LESSON ASSIGNMENT

LESSON 11 The Sick Neonate.

TEXT ASSIGNMENT Paragraphs 11-1 through 11-12.

LESSON OBJECTIVES After completing this lesson, you should be able to:

11-1. Select those statements that describe each of the twelve problems of the neonate:

- Weight-related gestational conditions.
- Age-related gestational conditions.
- Jaundice.
- Intracranial hemorrhage.
- Tracheoesophageal atresia.
- Down's syndrome.
- Clubfoot.
- Erythroblastosis fetalis.
- Respiratory distress syndrome.
- Children born of an addict mother.
- Infants suffering from Fetal Alcohol Syndrome (FAS).

11-2. Identify signs and symptoms of the twelve problems of the neonate.

11-3. Identify the treatments for the twelve problems of the neonate.

11-4. Identify the nursing care considerations for the twelve problems of the neonate.

SUGGESTION After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.

LESSON 11

THE SICK NEONATE

11-1. GENERAL

The neonate at birth represents the culmination of genetic, antepartal, and intrapartal factors that affect its immediate and future well-being. Many neonates, when born, have already been introduced to in utero insults and birth trauma, which severely jeopardized their future welfare. Their survival, and perhaps their quality of life, is entrusted to the knowledge, skill, and expertise of the health care team. The practical nurse performs a vital role in caring for the sick neonate. Constant attention must be directed to the accurate observation of the neonate so that significant changes may be reported immediately. This lesson will consist of twelve problems of the neonate.

11-2. WEIGHT-RELATED GESTATIONAL CONDITIONS

a. **Small for Gestational Age Infant (SGA)**. The birth weight of a small for gestational age infant (SGA) infants fall below the tenth percentile for this given gestational age. These neonates may be preterm, full-term, or post term. However, the defining characteristic specifies that they are small for their designated gestational age (see figure 11-1).

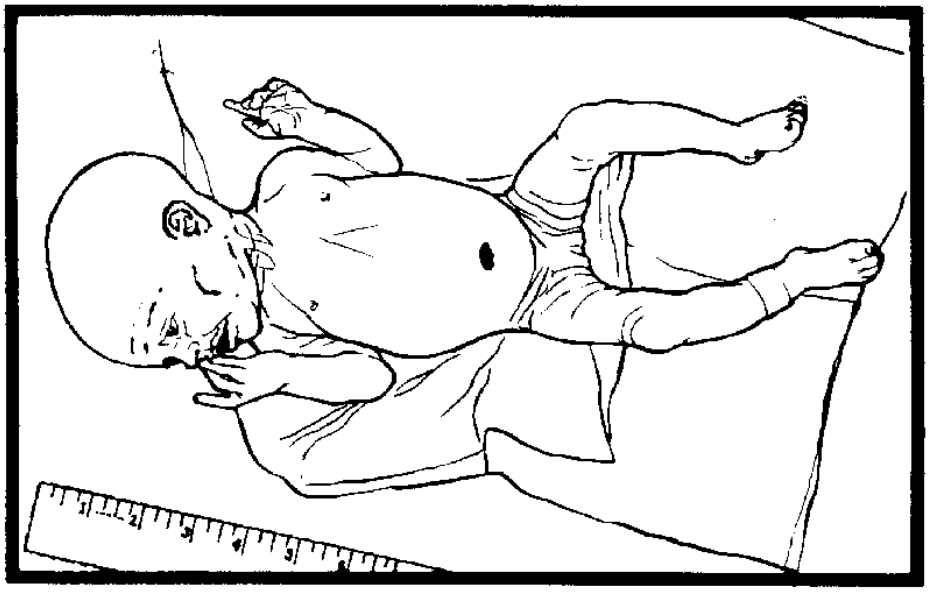

Figure 11-1. Small for gestational age infant.

(1) Characteristics of the SGA infant are as follows:

(a) The infant appears thin and wasted; their skin is loose and dry.

(b) There is little subcutaneous fat; their face appears shrunken and wrinkled.

(c) The length and head size may be normal but the head looks really big in comparison to the rest of the body.

(2) The underlying cause of SGA infants is an interruption in the normal pattern of in utero growth of the fetal, placental, or of maternal origin. Factors considered are:

(a) Chromosomal abnormalities.

(b) Smoking.

(c) Alcohol consumption/narcotic abusers.

(d) Preeclamptic/eclamptic.

(e) Inadequate prenatal care.

(3) The following conditions occur more frequently in the SGA:

(a) Asphyxia. This tolerates labor poorly which is due to the decreased of metabolic stores of carbohydrates. The SGA is often resuscitated at birth.

(b) Meconium aspiration. The fetus grasps amniotic fluid containing meconium, or it occurs when the neonate takes his first breath. It may cause atelectasis, pneumothorax, or pneumonitis.

(c) Hypoglycemia. This is most likely to occur from 12 to 48 hours after birth but may also be noted within 6 hours if the infant is severely hypoxic. It may lead to neurological damage.

