corticosteroids for certain inflammatory conditions; however, caution is warranted when using corticosteroids in infectious processes due to potential immunosuppressive effects. Surgical intervention may be necessary in cases where abscesses do not respond adequately to medical therapy or if they are large enough to cause significant symptoms or complications. Regular follow-up is essential to monitor treatment response and adjust management plans accordingly; repeat imaging may be required to assess resolution of the cavity or detect any complications arising during treatment.

Conclusion

Cough associated with pulmonary cavitary syndromes is a significant symptom that reflects underlying lung pathology and warrants careful evaluation and management. A comprehensive understanding of its mechanisms, causes, and clinical implications enables healthcare providers to implement timely and appropriate interventions. An interdisciplinary approach involving pulmonologists, infectious disease specialists, and radiologists is often necessary to optimize patient outcomes. Early recognition and intervention are key components in preventing complications and improving the quality of life for affected individuals. By addressing both the cough and its underlying causes effectively, clinicians can significantly enhance patient care and recovery outcomes.

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УДК 616.2-07-08

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ADDITIONAL RESPIRATORY MURMURS: DIAGNOSIS, CAUSES AND CLINICAL SIGNIFICANCE

Introduction

Respiratory murmurs are abnormal sounds heard during the auscultation of the lungs, produced by airflow through the airways. These sounds can provide critical information about the condition of the respiratory system. Respiratory murmurs are classified as adventitious (additional) breath sounds, which include wheezing, crackles, rhonchi, and stridor. They can indicate various respiratory conditions such as asthma, pneumonia, chronic obstructive pulmonary disease (COPD), or upper airway obstruction. Diagnosing these murmurs is crucial in clinical practice as they help healthcare providers identify respiratory conditions early, guide treatment decisions, and monitor disease progression. Recognizing and differentiating these murmurs, like the high-pitched whistling of wheezing, the crackling sound of rales, or the low-pitched rhonchi, is essential for improving patient outcomes and preventing complications.

Goal

Overview of additional respiratory murmurs

Material and methods of research

Analysis of literary sources data on additional respiratory murmurs

The results of research and their discussion

Types of Additional Respiratory Murmurs

Additional respiratory murmurs are abnormal lung sounds that offer valuable diagnostic information about various respiratory conditions. Wheezing, a high-pitched, musical sound, is typically heard during expiration, though it may also occur during inspiration in severe cases. It is caused by the narrowing or obstruction of the lower airways, commonly seen in asthma and COPD, where inflammation and airway constriction limit airflow. Crackles, or rales, are discontinuous popping sounds heard mainly during inspiration, resulting from the sudden opening of closed airways and alveoli, often due to fluid accumulation or fibrosis. These are commonly associated with pneumonia, pulmonary edema, and interstitial lung diseases. Rhonchi, low-pitched, snoring-like sounds heard mostly during expiration, occur when air passes through narrowed or obstructed airways, such as in chronic bronchitis and cystic fibrosis, where excessive mucus production causes airway obstruction. Stridor, a harsh, high-pitched sound heard during inspiration, indicates an upper airway obstruction, often caused by conditions like laryngomalacia, foreign body aspiration, or croup. Each of these murmurs helps to pinpoint underlying respiratory issues and guides clinical decision-making.

Causes of Additional Respiratory Murmurs

Additional respiratory murmurs can indicate various underlying conditions, primarily linked to airway obstruction, inflammation, or fluid in the lungs. Obstructive airway diseases like asthma and Chronic Obstructive Pulmonary Disease (COPD) are key contributors; asthma narrows the airways due to inflammation, causing characteristic wheezing, while COPD results in abnormal lung sounds from mucus buildup and bronchial narrowing. Respiratory infections, such as pneumonia and chronic bronchitis, also lead to murmurs, with pneumonia causing crackles from fluid in the alveoli and chronic bronchitis producing wheezing and rhonchi from bronchial inflammation and increased mucus. Heart failure contributes to abnormal sounds through pulmonary edema, leading to crackles, especially at the lung bases. Additionally, foreign body aspiration creates high-pitched stridor or wheezing as airflow is obstructed, necessitating immediate medical attention.

