Pediatric Cardiopulmonary Case Presentations

Arthur Jones, EdD, RRT

This Presentation is Approved for
1 CRCE Credit Hour

Learning Objectives

- Presented with patient scenarios, including relevant data, identify important diagnostic findings & explain their implications

Acknowledgement

These cases originate from Pediatric Cases in Emergency Medicine & are used with their permission.
Editors:
Loren G. Yamamoto, MD, MPH
Alson S. Inaba, MD
Robert M. DiMauro, MD
Kapiolani Medical Center For Women And Children
Dept. Pediatrics, University of Hawaii John A. Burns School of Medicine
1319 Punahou Street, Honolulu, HI 96826
These cases are available, at no cost, at this web address:
http://www.hawaii.edu/medicine/pediatrics/pemxray/pemxray.html

Diminished Breath Sounds

Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

- This is a 23-month old female with a history of vomiting 3 - 4 times per day for three days. She has a past history of reactive airway disease & congenital heart block (maternal systemic lupus) requiring a permanent implanted pacemaker. She was seen three days prior to this in the emergency department for wheezing & stomach pain. She was noted to have bilateral wheezing. Her respiratory rate was 32. An oxygen saturation was not recorded. Her abdominal exam was benign.

Diminished Breath Sounds

Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

- The wheezing was treated with beta adrenergic agents resulting in improvement & the patient was discharged. At discharge her lungs were noted to be clear. She was instructed to continue albuterol & theophylline.
- Admission exam: VS T36.6 (ax), P 110, R 32, BP 112/70, weight 10.1 kg (10th percentile). Her weight three days ago in the ED was 10.66 kg. Oxygen saturation was 98 - 99% on room air.

Diminished Breath Sounds

Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

- She was noted to be crying, but somewhat lethargic. HEENT exam significant for somewhat sunken eyes, dry oral mucosa, & absence of tears when crying. Neck supple. Heart regular without murmurs. Lungs clear with decreased breath sounds at the left base. No wheezing was noted. There was a left thoracotomy scar & a left subcostal scar. Abdomen noted to have a palpable pacemaker in the left anterior abdominal wall & a reducible umbilical hernia.

Diminished Breath Sounds

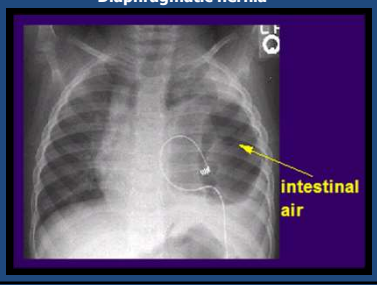
Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

- The abdomen was flat & soft without masses, organomegaly, or tenderness. Bowel sounds were active. Capillary refill time in the extremities was two seconds & the skin turgor was good. An admission work-up included the following laboratory results: CBC WBC 8.9, 56 segs, 32 lymphs, 12 monos, Hgb 12, Hct 38, platelets adequate. Na 132, K 4.2, Cl 100, Bicarb 21, BUN 14, Cr 0.7, glucose 94. A chest radiograph was obtained.

Diminished Breath Sounds

Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

Diaphragmatic hernia



Teaching Points

Volume 1, Case 6 - Loren G. Yamamoto, M.D., MPH

- Diaphragmatic hernia is not always diagnosed at birth
- Diaphragmatic hernia may present with signs of airway obstruction &/or pneumothorax
- Crying, bag-mask ventilation worsen condition by causing swallowing of air & inflation of intestines in the chest

Foreign Body Aspiration in a Child

Volume 1, Case 8 - Rodney B. Boychuk, M.D.

- A 17-month old male presents to the ED in the evening with a one hour history of noisy & abnormal breathing after a choking episode while he was eating a chocolate & almond bar. He was able to speak & drink fluids without difficulty.
- Exam: VS T 36.8, P 200 (crying), R 28 (crying), oxygen saturation 99% on room air. He appeared alert with no signs of respiratory distress. He was able to speak, had no cyanosis, no drooling, & no dyspnea.

