

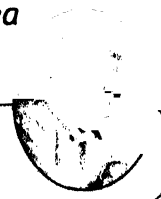
Pneumothorax

Abstract: Tension pneumothorax must be identified and treated immediately. Consider spontaneous pneumothorax as a cause for acute chest pain and dyspnoea in young smokers and patients with COPD.

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CLASSIFICATION

PRIMARY SPONTANEOUS PNEUMOTHORAX

- ♦ More than 90% of the patients are smokers.
- ♦ Occurs most frequently in men aged 20 - 40 years.
- ♦ The patients are often tall and thin.

SECONDARY PNEUMOTHORAX

- ♦ A complication of a pulmonary disease.
- ♦ The condition is often severe, even life-threatening, because pulmonary function is already affected by pulmonary disease.

TRAUMATIC PNEUMOTHORAX

- ♦ Iatrogenic or other aetiology

TENSION PNEUMOTHORAX

- ♦ A one-way valve is formed in the pleural cavity. The intrathoracic conditions change rapidly and ventilation is suddenly impaired.
- ♦ Usually seen in trauma patients and in connection with mechanical ventilation and resuscitation.
- ♦ Urgent treatment is essential.

CLINICAL FEATURES

SYMPTOMS

- ♦ Chest pain and dyspnoea are the main symptoms.
 - o The onset is rapid.
 - o The symptoms are exacerbated by breathing and physical exertion.
 - o The pain radiates to the ipsilateral shoulder.
- ♦ Cough irritation

CLINICAL SIGNS

- ♦ The clinical findings can be normal in a small pneumothorax.

- ♦ Suppressed respiratory sounds, impaired chest mobility and hyperresonant percussion sounds are often observed.
- ♦ Tachycardia, cyanosis and hypotension can be observed in tension pneumothorax.
- ♦ Subcutaneous emphysema may be present (palpable crepitus on pressing the skin).
- ♦ Signs of injury (haematoma, crepitus from a broken rib etc.) may be visible on the chest.

DIAGNOSIS

- ♦ A chest X-ray is necessary to confirm the diagnosis.
 - o A small pneumothorax may be difficult to detect. An X-ray taken during expiration may be helpful.
 - o A large emphysematous bulla may also resemble pneumothorax.

MANAGEMENT

CONSERVATIVE TREATMENT

- ♦ Conservative treatment (follow-up by chest radiograph every 1 - 3 days) is feasible in spontaneous pneumothorax if the following conditions are fulfilled:
 - o The patient is otherwise healthy.
 - o The patient does not have dyspnoea, the air-filled space is less than half of pleural cavity (the maximum width is less than 3 cm) and it does not become larger during follow-up.
- ♦ The pneumothorax should decrease in size in 3 - 4 days and disappear in two weeks at the latest.
- ♦ The follow-up can be performed in family practice. The patient should be asked to

contact immediately if symptoms worsen.

- If conservative treatment is carried out in hospital, oxygen therapy may hasten the resorption of air from the pleural cavity. (The nitrogen content of pulmonary capillary blood decreases, resulting in as much as 10 fold increase in the gradient necessary for resorption).

ACTIVE TREATMENT

- Tension pneumothorax is always an indication for immediate treatment. Thoracocentesis is indicated in a trauma victim or resuscitated patient with difficulty in breathing and signs suggesting tension pneumothorax even if a confirmatory chest radiograph cannot be obtained. Any needle (eg a large vein cannula) can be used.
- Active treatment (drainage or aspiration) is indicated in other types of pneumothorax if one of the following conditions is fulfilled:

- o The lung is markedly or completely collapsed.
- o The patient has a chronic pulmonary disease.
- o The patient has significant dyspnoea (eg a previously healthy patient has dyspnoea on slight exercise such as walking).
- If an air leak continues despite the suction, the leak should be treated surgically, now-a-days usually endoscopically. Open thoracotomy is rarely needed.
- After treatment the patient should avoid physical exercise for 2 - 4 weeks and travelling by air for 2 weeks.

PROGNOSIS

- Both primary and secondary pneumothorax tend to recur in 50% of patients.
- Surgical treatment should be considered after the second episode at the latest.

Pranayam

Abstract: Pranayama (Prana and Ayama) is the development and control of life force. It is the 4th stage in the 8 stage Yoga discipline. It is a form of breathing exercise, very important in yoga. It goes along with the asanas or exercise.

"The voluntary interruption of the movement of breathing in and out is pranayama." (Yoga Darshana 2, 49.)

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Breath is the life force that sustains life. Nobody can survive more than a few minutes without air. When the breath stops, life ends. Normal breathing uses only a fraction of our potential respiratory capacity. Most of us have a tendency to restrict our breathing when we are frightened, anxious or feeling overwhelmed. It is not "natural" to restrict one's breathing at such times, but for most of us it is a default habit - performing an action without needing to pay careful attention to what we are doing; soon we

can perform certain habits without seeming to think at all. For us, restricting our breathing has become a habit that we do so "well" that we do not even notice when and how we do it.

By controlling these vital energies, not only the mind is rapidly brought under control, it is of immense help to patients suffering from both obstructive airway disease (Asthma, COPD) and restrictive air way disease.

The forefathers of Yoga developed a special system- '*Pranayama*' to increase, develop and