(d) Hypothermia. This is due to lack of subcutaneous fat.

(e) Polycythemia. This is frequently seen when SGA is due to placental insufficiency.

(f) Congenital anomalies. The genitourinary and cardiovascular systems are most common problem area.

NOTE: Congenital anomalies are defects or disorders present in the infant when born.

(4) Nursing care considerations.

(a) Monitor blood sugars according to local policy.

(b) Observe for signs of respiratory distress (grunting, flaring, retractions, apnea, and cyanosis).

(c) Monitor input and output (I&O), daily weights, and head circumference.

(d) Prevent hypothermia by maintaining thermal stability.

(e) Assess hematocrit according to local policy.

(f) Support the parents by listening to their concerns and answering questions.

b. **Large for Gestational Age**. Large for gestational age (LGA) infants are those whose birth weight places them above the 90th percentile of normal for their gestational age.

(1) Conditions that occur frequently in the LGA infant are:

(a) Hypoglycemia. This is related to hyperinsulinism following birth.

(b) Hypocalcemia. This is associated with prematurity or asphyxia.

(c) Polycythemia. This is a complicated factor of decreased extracellular fluid.

(d) Hyperbilirubinemia. This may be influenced by decreased extracellular fluid and birth trauma hemorrhage.

(e) Respiratory distress syndrome. This is associated with premature delivery.

(f) Congenital anomalies.

(2) Nursing care considerations.

(a) Monitor the infant's respiratory and temperature status.

(b) Monitor the infant's levels of glucose, calcium, bilirubin, and hematocrit and hemoglobin per physician's orders.

(c) Employ measures to prevent infection.

11-3. AGE-RELATED GESTATIONAL CONDITIONS

a. **Premature Infant**. The infant's abdomen is relatively large, his thorax is relatively small, and his head is disproportionately large. He has poor muscle tone, but his reflexes work.

b. **Postmature Infant**. The postmature infant (see figure 11-2) gestation is 42 weeks or longer. He may show signs of weight loss from placental insufficiency and in many cases the cause is not known.

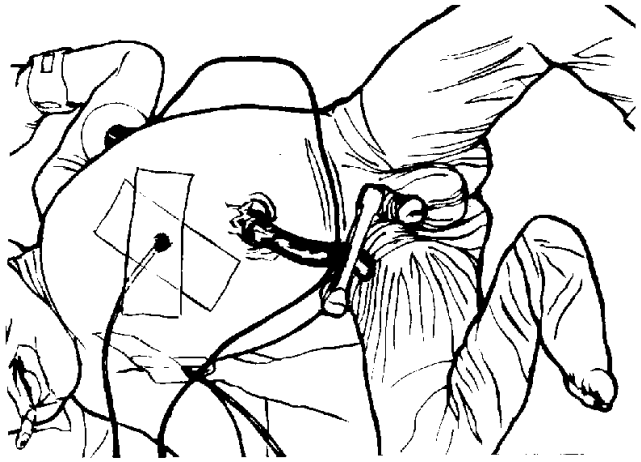

Figure 11-2. Postmature infant.

(1) Characteristics displayed by the postmature infant are contingent upon placental functioning and related placental insufficiency.

(a) The infant's skin appears pale, cracked, very dry, peeling, and wrinkled with a noticeable absence of vernix. The skin also appears dehydrated and has little subcutaneous fat, which accounts for the loose skin, especially in the buttocks and thighs.

(b) The infant's fingernails and hair are long. There is no appearance of lanugo.

(c) The infant's measurements are in proportion.

(d) There is meconium staining of amniotic fluid, fingernails and umbilical cord and even the skin.

(e) The infant has an alert appearance of a two to three weeks old infant following delivery.

(f) With a more severe degree of placental insufficiency, there may be asphyxia, hypoglycemia/hypocalcemia, and meconium aspiration.

(g) Other complications include pulmonary hemorrhage, pneumonia, and pneumothorax.

(2) Nursing care considerations.

(a) Observe for respiratory distress.

(b) Monitor I&O.

(c) Provide stable thermoregulation. Keep the infant warm and away from drafts.

(d) Support the parents by listening and answering questions.

11-4. JAUNDICE (HYPERBILIRUBINEMIA)

Jaundice is a marked accumulation of serum bilirubin levels.

a. **Classifications**.

(1) Physiologic. Jaundice occurs after 24 hours past delivery and generally disappears seven to ten days after delivery. It is caused by the inability of the infant's immature liver to modify bilirubin so it can be excreted from the body.

(2) Pathologic. Jaundice occurs before the baby is 24 hours of age and persists beyond seven days. It may be caused by Rh or ABO incompatibility sepsis, excessive bruising, or metabolic disorders.

b. **Signs and Symptoms**.