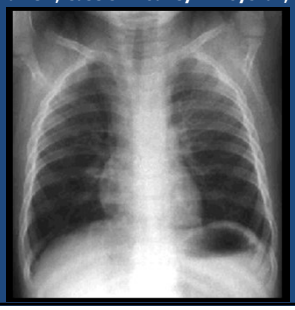
Foreign Body Aspiration in a Child

Volume 1, Case 8 - Rodney B. Boychuk, M.D.

- His lung sounds showed mild wheezing with possible mild inspiratory stridor. An albuterol aerosol was administered but no improvement was noted. A chest radiograph was ordered.

Foreign Body Aspiration in a Child

Volume 1, Case 8 - Rodney B. Boychuk, M.D.



Foreign Body Aspiration in a Child

Volume 1, Case 8 - Rodney B. Boychuk, M.D.

- This CXR is within normal limits, however when a clinical suspicion of an airway foreign body is present, a standard PA & lateral CXR are an insufficient evaluation. A lateral neck film should be obtained to examine the upper airway for evidence of swelling or foreign body. Decubitus films &/or expiratory films should also be obtained to look for evidence of air trapping.

Foreign Body Aspiration in a Child

Volume 1, Case 8 - Rodney B. Boychuk, M.D.

- The patient was taken to the operating room for bronchoscopy. At bronchoscopy, about 15 - 20 pieces of nut particles in the lower trachea & in both major bronchi were found. They were somewhat difficult to remove because of their small size. Most were removed with grasping forceps & suction. He did well postoperatively.

Teaching Points

Volume 1, Case 8 - Rodney B. Boychuk, M.D.

- Aspirated particles, like food, may not be visible on the chest xray
- Aspiration often presents with localized wheezing &/or stridor
- Suspected aspiration indicates bronchoscopy
- This patient would have developed recurrent pneumonia, with the potential of severe complications if he were not properly managed

Respiratory Distress - That's a Tension Pneumothorax... Isn't It ?

Volume 1, Case 9 - Linda M. Rosen, M.D.

- A two & one half week old male infant presents with a history of distressed noisy breathing for several hours, progressively worsening with periods of apnea & cyanosis. Birth history was that of a full term, NSVD, 7 lb 8 oz born to a 23 y/o G3P2 mother without sepsis risk factors. He seemed to be doing well since discharge but had been noted by his parents to have "funny breathing" since birth.
- Exam VS T 36.7, P 160, R 60, BP 100/70. Oxygen saturation 86% on room air.

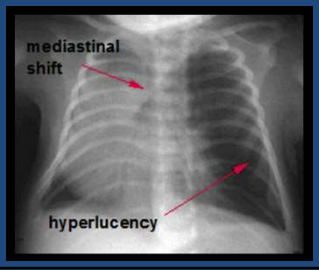
Respiratory Distress - That's a Tension Pneumothorax... Isn't It ?

Volume 1, Case 9 - Linda M. Rosen, M.D.

- He was alert & anxious, with obvious tachypnea & retractions. Skin color was intermittently dusky until oxygen was administered & then remained pink (oxygen saturation 96 - 100%). Intercostal & subcostal retractions present. Breath sounds are faint throughout the chest, without auscultatory rales, wheezes, or stridor heard.

Respiratory Distress - That's a Tension Pneumothorax... Isn't It ?

Volume 1, Case 9 - Linda M. Rosen, M.D.



Teaching Points

Volume 1, Case 9 - Linda M. Rosen, M.D.

- This CXR shows hyperlucency of the left chest with a mediastinal/cardiac shift to the right
- Management Questions: This looks like left tension pneumothorax
- Should you perform an emergency needle thoracostomy?
- Diagnosis: congenital lobar emphysema
- A needle thoracostomy would harm the patient

Wheezing & Cyanosis in a 16-Month Old

Volume 2, Case 3 - Collin S. Goto, M.D.

