

Spontaneous Pneumothorax Care Guideline

Overall Care Guideline: **GRADE A**

Inclusion Criteria:

- Primary spontaneous pneumothorax
- Children 10 yr and older

Exclusion Criteria:

- Trauma, iatrogenic pneumothorax
- Secondary spontaneous, pneumothorax (due to underlying pulmonary disease, i.e Cystic fibrosis, asthma, connective tissue disorders)
- Empyema
- Unstable patient requiring PICU care

Assessment

- Respiratory status, O2 saturation, vital signs
- History and Physical
- CXR: 1 view upright
- Admit to Pediatric Service with AM/Daytime/ Morning Surgical Consult

Small pneumothorax (20% or less)

- PRN Oxygen for desaturations
 - * If desatting may need chest tube placed
- Repeat CXR in 12 hours
- Stat CXR for acute change in respiratory status
- Surgery team to discuss option of primary VATS with patient/family
- If resolves or is decreased, ok to d/c if meets criteria and family declines primary VATS
- If worsening on CXR, or does not meet d/c criteria - NPO after midnight for possible VATS

Large Pneumothorax

- Chest tube or pigtail insertion in ED or PICU with sedation
- Place chest tube to 20cm continuous suction
- CXR after chest tube placement and PRN acute change in respiratory status
- If CXR with no improvement, troubleshoot chest tube
- NPO after midnight for primary VATS

Worsening Pneumothorax

Surgical Intervention

- VATS, blebectomy, pleurectomy/pleurodesis (mechanical and/or chemical and chest tube placement)

Post-Op Care

- Maintain chest tube to 20cm suction until air leak resolves or for minimum 48 hours
- Utilize portable suction to ambulate
- Incentive spirometry
- Pain management
- Perform CXR prior to placing to water seal
- Repeat CXR 24 hours after placing to water seal if no air leak
- If stable, may remove chest tube

Discharge Criteria

- Off supplemental oxygen with stable vital signs
- Ambulating with pain well controlled
- Tolerating a regular diet
- Discharge education completed including return precautions
- Follow up with PMD if no surgical intervention needed
- For patients treated with VATS, chest tube or pigtail insertion:
 - * Monitor patient for 4-6 hours post-pull
 - * If stable without signs or symptoms, may discharge home
 - * Post-pull CXR only if symptomatic or at the attending Surgeon's discretion
 - * If post-pull CXR stable, may discharge home
 - * If post-pull CXR with worsened or recurrent pneumothorax, intervene as Surgeon indications
- Follow up with Surgeon in 2-3 weeks if post-op

Recommendations / Considerations

- Signs and symptoms of pneumothorax: tachypnea, hypoxia, shortness of breath, chest pain/ discomfort
- CT scan not routinely indicated, but may be ordered based on family/ patient/surgeon preference
- VATs for other indications i.e.: Empyema – use Empyema Care Guideline
- For post-surgical air leak > 5 days, may need to consider Heimlich valve or return to OR
 - * If Heimlich valve placed, repeat CXR the next day
 - * May discharge home if pneumothorax stable or smaller
 - * Weekly CXRs and follow up with Surgeon
- Evaluate if concerned for possible Marfan Syndrome

Discharge Instructions / Follow Up Recommendations

- No PE, contact sports, airplane travel, high altitude, swimming or breath-holding activities for 6 weeks after pneumothorax has resolved
- Leave chest tube dressing in place x 3 days after removal. It is normal to have some clear pink/yellowish drainage for 1-2 days after chest tube removal
- Once chest tube dressing is removed, may bathe normally. If site is still slightly open, cover with a band-air until scabbed over
- Return to CHOC ED with any signs or symptoms of recurrent pneumothorax

Patient Education

- Cerner – Pneumothorax Patient/Family Education

Reassess the appropriateness of Care Guidelines as condition changes and 24 hrs after admission. This guideline is a tool to aid clinical decision making. It is not a standard of care. The physician should deviate from the guideline when clinical judgment so indicates.

References

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