(1) Appearance. Jaundice is a yellowish appearance in the skin, sclera of the eye, or oral mucosa. The onset of jaundice is usually on the face with advancement to the trunk and extremities. Blanching the skin on a bony prominence allows for easy assessment.

NOTE: The blanch test refers to applying pressure with the thumb over a bony area for several seconds to empty all capillaries in that spot. The blanched area will look yellow before the capillaries of jaundice is present.

(2) Lethargy.

(3) Poor feeding.

(4) Dark stools.

(5) High-pitched cry and diminished or absent moro and sucking reflex - with ensuing neurologic damage.

(6) Hyperirritability, hypertonia, seizures, and opisthotonos (tetanic spasm resulting in an arched hyperextended position of the body-with advanced neurological damage).

(7) Cerebral palsy, seizure disorders, deafness, and death - with permanent neurological damage.

c. **Complications**.

(1) Kernicterus-a yellowish discoloration of specific areas to brain tissues by unconjugated bilirubin. This accumulation of bilirubin rises to toxic levels and is deposited in the brain causing brain damage.

(2) Nephrotoxic bilirubin-this refers to the bilirubin level in the blood being toxic and is, therefore, destructive to kidney cells.

(3) Hearing loss.

d. **Treatment/Nursing Care**.

(1) Early feedings. This is important to stimulated digestive processes in the intestines which are necessary to establish bacterial flora and to decrease enterohepatic circulation of bilirubin.

(2) Phototherapy. This allows for the utilization of alternate pathways for bilirubin excretion. Lights break down the pigment in the skin so that it can be excreted. The nurse must:

(a) Monitor the infant's temperature.

(b) Apply meticulous eye care. Ensure patches are in place over the infant's eyes.

(c) Monitor I&O, skin turgor, daily weights, and skin breakdown.

(3) Albumin. This method transports bilirubin to the liver for modification. Albumin-bound bilirubin is not able to penetrate the blood-brain barrier, which aids in the prevention of kernicterus.

(4) Exchange transfusion. This is the most direct method of eliminating bilirubin. Transfusion is generally reserved for more severe cases secondary to complications. The goal is to exchange the neonate's blood with fresh donor blood.

(5) Observance.

(a) For appearance of an increase in jaundice.

(b) For changes in urination frequency or pigmentation.

(c) For behavioral changes.

11-5. INTRACRANIAL HEMORRHAGE

a. Intracranial hemorrhage is caused by trauma or anorexia in utero or at the time of birth. It most frequently occurs in preterm neonates but may also be found in full-term babies. Difficult and very rapid deliveries are often associated with intracranial hemorrhage.

b. Symptoms depend on the areas of hemorrhage and the amount and extent of the hemorrhage. It may be subtle or pronounced, occur at birth, or within several days following birth.

(1) Low APGAR scores.

(2) Irregular respirations.

(3) Cold, pale, and clammy skin.

(4) Bulging or tense fontanels.

(5) Unequal pupils.

(6) Diminishing moro reflex.

(7) Opisthotonos.

(8) Seizures.

c. Medical and nursing interventions.

(1) Keep the infant in a quiet environment.

(2) Avoid stressful or stimulating procedures.

(3) Monitor respiratory functions and temperature instability.

(4) Feed as tolerated.

(5) Administer sedatives and/or vitamin K as ordered.

d. Prognosis depends on the severity of the hemorrhage and the precipitating factors. Some neonates demonstrate mild symptoms with few effects while others may progress to seizuring and death. Survival after a severe case increases the risk of permanent cerebral damage, hydrocephalus, mental and neurologic impairment, and cerebral palsy. And in addition, hydrocephalus may be present. This is excessive accumulation of cerebrospinal fluid (CSF) within the ventricular spaces of the brain-causing enlargement of the head.

11-6. TRACHEOESOPHAGEAL FISTULA AND ESOPHAGEAL ATRESIA

a. Tracheoesophageal fistula is a developmental anomaly characterized by an abnormal connection between the trachea and the esophagus and usually accompanies esophageal atresia (see figure 11-3). Esophageal atresia is failure of the esophagus to form a continuous passage from the pharynx to the stomach. There are some cases of Tracheoesophageal fistula without esophageal atresia.