- The patient is a 16-month old male who presents to the Emergency Department with a one day history of coughing, congestion, & runny nose. His only medications were acetaminophen & a cough syrup. His mother stated that he had a heart murmur, for which he had been seen by a cardiologist & told that he had a hole in his heart that would close on its own

Wheezing & Cyanosis in a 16-Month Old

Volume 2, Case 3 - Collin S. Goto, M.D.

- Exam: VS T 37.1R, P 170, R 48, BP 112/74, oxygen saturation 78% on room air. The patient appeared pale & irritable, with moderate respiratory distress. Peripheral & central cyanosis were present. Diffuse wheezes were heard bilaterally
- The patient was treated with 100% oxygen, subcutaneous terbutaline, & albuterol aerosols

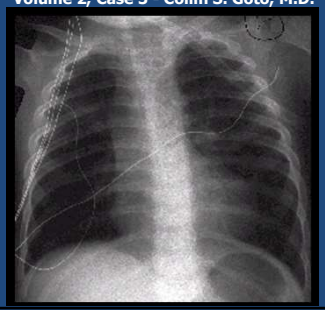
Wheezing & Cyanosis in a 16-Month Old

Volume 2, Case 3 - Collin S. Goto, M.D.

- The patient's oxygen saturation decreased to the 50's with crying, but returned to the 70's when he was calmed down. He was placed in the knee chest position & a dose of morphine was given IV. He continued to have inspiratory & expiratory wheezes. Albuterol & ipratropium bromide aerosols were given. A CXR & an EKG were done.

Wheezing & Cyanosis in a 16-Month Old

Volume 2, Case 3 - Collin S. Goto, M.D.



Wheezing & Cyanosis in a 16-Month Old

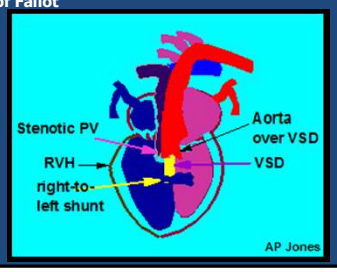
Volume 2, Case 3 - Collin S. Goto, M.D.

- This CXR shows a boot-shaped heart with an upturned apex secondary to right ventricular hypertrophy & a concavity of the left upper heart border (pulmonary outflow tract hypoplasia)

Wheezing & Cyanosis in a 16-Month Old

Volume 2, Case 3 - Collin S. Goto, M.D.

Tetralogy of Fallot



Teaching Points

Volume 2, Case 3 - Collin S. Goto, M.D.

- Congenital heart disease often presents as a respiratory condition
  - Arterial desaturation
  - Wheezing
- Knee-to-chest (fetal) position is part of the management of tetralogy (tet) spells
- Excessive FiO_2 can only harm patients with cyanotic congenital defects

Wheezing & Distress in a 7-Week Old Child: Coarctation

Volume 2, Case 6 - Collin S. Goto, M.D.

- This is a 7-week old term female infant who presented in mid November with wheezing, coughing, & two episodes of non bilious emesis. She was seen by her pediatrician, who suspected that she had bronchiolitis, & she was treated with oral albuterol syrup.
- The patient's condition worsened, & she was brought to the Emergency Department later that evening.

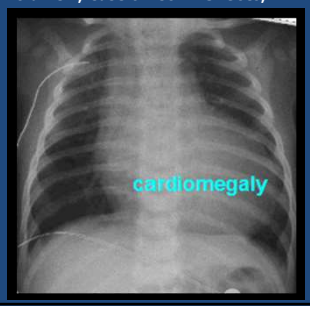
Wheezing & Distress in a 7-Week Old Child: Coarctation

Volume 2, Case 6 - Collin S. Goto, M.D.

