

Care of the patient with Myelomeningocele (15.4)



Purpose

The following protocol has been developed for management of the infant with myelomeningocele before and after surgical closure of the sac.

Level

Interdependent: Patient care actions interdependent with other disciplines

Supportive Data

- A. Objectives:
 - 1. The goals prior to surgery are:
 - a. Protect the sac from rupture,
 - b. Protect the patient from infection,
 - c. Obtain baseline data prior to closure of the sac.
 - 2. Goals after surgery:
 - a. Protect the incision from damage.
 - b. Prevent infection of the incision.
 - c. Prepare family members for discharge through education.
- B. Indications: Infants with myelomeningocele before and after surgical closure of the sac
- C. Contraindications: None
- D. Definitions:
 - 1. "Mud-flap" is a 3M Steri-Drape™ cut in half vertically. It is attached to the skin horizontally below the surgical incision and above the buttocks to prevent stool from contaminating the incision. Hang it out over the diaper.
- E. Information:
 - 1. Surgical correction is usually performed within 24 – 72 hours after the birth of an infant with myelomeningocele.
 - 2. Hydrocephalus commonly occurs in infants with myelomeningocele. If hydrocephalus occurs, a shunt will be inserted.
 - 3. Children with myelomeningocele are at high risk for developing latex allergy.
 - 4. The Spina Bifida Nurse Practitioner will coordinate the care of the infant and arrange for discharge follow-up.

Assessment/Nursing Interventions/Evaluation

- A. Pre-Operative Care
 - 1. Neurosurgery or the Spina Bifida Nurse Practitioner are usually notified of impending admissions by the attending neonatologist at the delivering hospital. Either one will notify the admitting resident of the impending admission. The infant will be admitted to a pediatric resident team (Anderson or Veasy) if stable and not in need of NBICU.
 - 2. The pediatric resident team should contact the Neurosurgery Team if they have not already been notified.
 - 3. The pediatric resident team should contact the Spina Bifida Nurse Practitioner at ext. 3395 (if after hours, leave a message), if she has not already been notified. The nurse practitioner will notify the Spina Bifida Social Worker and other

consultants on the team.

- *** Keep the patient NPO and begin IV Fluids of D10W at 80 ml/kg/day for 24 hours, then start D5 1/4NS with 10 meq K/L at 100 ml/kg/day. (this may be different for NICU patients)
4. ***Begin IV antibiotics and continue administration for a total of 24 hours after surgical closure of the sac.
 - a. Ampicillin, if less than 2 kg, 100 mg/kg/day given every 8 hours, if greater than 2kg, 150 mg/kg/day to be given every 8 hours (this may be different for NICU patients).
 - b. Gentamicin 2.5 mg/kg/dose given every 12 hours (this may be different for NICU patients).
 5. Place and maintain patient in prone position. The family can hold the infant in the prone position, provided the sac is protected.
 6. Leave dressing in place over sac until the neurosurgeon examines the infant. Thereafter, maintain a saline soaked dressing covering the sac using moist, sterile wet telfa (no betadine).
 7. Initiate a latex-free environment (e.g. gloves, catheters, nipples, pacifiers, syringes, IV tubing). Post a Latex Precautions sign on patient's bed.
 8. ***The pediatric resident team or the neurosurgeon will order a CT scan of the head, to be done before surgery.
 9. ***The pediatric resident team or neurosurgeon will order an Echocardiogram for baseline information before surgery (if the patient is admitted on a weekend, the neurosurgeon needs to call the cardiologist on call, who will call the echo tech on call).
 10. Place an indwelling latex-free foley catheter into the infant's bladder. This will stay in place for 4-7 days or until the renal ultrasound is scheduled.
 11. Place a "mud-flap" cut to fit below the sac and over the infant's buttocks to prevent stool from contaminating the sac.
 12. The pediatric resident team will notify the inpatient physical therapy that a Manual Muscle Test (MMT) needs to be performed before the surgery (whenever possible). After hours or on the weekend, leave a message. The phone number is 588-3740
- B. Post-Operative Care
1. Maintain the infant in the prone or side-lying position until directed by Neurosurgical team.
 2. ***Initiate oral feedings when the patient is awake and alert. Feed the patient prone or side lying. Patients may breastfeed as long as they are not supine.
 3. Maintain the "mud-flap" over the patient's buttocks.
 4. Leave the post-operative dressing in place until neurosurgery or plastics team evaluates the wound.
 5. Monitor patient for hydrocephalus. Obtain an OFC once daily. Tape a head circumference chart to the wall beside the patient or on the crib and document OFC on the chart.
 6. ***Head CT requested by the neurosurgery team and ordered by the pediatric resident team as needed on an individual basis before/after shunt insertion. Other x-rays and scans ordered as needed on an individual basis.
 7. ***Ultrasound of the kidneys on the 4th-6th day post-op.
 - a. Remove foley catheter on the 4th day post-op and schedule renal ultrasound.
 - b. Check post-void residuals at least twice, 4 hours apart, after the catheter is removed. Do this by checking for a wet diaper and immediately catheterizing with a straight catheter to measure residual volume.
 - c. If residual volume is greater than 30cc, contact the Spina Bifida Nurse Practitioner for intervention.
 8. ***Orthopedic and urology consults will be determined on an individual basis by the hospital pediatric team and Spina Bifida Nurse Practitioner.

9. PT will make arrangements to repeat the MMT before discharge and review the basic therapy with the family.
10. Arrange with audiology for a newborn hearing screen.
11. Plan for discharge
 - a. The Spina Bifida Nurse Practitioner will arrange an appointment in the Spina Bifida Clinic for two weeks after discharge. The Spina Bifida Nurse Practitioner will also contact the primary care physician and the family will be instructed to arrange a well child care (WCC) appointment for five days after discharge.
 - b. ***Assure newborn screen and Hepatitis B vaccine are completed and noted in discharge note.
 - c. ***Discharge all infants on prophylaxis Amoxicillin 15 mg/kg PO once daily for 8 weeks.
 - d. The discharge planner will arrange an early intervention referral.

Documentation

- A. Document nursing assessment and interventions on the nursing flowsheet as indicated.
- B. Document the plan, interventions and evaluation on the Interdisciplinary Plan of Care as indicated.
- C. Document family teaching on the Interdisciplinary Plan of Care, Multidisciplinary Discharge Summary or nursing flowsheet as indicated.
- D. Document medication administration on the Medication Administration Record (MAR).
- E. See individual Form Guidelines as needed.

Patient/Family/Significant Others (so) Instructions

- A. Coordinate teaching with the Spina Bifida Nurse Practitioner who will provide the family with the Spina Bifida Clinic notebook and handouts.
- B. Provide family with normal newborn care as appropriate.
- C. Teach family how to hold and interact with patient.
- D. Teach caregivers how to change the "mud-flap".

Safety:

- A. Maintain latex precautions.
- B. Prevent infection by keeping "mud-flap" in place.
- C. Protect incision from injury by ensuring patient remains in prone or side-lying position until instructed otherwise.

Complications/Emergency Measures

- A. Complications
 1. Increased OFC: contact physician/LIP and monitor patient.
 2. Signs of infection: contact physician/LIP and monitor patient.

References

Batshaw, M. L, (Ed.). *Children with disabilities (5th ed)*. (2002), Baltimore: Paul H. Brookes. Ch 24 pp467-492.

¹Section: Patient Care

Subsection:

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Clinical Protocols and Procedures

***Requires physician order for implementation

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