

Neonatal Chest Radiography for Technologists

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Radiology

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Examination

- To allow for serial newborn chest x-ray exams to be compared without compensating for changes in rotation, in the author's newborn intensive care unit, it is a policy that all frontal films are obtained with the patient**
 - prone, with the arms down by the sides, and the pelvis stabilized.
 - supine, with the arms extended above the head, and the pelvis stabilized.
 - in a lateral decubitus position with the pelvis stabilized.
 - supine, with the arms down by the sides and the head stabilized.
 - prone, with the arms extended above the head, and the pelvis stabilized.
- It is also essential that technique factors be standardized for each patient. If at all possible, a single portable unit should be used for all neonatal x-ray procedures. Tube-film distance should be kept constant at about _____ .**
 - ten to twenty inches.
 - twenty to thirty inches.
 - twenty-five to thirty-five inches.
 - thirty-six to forty inches.
 - forty-two to fifty inches.
- The endotracheal tube (ETT) should be located somewhere between the suprasternal notch and the carina. This corresponds with the _____ thoracic vertebra (approximately).**
 - first through the third
 - second through the fifth
 - third through the seventh
 - fourth through the sixth
 - sixth through the eighth
- With the head restrained in the neutral or AP position the tip of the ETT is actually about _____ it would be with the head turned to the side.**
 - one half to one centimeter lower than
 - one to two inches lower than
 - one to two inches higher than
 - one half to one centimeter higher than
 - the same as
- Umbilical artery catheters are usually placed either "high" between the _____ thoracic vertebra or low, at approximately the level of the aortic bifurcation (or about L3-L4).**
 - first and third
 - third and fifth
 - sixth and tenth
 - fourth and sixth
 - ninth and twelfth
- The umbilical venous catheter (UVC) is usually positioned at the base of the _____.**
 - left atrium
 - left ventricle

- c. right atrium
 - d. right ventricle
 - e. pulmonary artery
7. **The most common diagnosis in premature infants admitted to the newborn intensive care unit is known as _____.**
- a. Congenital Heart Disease
 - b. Bronchopulmonary Dysplasia
 - c. Congenital Diaphragmatic Hernia
 - d. Pulmonary Sequestration
 - e. Hyaline Membrane Disease
8. **Hyaline Membrane Disease (HMD) represents a deficiency in production of a substance known as _____.**
- a. pulmonary mucus
 - b. silicone
 - c. simethicone
 - d. surfactant
 - e. cortisol
9. **Regarding Hyaline Membrane Disease (HMD), all of the following statements are true EXCEPT**
- a. on chest xray, the lungs have a ground glass appearance
 - b. a common problem of HMD is pneumothorax, which may shift mediastinal structures to the opposite side
 - c. on chest xray there is usually air bronchogram formation seen at the periphery
 - d. a common problem of HMD is atelectasis, which is often a complication of high ventilator settings
 - e. because it is a common problem of prematurity, administering corticosteroids to the mother during premature labor can significantly reduce the severity of HMD
10. **Pneumothorax can be difficult to diagnose. In cases where the diagnosis of pneumothorax is uncertain, the best view is the**
- a. lateral decubitus with the suspected side for the abnormality up
 - b. cross table lateral view in the supine position
 - c. lateral decubitus with the suspected side for the abnormality down
 - d. cross table lateral view in the prone position
 - e. supine position, with the arms down by the sides
11. **As HMD begins to resolve some premature infants may go into heart failure because of abnormal blood flow through the**
- a. Patent Ductus Venosus
 - b. Patent Ductus Thoracicus
 - c. Patent Ductus Hepaticus
 - d. Patent Ductus Cysticus
 - e. Patent Ductus Arteriosus
12. **The premature infants PDA may stay open and allow blood to flow from the**
- a. aorta into the pulmonary artery
 - b. superior vena cava into the pulmonary artery
 - c. inferior vena cava into the pulmonary artery
 - d. pulmonary artery into the superior vena cava
 - e. pulmonary artery into the inferior vena cava
13. **Radiographically, a PDA manifests itself as an enlargement of the heart with diffuse infiltrates, typical of pulmonary edema. All of the following have been used in treating the complications of a PDA, EXCEPT**

- a. fluid restriction
 - b. diuretics
 - c. the anti-inflammatory drug Indomethacin
 - d. surfactant
 - e. surgical ligation
14. **Newborn infants who do have a complicated hospital course with hyaline membrane disease and heart failure often develop chronic lung changes. These abnormalities are termed Bronchopulmonary dysplasia (BPD) and the appearance of this on a chest radiograph is variable, but in general,**
- a. the infiltrates are fine and the lungs appear under expanded
 - b. the infiltrates are coarse and the lungs appear hyper expanded
 - c. the film is consistent with pulmonary edema
 - d. the only abnormality seen is an enlarged heart
 - e. the appearance of bowel gas is seen within the left hemithorax
15. **In general, term infants have few serious pulmonary problems. The most common is known as**
- a. Mild Hyaline Membrane Disease
 - b. Transient Patent Ductus Arteriosus
 - c. Transient Pulmonary Edema
 - d. Pulmonary Sequestration
 - e. Transient Tachypnea of the Newborn or Retained Lung Fluid
16. **TTN is more commonly recognized in infants**
- a. that are delivered vaginally
 - b. that have other congenital anomalies
 - c. that are delivered by cesarean section
 - d. that have congenital heart disease
 - e. that have pulmonary sequestration
17. **The most common serious pulmonary disorder in term infants is**
- a. Congenital Diaphragmatic Hernia
 - b. Sepsis or Pneumonia
 - c. Pulmonary Sequestration
 - d. Hyaline Membrane Disease
 - e. Hydrops Fetalis
18. **One of the most important congenital anomalies is Congenital Diaphragmatic Hernia (CDH). If the herniation is large and occurs early in fetal development**
- a. there can be hypoplasia of one or both lungs
 - b. congenital heart defects can be created
 - c. the lungs can become fused
 - d. this will cause a pulmonary sequestration to occur
 - e. a permanent shift of cardiac structures might occur
19. **The chest x-ray findings in congenital Diaphragmatic Hernia (CDH) are characteristic. Within several minutes to an hour after delivery a chest radiograph will show**
- a. a typical "ground glass" appearance.
 - b. air bronchogram formation
 - c. air in the pleural space that rises to the upper most portion of the chest
 - d. air filled loops of bowel within the affected hemithorax
 - e. enlargement of the heart with diffuse infiltrates
20. **Pulmonary Hypoplasia or under development of the lung is a rare congenital malformation which can**

be either unilateral or bilateral. At birth, these infants present with severe respiratory distress and require resuscitation. The initial chest radiograph will often demonstrate what appears to be

- a. bilateral infiltrates
- b. complete opacification
- c. bilateral pneumothoraces
- d. air bronchogram formation
- e. pulmonary edema



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