- Exam: VS T 37, P 168, R 70, BP 126/86, oxygen saturation 96% on room air. The infant was fussy, with moderate respiratory distress. The lungs had diffuse wheezes & crackles bilaterally with intercostal retractions.
- Capillary refill time in the extremities was 3 seconds. Blood pressures in the extremities showed 126/86 (left arm), 69/41 (left leg).

Wheezing & Distress in a 7-Week Old Child: Coarctation

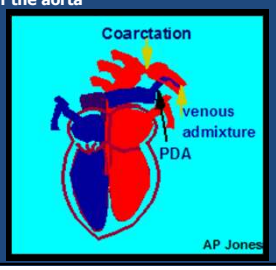
Volume 2, Case 6 - Collin S. Goto, M.D.



Wheezing & Distress in a 7-Week Old Child: Coarctation

Volume 2, Case 6 - Collin S. Goto, M.D.

Coarctation of the aorta



Teaching Points

Volume 2, Case 6 - Collin S. Goto, M.D.

- Congenital heart defects are not always diagnosed at birth
- Congenital heart defects may cause congestive heart failure & pulmonary edema, with
  - Wheezing
  - Crackles
  - Arterial desaturation
- Coarctation causes greater blood pressure & pulses in upper body than in lower body

Sweeping the Airway for a Foreign Object

Volume 2, Case 16 - Martin I. Herman, M.D.

- A 4-month old male infant is brought to the emergency department by a fire & rescue squad after responding to a 911 call for respiratory distress. He was sucking on a pacifier when his caretakers noticed that he had sucked the pacifier into his mouth. A home health nurse was present & unsuccessfully attempted to retrieve the pacifier using a blind finger sweep. 911 was called.

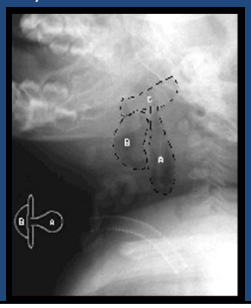
Sweeping the Airway for a Foreign Object

Volume 2, Case 16 - Martin I. Herman, M.D.

- At the scene, paramedics found the infant with a tracheostomy & a home ventilator (former 28-week twin with a stormy neonatal course). Ventilation through the tracheostomy was continued with a self inflating bag.

Sweeping the Airway for a Foreign Object

Volume 2, Case 16 - Martin I. Herman, M.D.



Teaching Points

Volume 2, Case 16 - Martin I. Herman, M.D.

- Blind finger sweeps may push aspirated material further into the airways & should not be done
- If the infant did not have a tracheostomy, this could have caused grave injury

Severe Chronic Lung Dx: BPD

Volume 3, Case 2 - Loren G. Yamamoto, M.D., MPH

- This is a 15-year old male with a history of severe chronic lung disease & bronchopulmonary dysplasia since birth. He was premature, & since then has required multiple hospitalizations for acute exacerbations of his chronic lung disease.

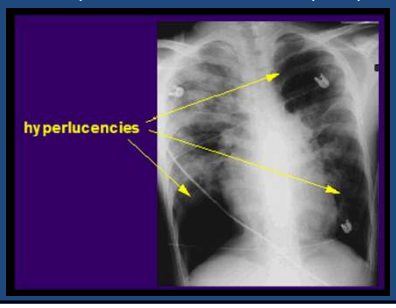
Severe Chronic Lung Dx: BPD

Volume 3, Case 2 - Loren G. Yamamoto, M.D., MPH

- Exam: VS T 38.4 (oral), P 110, R 40, BP 120/70. Oxygen saturation 75% on room air. On oxygen by mask, his oxygen saturation increases to 90%. He is in severe respiratory distress. His color is pale & cyanotic. Lungs rhonchi, wheezing, & diminished aeration throughout. Moderately severe retractions. Perfusion good. Capillary refill time 2 seconds.