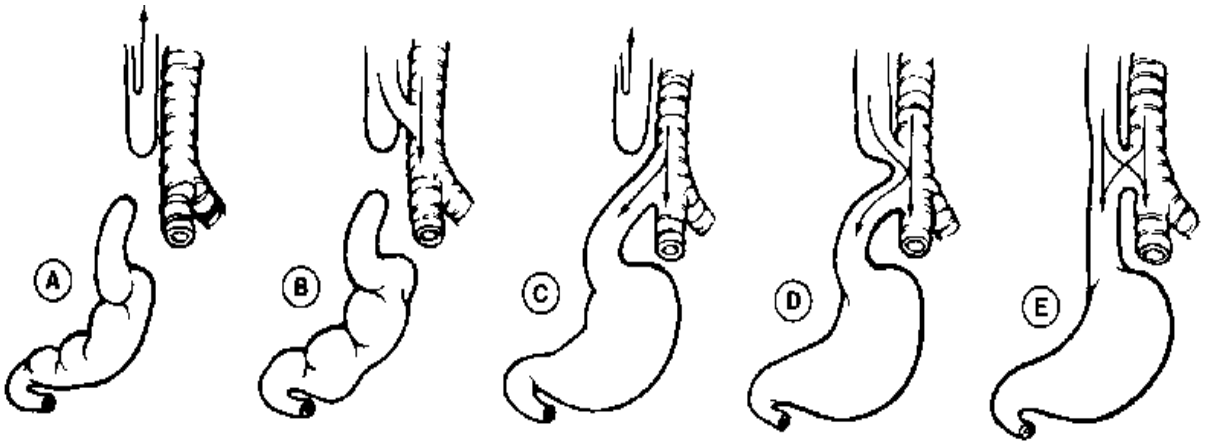

Figure 11-3. Tracheoesophageal fistula and esophageal atresia.

b. Signs and symptoms vary according to location of fistula and atresia.

(1) The infant appears to swallow normally but soon after coughs, struggles, become cyanotic, and stops breathing.

(2) Stomach distention may cause respiratory distress.

(3) Air and gastric contents may reflux through the fistula into the trachea resulting in chemical pneumonitis.

(4) If there is esophageal atresia without a fistula, as secretions fill the esophageal sac and overflow into the oropharynx, the infant develops mucus in the oropharynx and drools excessively.

(5) Repeated episodes of pneumonitis, pulmonary infection and abdominal distention may be present.

c. Diagnosis.

(1) Catheter passed through the nose meets an obstruction.

(2) Chest x-ray.

(3) Abdominal x-ray.

(4) Cinefluorography.

d. Treatment.

(1) Tracheoesophageal fistula and esophageal atresia requires surgical correction and are usually considered a surgical emergency.

(2) The type of surgical procedure and when it is performed depends on the nature of the anomaly, the patient's general condition, and the presence of coexisting congenital defects.

e. Postoperative complications.

(1) Tracheoesophageal fistula.

(a) Recurrent fistulas.

(b) Esophageal mobility dysfunction.

(c) Esophageal stricture.

(d) Recurrent bronchitis.

(e) Pneumothorax.

(f) Failure to thrive.

(2) Esophageal atresia.

(a) Impaired esophageal motility.

(b) Hiatal hernia.

(c) Reflux esophagitis.

f. Nursing interventions.

(1) Monitor respiratory status.

(b) Perform pulmonary physiotherapy.

(c) Suction as necessary.

(2) Administer antibiotics and parenteral fluids as ordered.

(3) Accurate I&O.

(4) Observe for signs of complications (that is, pneumothorax).

(5) Maintain gastrostomy tube feedings.

(6) Give the baby a pacifier to satisfy his sucking needs but only when he can safely handle secretions.

(7) Offer the parents support and guidance and encourage bonding.

(8) Positioning before and after surgery varies with the doctor's philosophy and the child's anatomy.

(a) Supine with his head low to facilitate drainage.

(b) Head elevated to prevent aspiration.

11-7. DOWN'S SYNDROME

a. Down's syndrome is referred to as a chromosomal abnormality involving an extra chromosome (number 21). It is characterized by a typical physical appearance and mental retardation. The extra chromosome is known as trisomy 21, an aberration in which chromosome 21 has three copies instead of the normal two because of faulty meiosis of the ovum or the sperm. It may be inherited or not inherited. Overall, it occurs in 1 per 650 live births. The incidence increases with maternal age, especially after age 35. Women over 35 years old account for bearing 50 percent of all children with Down's syndrome. Paternal age doesn't seem to play a significant part. This suggests that sometimes the chromosome abnormality responsible for Down's syndrome results from deterioration of the oocyte because of age alone or because of the accumulated effects of environmental factors.

b. Signs and symptoms. See figure 11-4 for a typical Down's syndrome child.

(1) Mental retardation is obvious as infants grow older.

(2) Marked hypotonia and floppiness.

(3) Joint hyperextension or hyperflexibility.

(4) Tendency to keep mouth open with his tongue protruding, high arched palate, and furrowed tongue.

(5) Eyes slant upwards and outward with internal epicanthal folds.

(6) Flattened nasal bridge and flat facial profile.

(7) Small ears, often incompletely developed, low set.

(8) Single transverse palmar crease-simian crease.

