The Children's Hospital at Montefiore

Complicated Pneumonia/Parapneumonic Effusion Pathway

Note: These guidelines apply to immunocompetent with community acquired pneumonia with effusion.

Diagnosis of pneumonia and parapneumonic effusion on chest x-ray

Small effusion: <1/4 thorax opacified on upright chest x-ray

Antibiotics only:
First line: ampicillin
Beta-lactam allergy: clindamycin or Levofloxacin. Consider azithromycin if at risk for complicated atypical pneumonia.

Good Clinical Response?

YES → Continue Antibiotics

NO → If not responding within 24-48 hours or worsening (fever, hypoxemia, respiratory distress, ill-appearing): reassess effusion with ultrasound. Go to moderate to large effusion pathway.

LABS:
CBC, CRP and blood culture

Moderate to large effusion:
> 1/4 thorax opacified on upright chest x-ray; and/or respiratory compromise.

Laboratory testing on pleural fluid:
Gram stain and bacterial culture. WBC with differential. pH, LDH, glucose and protein. If patient produces sputum, also send sputum for bacterial culture.

Chest Ultrasound

Not loculated, "simple"
Antibiotic recommendations:
First line: ceftriaxone +/- clindamycin Beta-lactam allergy: clindamycin and levofloxacin.

<1/2 thorax opacified on upright chest x-ray → Good Clinical Response?

>1/2 thorax opacified on upright chest x-ray → Call PICU for chest tube insertion and drainage. Consult ID and Pulmonary → 10.5 Fr chest tube → Transfer to floor if clinically stable

Loculated, "complicated"
Antibiotic recommendations:
First line: ceftriaxone and clindamycin
Beta-lactam allergy: clindamycin and levofloxacin.
Consider ceftriaxone and vancomycin OR ceftriaxone and linezolid if critically ill or in the presence of cavitary or necrotizing pneumonia.

Consult pediatric surgery and PICU for chest tube insertion fibrinolytic therapy (vs VATS) Consult ID and pulmonary

10.5 Fr chest tube with 3 doses of tPA 4mg tPA/40mL saline x 3 with 1 hour dwell 24 hours apart first dose in PICU.

Transfer to floor after first dose of TPA if clinically stable

Management of chest tube on Inpatient Floor- pediatric surgery

Good Clinical Response?

YES → Good response, draining well. Monitor with chest x-ray at 48 hrs. Chest tube can be removed if no air leak and drainage <1ml/kg/48hrs

NO → Persistent or progressive symptoms (hypoxemia, worsening respiratory distress, ill-appearing): Repeat US. If reaccumulation of fluid or loculation, go to complicated effusion pathway.

Good Clinical Response?

YES → Good response, draining well. Monitor with chest x-ray at 48 hrs. Chest tube can be removed if no air leak and drainage <1ml/kg/48hrs

NO → Not draining well. Persistence of moderate to large effusion and ongoing respiratory compromise after 48 hours.

Ultrasound/Chest CT

Persistent loculated effusion: VATS with debridement or open chest debridement with decortication.

Parenchymal disease only: continue IV antibiotics.

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