Severe Chronic Lung Dx: BPD

Volume 3, Case 2 - Loren G. Yamamoto, M.D., MPH



Teaching Points

Volume 3, Case 2 - Loren G. Yamamoto, M.D., MPH

- The chronic stage of BPD resembles COPD in clinical signs & radiographic appearance
- Respiratory therapists may encounter many patients with residual disease from the perinatal period, including bronchopulmonary dysplasia (BPD)

Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.

- A 14-year old boy is brought into the Emergency Department just after midnight after having woken from sleep approximately ten minutes ago because of severe back pain & abdominal pain radiating into his throat. The pain is also described as "pressure" pain.
- Exam: VS T 35.8 C, P 86, R 32, BP 110/74, O_2 saturation 100% on room air

Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.

- Weight approximately 70 kg. He is obviously writhing in intense pain. Heart regular without murmurs. Lungs sounds are clear on auscultation with equal breath sounds bilaterally.
- Peripheral pulses are normal & equal bilaterally. Skin is warm & dry. Abdominal exam is also unremarkable with good bowel sounds, & no palpable masses or costovertebral tenderness.

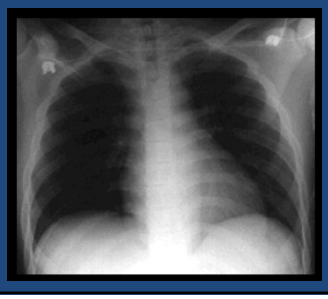
Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.

- At this point, the father settles down enough to be able to give you more of a coherent history. He relates to you that he had another son who had died at about 12 years of age from an aortic dissection & subsequent rupture.

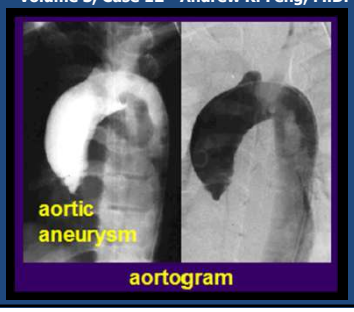
Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.



Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.



Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.

- The mainstay of medical treatment revolves around controlling blood pressure (systolic & pulse pressure). Antihypertensives should be instituted immediately if the blood pressure is high, or as soon as possible once the pressure is stable & the diagnosis is confirmed. The combination of sodium nitroprusside & propranolol is most commonly used. Labetolol can also be used as monotherapy or in place of propranolol.

Severe Acute Chest Pain in an Adolescent

Volume 3, Case 12 - Andrew K. Feng, M.D.

- Surgical intervention should be started emergently in aortic dissection if pericardial tamponade is suspected, if there are any signs of shock, or if the dissection is progressing. Outcome remains relatively poor, but is improving with a current mortality rate of 5 - 30%.

Teaching Points

Volume 3, Case 12 - Andrew K. Feng, M.D.

- Dissecting aortic aneurysm presents with severe chest pain
- Diagnosis achieved by radiography, angiography, transesophageal echocardiography
- Aortic aneurysm associates with Marfan's syndrome. Tall people, with long fingers (Abraham Lincoln?).

Severe Acute Chest Pain in a Tall Slender Teenager

Volume 3, Case 13 - Loren G. Yamamoto, M.D., MPH

- A 15-year old male presents to the E.D. with a one hour history of pain in his chest & back occurring after lifting his mother. He describes the pain as knife like & non radiating. His pain worsens with deep inspiration. His pain is currently less severe than at onset. He has a past history of chest pain episodes, usually at night while sleeping in bed.

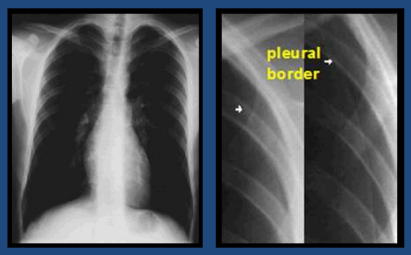
Severe Acute Chest Pain in a Tall Slender Teenager

Volume 3, Case 13 - Loren G. Yamamoto, M.D., MPH

- He is tall & thin. Heart regular, no murmurs. Lungs clear, but diminished breath sounds bilaterally. Peripheral pulses are full. Color & perfusion are good. Hands significant for long thin fingers (arachnodactyly). Suggesting Marfan's Syndrome.

