Radiology Review

Sandra Sullivan, MD, IBCLC
Clinical Associate Professor
Division of Neonatology, Department of Pediatrics, University of Florida
Director, Center for Breastfeeding and Newborns, Gainesville, FL

The speaker has signed a disclosure form and indicated she has no significant financial interest or relationship with the companies or the manufacturer(s) of any commercial product and/or service that will be discussed as part of this presentation.

Session Summary

Key points for interpreting radiographs in neonates will be discussed as background. Radiographs of common, as well as some uncommon, findings in neonates will be shown.

Session Objectives

Upon completion of this presentation, the participant will be able to:

- understand the basics of interpreting radiographs;
- identify different pathology which may be encountered in a chest radiograph;
- identify various radiographs of different GI pathology.

Test Questions

Each x-ray in the following session outline has a bit of history written on it. Take the following quiz as you review the x-rays. Please download, review the x-rays, and take the quiz prior to the workshop.

Helpful Hints

- Air is BLACK, and everything else is a shade of gray.
- Air rises to the highest point.
- Many x-rays are taken to document tube and line position—always check these first.
- Radiologists work at a comfortable pace.
- Radiologists rarely work alone (...you may consult others as you review).

References


Neonatal Radiology Review

Radiology 101

Air is Black
Everything else is white

Sandra Sullivan, MD, IBCLC
What is this an X-RAY of?

What is this an X-RAY of?
Important Points to Remember When Viewing X-Rays

- Air is black
- Everything else is white
- Air rises to the top
- Always look at the placement of your catheters and various tubes
- View surrounding tissues

Case 1

Term newborn baby, vomiting with every feed.
Case 2

Term newborn with tachypnea

Case 3

Baby intubated for elective surgery and has low saturations
Case 4

A 10-day old ex-30 week infant with sudden onset of tachypnea and retractions

Case 5

1500 gram infant, now 2 days old, with worsening respiratory distress
Case 6

Intubated for stridor, immediately improves

Case 7

Intubated for apnea associated with NEC
Case 8

This baby is cyanotic at birth

Case 9

12-day old ex 27 week infant with distended abdomen
Case 10

Ventilated premature infant who suddenly decompensates

Case 11

Newborn with mild respiratory distress
Case 12

Mild tachypnea in baby whose mother is GBS positive

Case 13

Term newborn with tachypnea
Case 14

Term newborn in marked distress

Case 15

30-week infant born via stat C-section for severe bradycardia
Case 16

Admission CXR in a 25-week premature infant born via stat C-section for breech presentation with no history of prenatal care

Case 17

X-Ray obtained for line placement
Case 18

X-Ray at 30 hours of life for tachypnea and mild grunting in a full term newborn born via SVD

Case 18—4 Hours Later
Case 19

X-Ray for tube placement

Case 20

30-week infant with history of anhydramnios
Case 21

12-hour old premature infant with acute deterioration

Case 22

2-day old 25-week infant with worsening blood gases
Case 23

Full term Infant with history of meconium stained fluid and now has increased work of breathing

Case 24

Baby with severe respiratory distress at birth
Case 25

Full term infant with bilious emesis

Case 26

Baby is cyanotic and does not improve with 100% oxygen
Case 27

Full term infant with feeding intolerance and intermittent respiratory distress

Case 28

CXR to evaluate murmur in a newborn
Case 29

Tachypnea, retractions, enlarged liver

Case 30

37-week infant born via C-section with tachypnea at 2 hours of life
Case 31

2-day old 28-week infant with mild abdominal distension and bilious residuals

Case 32
Case 33

Findings: Single view chest, the cardiac apex is directed to the right, and the liver is on the left. I discussed this with the technologist, who verified that the radiograph is marked correctly. Therefore, these findings represent heterotaxy. The lungs are well aerated. No pneumothoraces. There is air with the bowel. IMPRESSION: Right-sided cardiac apex with left-sided liver, findings representing heterotaxy. This could be confirmed with a follow-up radiograph or abdominal ultrasound.

Case 34

Findings: Single view chest, the cardiac apex is directed to the right, and the liver is on the left. I discussed this with the technologist, who verified that the radiograph is marked correctly. Therefore, these findings represent heterotaxy. The lungs are well aerated. No pneumothoraces. There is air with the bowel. IMPRESSION: Right-sided cardiac apex with left-sided liver, findings representing heterotaxy. This could be confirmed with a follow-up radiograph or abdominal ultrasound.
Case 34

[Imagery of radiology images]
Classification-Anatomy
Classification-Anatomy

Classification-Anatomy
Classification-Grade I

Classification-Grade I
Classification-Grade II

Coronal  |  Sagittal  |  Sagittal

Classification-Grade II

[Image of brain tissue section]
Classification-Grade III

Classification-Grade III
Classification-Grade III

[Image: MRI scan of brain]

Classification-IPE

[Image: Ultrasound images of a fetus]