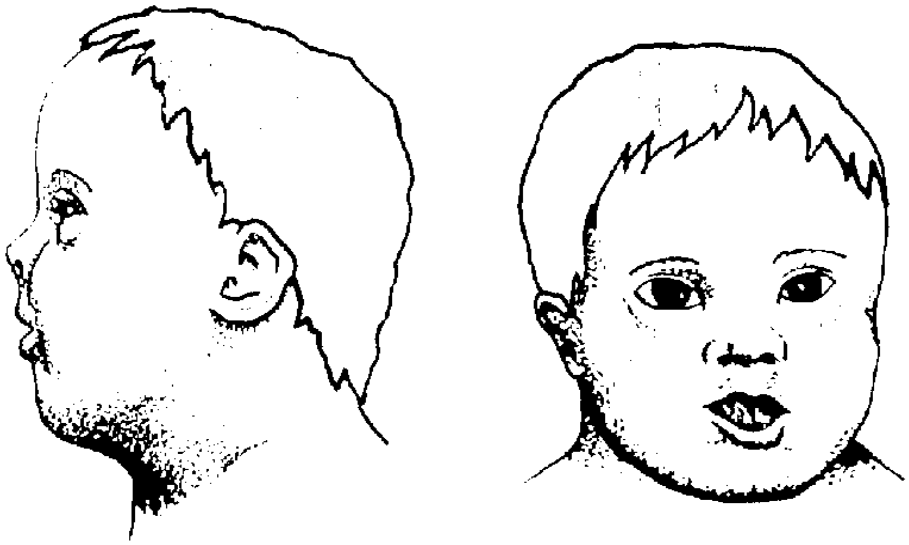

Figure 11-4. Clinical features of Down's syndrome.

c. Diagnosis.

(1) Physical findings at birth.

(2) Karyotype (chromosomal analysis). This will show how the third chromosome, number 21, is attached to another autosome in terms of location or nondisjunction.

(3) Amniocentesis.

d. Treatment. There is no known cure for Down's syndrome. Surgery is available to correct heart defects and other congenital abnormalities. Antibiotic therapy for recurrent infections is also available.

e. Nursing intervention.

(1) Be careful and alert to infant's feedings. Due to poor muscle tone and his protruding tongue, the infant may be a poor eater.

(2) Observe for complications that may occur with Down's syndrome.

(a) Abdominal distention and vomiting.

(b) Irregularities in pulse of respiratory rate-cyanosis, tires easily with feeding.

(3) Support the infant and carefully position him.

(4) Provide proper stimulation to meet the infant's needs-positive and effective sensory stimulation.

(5) Encourage parental participation in the infant's care.

11-8. ERYTHROBLASTOSIS FETALIS

a. This is considered a hemolytic disease of the fetus and newborn, which stems from an incompatibility of fetal and maternal blood which results in maternal antibody activity against fetal red blood cells (RBCs). This disease usually is a result from Rh isoimmunization. During her first pregnancy, an Rh-negative female becomes sensitized by exposure to Rh-positive fetal blood antigens inherited from the father. A subsequent pregnancy with an Rh-positive fetus provokes increasing amounts of maternal agglutinating antibodies to cross the placental barrier, attach to Rh-positive cells in the fetus, and cause hemolysis and anemia. To compensate for this, the fetus steps up the production of RBCs, and erythroblasts appear in the fetal circulation. Extensive hemolysis results in the release of large amounts of unconjugated bilirubin, which the liver is unable to modify and excrete, causing hyperbilirubinemia and hemolytic anemia.

b. Signs and symptoms include:

(1) Jaundice - usually not present at birth but may appear as soon as 30 minutes later or within 24 hours after birth.

(2) Edema.

(3) Petechiae.

(4) Grunting respirations.

(5) Neurologic unresponsiveness.

(6) Bile-stained umbilical cord.

c. Treatment depends on the degree of maternal sensitization and the effects of hemolytic disease on the fetus or newborn.

(1) Intrauterine-intraperitoneal transfusion.

(a) This is performed when amniotic fluid analysis suggests the fetus is severely affected and delivery is inappropriate due to fetal immaturity.

(b) A transabdominal puncture into the fetal peritoneal cavity allows infusion of group O, Rh-negative blood.

(c) This may be repeated every two weeks until the fetus is mature enough for delivery.

(2) Exchange transfusion. This removes antibody-coated RBCs and prevents hyperbilirubinemia through removal of the infant's blood and replacement with fresh group O, Rh-negative blood.

(3) Albumin infusion. This aids in the binding of bilirubin, reducing the chances of hyperbilirubinemia.

d. Nursing interventions.

(1) Reassure parents, explain procedures, and allow them time to ventilate.

(2) Provide patient teaching.

(3) Maintain baby's temperature.

(4) Keep resuscitative equipment available.

(5) Watch for complications of transfusion.

(a) Muscular twitching.

(b) Convulsions.

(c) Dark urine.