Severe Acute Chest Pain in a Tall Slender Teenager

Volume 3, Case 13 - Loren G. Yamamoto, M.D., MPH



Teaching Points

Volume 3, Case 13 - Loren G. Yamamoto, M.D., MPH

- Spontaneous pneumothorax also associates with tall, slender young male, resembling aortic aneurysm
- Weak area of lung ruptured by increased intrathoracic pressure, e.g. Valsalva maneuver
- Small pneumothorax (< 20%) requires no thoracostomy

Near Drowning

Volume 5, Case 15 - Meri-Mika Morisada, M.D.

- This is a 5-year old boy who almost drowned at the beach. He got into deep water & was struggling to stay afloat. His aunt noticed that he was in trouble & managed to pull him to shore. Lifeguards administered CPR briefly, & then oxygen after he began breathing spontaneously.
- Exam: VS T 36.5, P 120, R 45, BP 130/50, oxygen saturation while on supplemental oxygen (exact FiO_2 not known) & continuous positive airway pressure was 98%.

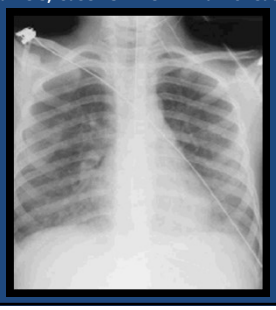
Near Drowning

Volume 5, Case 15 - Meri-Mika Morisada, M.D.

- He was crying & active. Head without signs of trauma. Eyes normal. Pupils equal & reactive. Neck supple. Heart regular. Lungs spontaneous respirations with bilateral wheezing & crackles (rales). Good air exchange. Initial ABG: pH 7.11, pCO_2 27, pO_2 140, bicarb 9.

Near Drowning

Volume 5, Case 15 - Meri-Mika Morisada, M.D.



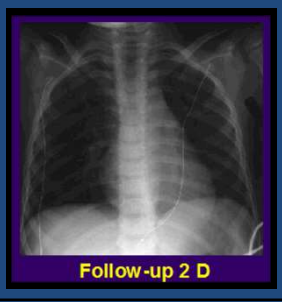
Near Drowning

Volume 5, Case 15 - Meri-Mika Morisada, M.D.

- He was treated with sodium bicarbonate for metabolic acidosis, aerosolized albuterol for wheezing & furosemide for pulmonary edema. The CXR shows small patchy basilar pulmonary infiltrates. He improves clinically & the chest radiograph is repeated two days later.

Near Drowning

Volume 5, Case 15 - Meri-Mika Morisada, M.D.



Teaching Points

Volume 5, Case 15 - Meri-Mika Morisada, M.D.

- Near-drowning victims may appear healthy immediately following the incident, then develop acute lung injury hours later, so hospitalization is mandatory
- Near-drowning victims may develop hypoxic-ischemic encephalopathy with elevated intracranial pressure

TB in the ED

Volume 4, Case 6 - Craig T. Nakamura, M.D.

- This is a three-year old Korean male who presents to the emergency department with respiratory distress. Ten days ago, he had developed a cough, rhinorrhea, sore throat, & temperature of 39.4 degrees. The cough, rhinorrhea, & sore throat resolved after a three day period. However, he continued to spike fevers. Three days ago, he was seen by his primary care physician. A PPD was placed. He was then started on oral cefuroxime.

TB in the ED

Volume 4, Case 6 - Craig T. Nakamura, M.D.

