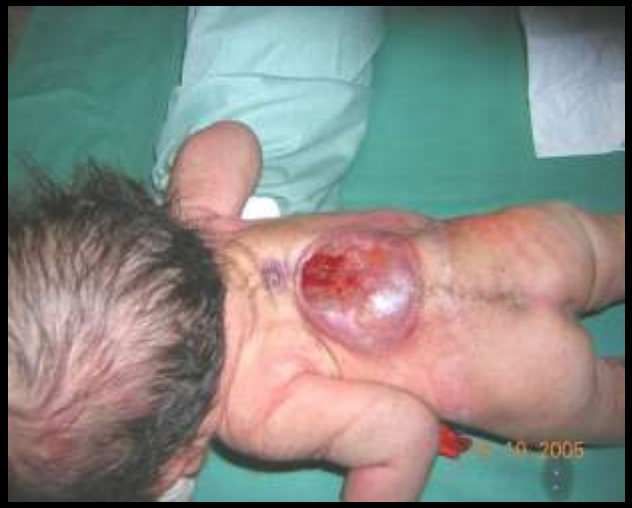
Etiology & incidence

- Unknown cause
- Genetic predisposition
- Maternal folic acid deficiency strongly linked to neural tube defects
- Myelomeningocele: 1 in 4000 live births

Pathophysiology

- Spinabifida occurs during 4th week of gestation, when ventral induction of the neural tube fails to occur.
- 90% of spinal cord lesions are at or below the L2 vertebra.
- The lesion results in paralysis, partial paralysis or varying sensory defects.
- Associated malformations include hydrocephalus & Arnold- chiari malformation.

C/M



- Flaccid paralysis
- Absence of sensation
- Postural abnormalities – club foot
- Changes in micturition pattern

Diagnosis

- Alpha fetoprotein levels in blood at 16- 18 weeks of gestation
- If AFP is elevated, amniocentesis & fetal ultrasonography are performed
- After delivery may undergo CT scan or myelography.

Management

- Prenatal microsurgical closure of the myelomeningocele, performed at approximately 19-25 weeks gestation.
- Immediate surgical closure decreases the risk of infection, morbidity & mortality.
- The child will need lifelong management of neurologic, orthopedic & urinary problems & is best managed in a multispeciality outpatient setting.
- Close monitoring of child's infection status.

Nursing diagnoses

1. Risk for infection rt to the open sac & the operative procedure.
2. Risk for impaired skin integrity rt to neurologic motor deficits.
3. Impaired physical mobility rt to neuromuscular impairment
4. Impaired urinary elimination rt to the neuromuscular deficit.
5. Constipation rt to sensory deficit & neurologic impairment.

Nursing interventions

- Monitor vitals
- Perform neurologic checks
- Maintain sterile dressings over the sac or incision site
- Use a special mattress or pad for infant's bed
- Pre operatively place the infant in a prone or sidelying position with a small blanket or diaper roll under the ankles & between the knees.
- Maintain splints, braces & casts.
- Offer adequate fluids.

- Observe urinary stream & teach the parents to observe for any dribbling of urine.
- Teach & maintain regular toilet habits.
- Teach parents how to perform clean intermittent catheterization.
- Check urinary frequency, I/O maintenance
- Observe & record the infant's or child's anal tone & pattern of bowel movements.
- Monitor for abdominal distention, vomiting & poor feeding.
- Consult a registered dietitian to be sure the diet provides adequate fluid & fiber. end

Thank you