Diagnosis of Additional Respiratory Murmurs

The diagnosis of additional respiratory murmurs primarily relies on thorough auscultation, a fundamental clinical skill where healthcare providers listen to breath sounds to detect abnormalities in the lungs. Auscultation is crucial because it enables clinicians to identify characteristic murmurs such as wheezing, crackles, rhonchi, and stridor, each of which can point to specific underlying respiratory or systemic conditions. During auscultation, a stethoscope is used to listen to the chest, typically over areas such as the upper and lower edge of lungs. Changes in breath sounds, including their pitch, intensity, and timing, can provide valuable insights into the condition affecting the patient's respiratory system. Wheezing, for example, is often associated with asthma or COPD, while crackles may indicate pneumonia or heart failure. Rhonchi are typically linked to bronchitis or other obstructive diseases. Additionally, stridor is a hallmark of upper airway obstruction.

Auscultation alone may not fully diagnose respiratory conditions, and additional diagnostic tools are often necessary. Chest X-rays help identify lung conditions like pneumonia, pulmonary edema, or tumors, while CT scans offer detailed views for complex

issues like interstitial lung disease or emphysema. Spirometry is essential for diagnosing airway obstruction in conditions like asthma or COPD.

A thorough medical history, physical exam, and understanding of symptoms such as cough, difficulty breathing, or blood in the sputum are key for accurate diagnosis. For instance, wheezing and a smoking history may indicate COPD, while sudden-onset shortness of breath with crackles could suggest pulmonary edema. Differentiating conditions like asthma and COPD can be aided by spirometry, and chest X-rays can help distinguish between pneumonia and pulmonary edema. Stridor, indicating upper airway obstruction, requires further tests to rule out conditions like laryngomalacia or foreign body aspiration.

Clinical Significance

The presence of respiratory murmurs plays a crucial role in clinical decision-making, offering valuable insights into the patient's condition and guiding the approach to treatment. Respiratory murmurs, such as wheezing, crackles, rhonchi, and stridor, serve as early indicators of underlying respiratory or systemic issues. Their detection can significantly influence the direction of clinical assessment and prompt the initiation of appropriate diagnostic tests. For example, the identification of wheezing during auscultation could raise suspicion for asthma or COPD, leading to further investigations like spirometry to assess lung function. On the other hand, the presence of crackles may suggest pneumonia or pulmonary edema, which requires a more urgent evaluation through chest X-ray and possibly blood tests. Thus, the early identification of these murmurs helps establish a differential diagnosis and ensures timely intervention. Treatment strategies for respiratory murmurs depend on the type detected. Wheezing in conditions like asthma or COPD may prompt the use of bronchodilators to open airways, while crackles in pulmonary edema require diuretics to reduce fluid buildup. Antibiotics or antivirals are prescribed for pneumonia, and stridor from upper airway obstruction may need emergency interventions like intubation or surgery.

Delayed diagnosis of respiratory murmurs can have serious consequences. Missed murmurs, such as wheezing in asthma or crackles in pulmonary edema, can lead to worsened symptoms and complications like respiratory failure. Early detection and prompt treatment are crucial for improving patient outcomes and preventing severe consequences.

Conclusions

In conclusion, additional respiratory murmurs, including wheezing, crackles, rhonchi, and stridor, serve as critical diagnostic clues in clinical practice. Identifying and interpreting these murmurs can significantly aid in the diagnosis of a wide range of respiratory and systemic conditions, from asthma and COPD to pneumonia and pulmonary edema. Each type of murmur provides distinct characteristics that help clinicians narrow down potential causes, guiding further diagnostic workup and appropriate treatment strategies. Whether they indicate obstructive airway diseases, infections, or other underlying pathologies, recognizing the presence of these murmurs allows clinicians to take immediate and targeted action.

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