- He was previously exposed to a grandaunt who was treated for tuberculosis in Korea & a grandfather with a chronic cough within the household. He has had a decreased oral intake & a two kilogram weight loss over the previous two weeks.
- Exam: VS T 39.2, P 148, RR 68, BP 104/69. Oxygen saturation 90% on room air (100% on 5 liters O_2 by nasal cannula). He is alert with moderate respiratory distress. HEENT normal. No lymphadenopathy. Neck supple. Heart regular without murmurs. Moderately severe chest retractions noted. Breath sounds are decreased on the right. There is good aeration over the left lung fields. No wheezing, rhonchi, or rales.

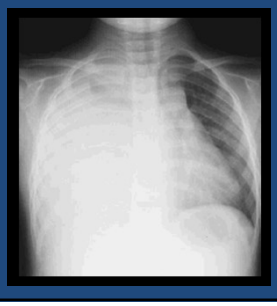
TB in the ED

Volume 4, Case 6 - Craig T. Nakamura, M.D.

- There is dullness to percussion over the right base. Abdomen soft, flat, bowel sounds active, without tenderness. Extremities significant for a positive PPD.
- Laboratory studies: CBC WBC 9.2 with 41% lymphs, 43% segs, 14% monos, 1% eos, 1% basos. Hgb 12.6, hct 37.2. Chemistry panel is normal.

TB in the ED

Volume 4, Case 6 - Craig T. Nakamura, M.D.



TB in the ED

Volume 4, Case 6 - Craig T. Nakamura, M.D.

- A PA view is shown here. His chest radiograph demonstrates a complete opacification of the right hemithorax with a shift of the mediastinal structures to the left. This patient presents with primary tuberculosis (TB) & a pleural effusion.

Teaching Points

Volume 4, Case 6 - Craig T. Nakamura, M.D.

- All caregivers can be exposed to TB in the emergency room, even from pediatric patients
- Pediatric patients may contract TB from family members, including extended family

Membranous Croup

Volume 5, Case 20 - Loren G. Yamamoto, M.D., MPH

- This is a 2-1/2 year old male who presents to an acute care clinic with a chief complaint of coughing & fever. He began coughing three days ago. His cough is now sounding worse. It sounds harsh & on further inquiry, it sounds like a barking seal. He was noted to be warm yesterday, but his temperature was not measured.

Membranous Croup

Volume 5, Case 20 - Loren G. Yamamoto, M.D., MPH

- His past history is largely negative, but his immunization status is incomplete. He immigrated from Asia two weeks ago. He is known to have been immunized, at least partially, against typhoid & polio. He had a negative TB skin test at 12 months of age. He probably has not received any MMR or DPT immunizations.

Membranous Croup

Volume 5, Case 20 - Loren G. Yamamoto, M.D., MPH

- Exam: T 38.3 (rectal), P 100, R 24, BP 109/73, oxygen saturation 95 - 99% on room air. He is alert, but is noted to be drooling. He has stridor at rest with mild retractions. An occasional croupy cough is noted. He does not appear to be toxic. Head normocephalic. Eyes clear & moist. No pallor. Nose clear mucus. Oral mucosa pink & moist.

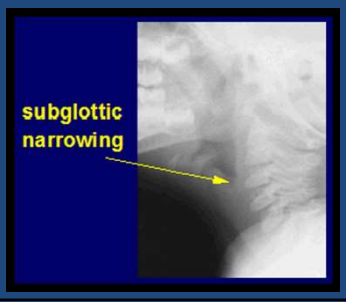
Membranous Croup

Volume 5, Case 20 - Loren G. Yamamoto, M.D., MPH

- Thick yellow & white exudates are noted on the tonsils, the uvula, & the posterior pharynx. The epiglottis is not visualized. Neck supple, with several 1 cm nodes.
- Heart regular, no murmurs or gallops. Lungs with inspiratory stridor at rest. Aeration is good. No wheezes or crackles. Abdomen negative. Normal genitalia. Color, perfusion, pulses, & turgor are good. Strength & movement good. Sensation intact. He is able to ambulate.