11-9. RESPIRATORY DISTRESS SYNDROME (HYALINE MEMBRANE DISEASE)

Respiratory distress syndrome (RDS) is characterized by a progressive and frequently fatal respiratory disorder resulting from atelectasis and immaturity of the lungs.

a. **Incidence**. Respiratory distress syndrome occurs almost exclusive in infants born before the 37th week of gestation. It occurs more often in infants of diabetic mothers, those delivered by cesarean section, and those delivered suddenly after antepartum hemorrhage. This disease is the most common cause of neonatal mortality. In the US alone, it causes death of 40,000 newborns every year.

b. **Cause**. Although the airways and alveoli of an infant's respiratory system are present by the 27th week of gestation, the intercostal muscles are weak and the alveoli and capillary blood supply is immature. In RDS, the premature infant develops widespread alveolar collapse because of lack of surfactant.

c. **Signs and Symptoms**.

(1) May breathe normally at first.

(2) Rapid, shallow respirations, then prolonged apnea.

(3) Intercostal, subcostal, or sternal retractions.

(4) Nasal flaring.

(5) Audible expiratory grunting. A natural compensatory mechanism designed to produced positive end-expiratory pressure and prevent further alveolar collapse.

(6) Frothy sputum.

(7) Low body temperature.

NOTE: Early diagnosis is imperative so that treatment may begin immediately.

d. **Treatment**.

(1) Vigorous respiratory support.

(2) Warm, humidified, oxygen-enriched gases are administered by oxygen hood which is the treatment of choice.

(3) Mechanical ventilation.

(4) Radiant infant warmer or isolette.

(5) Sodium bicarbonate IV as necessary.

(6) Tube feedings or hyperalimentation.

e. **Nursing Intervention**.

(1) Monitor Arterial Blood Gases (ABGs).

(2) Monitor for infection, thrombosis, or decreased circulation to legs if the infant has an umbilical catheter.

(3) Take daily weights.

(4) Assess skin color.

(5) Monitor respiratory rate, depth, and character as well as other signs of distress.

(6) Provide parental teaching and emotional support; encourage bonding.

11-10. INFANT OF ADDICTED MOTHER

This refers to an infant who is born to a mother who is narcotic or methadone-dependent and who takes the drug or drugs in varying dosages for varying periods during her pregnancy.

a. **Etiology**. Drugs that the mother has taken during pregnancy crosses the placental barrier and enter the fetal circulation. Supply to the infant is abruptly terminated at delivery. Other agents (for example, phenobarbital and Darvon®) are capable of causing withdrawal symptoms).

b. **Degree of Withdrawl Symptoms**. The degree of withdrawal symptoms the infant manifests may be related to the duration of the mother's habit, the type and dosage requirements of her addiction, and her drug level immediately prior to delivery.

c. **Onset of Symptoms**. Heroin and methadone are the narcotic drugs most commonly involved in neonatal drug addition.

(1) Heroin addition is seen several hours after birth to three to four days of life.

(2) Methadone addition is seen seven to ten days after birth to several weeks of life.

d. **Signs of Withdrawal**.

(a) Coarse, flapping tremors.

(b) Prolonged, persistent, high-pitched cry.

(c) Vigorous, ineffective sucking, poor feeding.

(d) Excessive tearing and sweating.

(e) Sneezing, nasal stuffiness.

(f) Convulsions - with methadone withdrawal.

(g) Hyperpyrexia (an excessively high body temperature).

e. **Size**. High incidence of infants born to addicted mothers are premature and/or small for gestational age.

f. **Treatment**.

(1) Narcotic antagonist is used to counteract narcotic-induced respiratory depression.

(2) Drug therapy is used for alleviation of signs of narcotic withdrawal.

(3) Supportive therapy is given as appropriate.

g. **Nursing Care Considerations**.

(1) Be familiar with withdrawal symptoms to facilitate early diagnosis in order to decrease morbidity/mortality of high-risk infants.

(2) Record accurately and in detail all signs and observations of withdrawal.

(a) Time of onset.

(b) Duration and frequency.

(c) Severity.

(d) Treatment initiated and response.

(e) Vital signs.

(3) Decrease environmental stimuli, minimize handling.

(4) Be flexible in delivery of nursing care. The infant may be responsive to swaddling one time and react with irritability the next.

(5) Maintain fluid/caloric requirements.

(a) I&O.

(b) IV

(c) Increased caloric intake.

(d) Feed on demand schedule.

(6) Know drug actions/adverse reactions when the infant is receiving drug therapy.

11-11. INFANT WITH FETAL ALCOHOL SYNDROME

a. **Infant with fetal alcohol syndrome**. An infant with fetal alcohol syndrome (FAS) is caused by alcohol passing freely through the placental barrier and into the fetal tissue. The level of alcohol in fetal circulation is about equal to the maternal level. The fetus nerve cells are affected more than any other tissue cells. Figure 11-5 shows an infant with FSA while figure 11-6 shows older children with FAS.

