Reasons for collapsed lung: Pneumothorax. Symptoms, causes and treatment of Pneumothorax

Lungs are lined by a thin membrane called pleura. There are two types of pleura, one lining is firmly attached to the surface of the lungs and other lining is attached firmly to the inside of the chest wall. There is very small amount of fluid between these two layers, called pleural fluid, which is normally present in healthy lungs and provides lubrication as lungs move during breathing and avoid friction.

When there is free air in the pleural space, it is called pneumothorax. Because air compresses the lung, it collapses or becomes small, and patients develop various symptoms.

Types of pneumothorax:

1. **Primary pneumothorax:**
   Primary pneumothorax is when there is no underlying lung disease apparently. Sudden air leaks from inside the lungs to pleural space causes lung to collapse. It tends to happen in tall young individuals.
2. **Secondary pneumothorax:**
   It develops in patients with known lung disease like emphysema/COPD/pulmonary fibrosis. It usually happens in elderly patients.
3. **Traumatic pneumothorax:**
   It happens in case of chest trauma or caused by medical procedures.
4. **Tension pneumothorax:**
   It is a large pneumothorax associated with low blood pressure and collapse; patients may develop cardiac arrest if left untreated

Symptoms and signs:
The symptoms of pneumothorax depend how big it is and how quickly it has developed.

- Sudden sharp chest pain on the side of pneumothorax
- Breathlessness
- Dizziness or collapse
- Cardiac arrest in case of tension pneumothorax

On examination, patients with pneumothorax may have raised pulse rate, increased breathing rate, low blood pressure, engorged neck veins, poor chest expansion on side of pneumothorax. Breath sounds may be absent on the side of pneumothorax.

Tension pneumothorax:
When whole lung collapses, patients can be very symptomatic. Blood returning from lower body can reduced significantly due to raised pressure in the chest, causing low blood pressure. Patients may collapse and may develop cardiac arrest. It is a medical emergency.

Prevalence:
This disorder is more common in men than women. Young adults are more at risk of developing primary pneumothorax whilst elderly patients are more at risk of developing secondary pneumothorax.

Diagnosis:
Tension pneumothorax is a clinical diagnosis and needs immediate release of air by inserting a needle between ribs.

Chest X-ray is needed to diagnose pneumothorax if suspected. Doctor who is trained to do chest ultrasound can also pick up a pneumothorax.

CT scan may be acquired in complex pneumothorax and to assess lungs for any underlying disease.

Treatment:
The treatment of tension pneumothorax is performed by urgent needle decompression. It is done by inserting a large bore need through the front ribs. A gush of air confirms the diagnosis and provides immediate relief.

Patients with mild to moderate pneumothorax who are not very short of breath may not need any intervention and just observed. If pneumothorax does not get worse, they may not need chest drain.

Patients with large pneumothorax or who are very symptomatic need insertion of chest drain which is a small tube inserted through the ribs into the pleural space. It removes the free air and patients' symptoms improve significantly. The tube may need to be there for 1-3 days most of the times and patient requires hospitalization during this period.

Recurrence:
There is small chance of recurrence in primary pneumothorax and large change in secondary pneumothorax. All patients with secondary pneumothorax would need pleurodesis as are the patients with recurrent primary pneumothorax.

Australian Polyclinic,
CCA Phase 5 DHA, Lahore
0311 057 3333

Dr G Sarwar Chaudhry
MBBS (King Edward Medical College)
Fellow Royal Australasian College of Physicians (FRACP Australia)
Fellow American College of Chest Physicians (FCCP)
Conjoint Lecturer, University of Newcastle, NSW, Australia

Consultant Pulmonologist and Sleep Physician
Consultant General Physician
www.australianpolyclinic.com