Membranous Croup

Volume 5, Case 20 - Loren G. Yamamoto, M.D., MPH



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- Because of his lack of DPT immunization, diphtheria is suspected. He is hospitalized in an intensive care unit. He is treated with IV penicillin & diphtheria anti-toxin. A cardiac work-up is negative. During hospitalization, his stridor worsens & he requires intubation. During intubation, his larynx & epiglottis are noted to be edematous. Following intubation, his condition improves. He is eventually extubated & is subsequently discharged in good condition. Throat cultures for diphtheria are positive.

Teaching Points

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- Although diphtheria immunization exists, some are never immunized
  - Vaccines given at specific ages
  - Immigration
  - Religion
  - Other objections
- Diphtheria resembles epiglottitis

Hemoptysis Identifies an Esophageal Coin

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- This is a two-year old Chinese female with a chief complaint of coughing up some blood. There has been a one month history of coughing & wheezing. She has seen her pediatrician three times in the past month. The child has been treated with albuterol syrup & amoxicillin. Some improvement had been noted. She is currently taking amoxicillin-clavulinic acid since her symptoms did not resolve after 10 days of amoxicillin. Up until this time, the wheezing & coughing have been mild, but tonight her parents were alarmed because she coughed up some blood for the first time.

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- Her parents are concerned about tuberculosis since an elderly relative suffered from this in Hong Kong. Prior to this, there was no history of wheezing or prolonged respiratory illness. There is no family history of wheezing.
- Examination: VS T 37.7R, P 130, R 44, BP 95/60, oxygen saturation on room air 99%. She is active & alert in no acute distress. She does not appear toxic or irritable.

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- Eyes normal. Ears normal. Oral mucosa moist. Normal pharynx & tonsils. No hemorrhaging in the mouth noted. Neck supple. No adenopathy. Heart regular without murmurs. Lungs good aeration, mild wheezing. No retractions.
- She is coughing occasionally, but the cough does not sound moist. She does not expectorate any secretions while being examined. Abdomen benign. Good color & perfusion. No bruising or petechiae noted.

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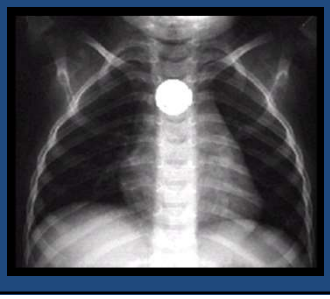

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- The child is taken to the operating room where the coin is removed under general anesthesia. At the time of removal, some hemorrhaging within the esophagus is noted. This was followed by extensive hemorrhaging & hypovolemic shock refractory to fluid & blood resuscitation.
- Before a vascular team could be called in, the child arrested & could not be resuscitated. Post-mortem studies identified an esophageal perforation overlying an ulcerating aortic perforation.

Teaching Points

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- Objects in the esophagus can obstruct the trachea, causing coughing, wheezing, stridor, etc.
- Objects in esophagus can also cause vascular injury & hemorrhage

Summary & Review

- Congenital defects may not appear for months to years after birth
  - Heart disease
  - Emphysema
  - Diaphragmatic hernia
- Beware of localized wheeze - it's often aspiration
- Suspected aspiration indicates bronchoscopy

Summary & Review

- Heart disease frequently presents with respiratory signs & symptoms & patients may present with a history of asthma
- Sequelae to premature birth, such as bronchopulmonary dysplasia, are encountered in the emergency room
- Chest pain in a tall, slender young male is consistent with aortic aneurysm & spontaneous pneumothorax

Summary & Review

- Near drowning victims require hospitalization to monitor for complications like ALI & HIE
- We are exposed to tuberculosis in the ER, even from pediatric patients
- Despite vaccinations, many infectious diseases persist because of failure to vaccinate
- Objects that are swallowed may lodge in the esophagus & present as aspiration by obstructing the trachea