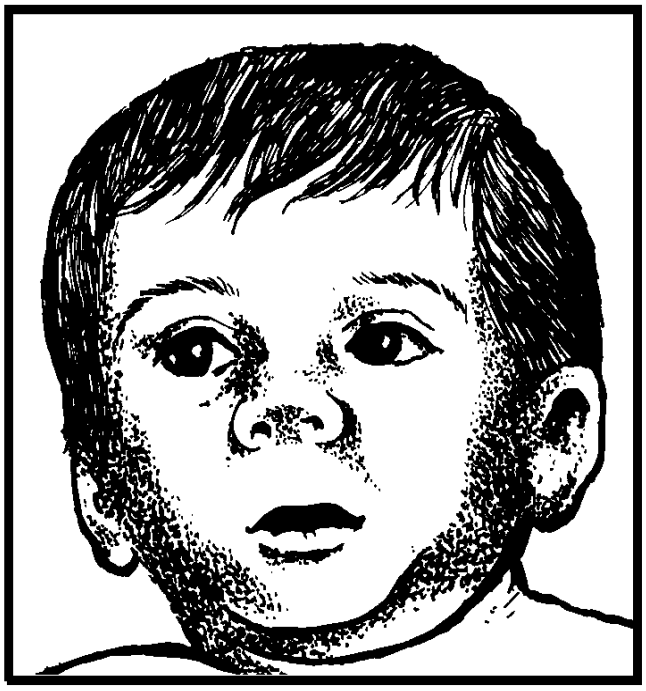

Figure 11-5. Infant with fetal alcohol syndrome.

Figure 11-6. Children with fetal alcohol syndrome.

b. **Signs and Symptoms**.

(1) Flattened profile.

(2) Short, low-bridged nose with epicanthal folds and anteverted nostrils.

(3) Microcephaly (abnormal smallness of the head).

(4) Developmental delay and delay of fine motor dysfunction.

(5) Joint anomalies related to diminished fetal movement in utero and neurologic impairment.

(6) Cardiac defects.

c. **Associated Complications**.

(1) Hypothermia.

(2) Hypoglycemia.

(3) Neonatal asphyxia.

(4) Pulmonary hemorrhage.

(5) Polycythemia.

(6) Feeding difficulties.

d. **Nursing Care Considerations**.

(1) Observe for withdrawal. It is still a controversial issue on whether the FAS infant actually experiences alcohol withdrawal symptoms. However, withdrawal symptoms include:

(a) High-pitched cry.

(b) Arching of the back.

(c) Apnea and bradycardia.

(d) Loose stools.

(2) Ask the physician if you can send a urine sample for a drug screen and have a serum ETOH done if you suspect withdrawal.

(3) Measure the infant's abdominal circumference if distention exists. The infant may require a nasogastric tube insertion.

(4) Minimize external stimuli.

(5) Feed frequently.

(6) Help the mother deal with the situation.

11-12. CLUBFOOT (TALIPES EQUINOVARUS)

a. Clubfoot is one of the most common disorders of the lower extremities. It is marked primarily by a deformed talus and shortened Achilles tendon that gives the foot a characteristic club like appearance (see figure 11-7). Clubfoot may be associated with other birth defects such as myelomeningocele.

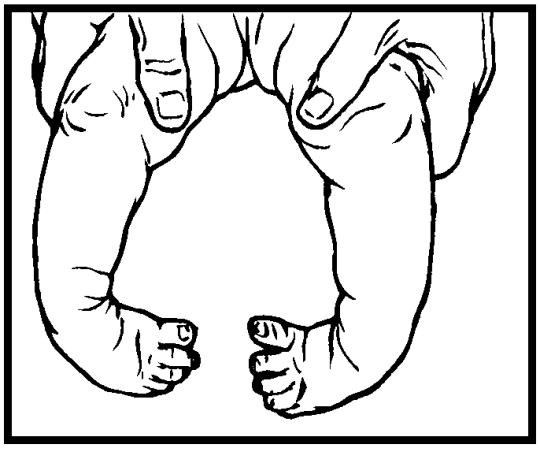

Figure 11-7. Clubfoot.

b. Signs and symptoms include the following.

(1) Shortened Achilles tendon.

(2) Calf muscles may be shortened and underdeveloped.

(3) Foot is tight in its deformed position and resists manual efforts to push it back into its normal position.

(4) Painless.

c. Treatment is administered in three stages: Correcting the deformity, maintaining the correction until the foot regains normal muscle balance, and observing the foot several years to prevent the deformity from recurring. The ideal time to begin treatment is during the first few days and weeks of life.

(1) Manipulation of the foot/feet and casting. A plaster of Paris cast is applied from the groin with the knee flexed. Once the deformity is fully corrected, the foot is held in an over corrected position in a solid cast for three to six weeks.

(2) Exercise. Passive stretching exercises are done to manipulate the foot/feet into normal position.

(3) Night splints . The Denis Brown splint is composed of a flexible horizontal bar that is attached to a pair of foot plates. The infant's feet are attached to foot plates and positioning the abduction bar and the foot plates controls the desired position of the foot.

(4) Orthopedic shoes . Orthopedic shoes may be worn during the day or as necessary.

(5) Surgery. Resistant clubfoot may require surgery.

d. Nursing intervention.

(1) Be able to recognize clubfoot as early as possible. This is of primary concern.

(2) Stress the importance of prompt treatment to parents.

(3) Care for the cast.

Continue with Exercises

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EXERCISES, LESSON 11

INSTRUCTIONS: Answer the following exercises by marking the lettered response that best answers the exercise, by completing the incomplete statement, or by writing the answer in the space(s) provided.

After you have completed all of these exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. List the three characteristics of a SGA infant.

   _____

   _____

   _____

2. The defining characteristics of a SGA infant specifies that they are small for their:

   _____

3. _____ infants refers to those infants whose birth weight places them above the 90th percentile of normal for their gestational age.

4. The_____ and the _____ are the two body systems that are most commonly affected by congenital anomalies in a SGA infant?

5. Age-related gestational conditions refers to the:

   _____ infant and the _____ infant.

6. List the three complications of jaundice:

   _____

   _____

   _____

7. If an infant survives a severe case of intracranial hemorrhage, he will subjected to a higher risk of:

_____

_____

_____

_____

8. The degree of withdrawal symptoms the infant of an addicted mother manifests may be possibly related to:

_____

_____

_____

9. A catheter passed through the nose is one method used to diagnose tracheoesophageal fistula and esophageal atresia. Other methods are:

_____

_____

_____

For exercises 10 through 17. Match the terms in Column A with the correct definition or statement as listed in Column B. Place the letter of the correct answer in the space provided to the left of Column A.

COLUMN A	COLUMN B
____ 10. Esophageal atresia.	a. Gestation period is 42 weeks or longer.
____ 11. Clubfoot.	b. Frothy sputum.
____ 12. Down's syndrome.	c. Treatment for Erythroblastosis fetalis.
____ 13. Esophageal mobility dysfunction.	d. Marked hypotonia and floppiness.
____ 14. Erythroblastosis fetalis symptom.	e. One of the most common disorders of the lower extremities.
____ 15. RDS symptom.	f. The esophagus fails to form a continuous passage from the pharynx to the stomach.
____ 16. Exchange transfusion.	g. Postoperative complication of tracheoesophageal fistula.
____ 17. Postmature infant.	h. Bile-stained umbilical cord.

For exercises 18 through 26. The following exercises refer to nursing care considerations/procedures for the twelve problems of the neonate. Match the correct nursing care considerations procedures in Column A to the neonate problem in Column B. Place. your answer in the spaces provided to the left of Column A.

COLUMN A	COLUMN B
____ 18. Access hematocrit.	a. LGA infant.
____ 19. Feed frequently.	b. Intracranial hemorrhage.
____ 20. Decrease environmental stimuli.	c. Down's syndrome.
____ 21. Employ measures to prevent infection.	d. Clubfoot.
____ 22. Avoid stressful or stimulating procedures.	e. Tracheoesophageal fistula or esophageal atresia.
____ 23. Monitor ABGs.	f. Erythroblastosis fetalis.
____ 24. Stress importance of prompt treatment to parents.	g. Respiratory Distress Syndrome.
____ 25. Be alert and careful of infant's feeding.	h. Infant of addicted mother.
____ 26. Perform pulmonary. physiotherapy.	i. SGA infant.
	j. Fetal Alcohol Syndrome.

Check Your Answers on Next Page

SOLUTIONS, LESSON 11

1. The infant appears thin and wasted, skin is loose and dry.
   There is little subcutaneous fat, the face appears shrunken and wrinkled.
   The length and head size may be normal but the head looks comparison really big in comparison to the rest of the body. (para 11-2a)

2. Designated gestational age. (para 11-2a)

3. Large for gestational age. (para 11-2b)

4. Genitourinary system.
   Cardiovascular system. (para 11-2a(3)(f))

5. Premature.
   Postmature. (para 11-3a, b)

6. Kernicterus.
   Nephrotoxic.
   Hearing loss. (para 11-4c)

7. Permanent cerebral damage.
   Hydrocephalus.
   Mental and neurologic impairment.
   Cerebral palsy. (para 11-5d)

8. Duration of mother's habit.
   Type and dosage requirements of her addiction.
   Mother's drug level immediately prior to delivery. (para 11-10b)

9. Chest x-ray.
   Abdominal x-ray.
   Cinefluorography. (para 11-6d)

10. f (para 11-6a(2))

11. e (para 11-12a)

12. d (para 11-7b(2))

13. g (para 11-6e(1)(b))

14. h (para 11-8b(6))

15. b (para 11-9c(6))

16. c (para 11-8c(2))

17. a (para 11-3b)

18. e (para 11-2a(4)(e))

19. j (para 11-11d(5))

20. h (para 11-10g(3))

21. a (para 11-2b(2)(c))

22. b (para 11-5c(2))

23. g (para 11-9e(1))

24. d (para 11-12d(2))

25. c (para 11-7g(1))

26. e (para 11-6f(1)(b))

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