

Pneumothorax Under Pressure

JUNE 2021



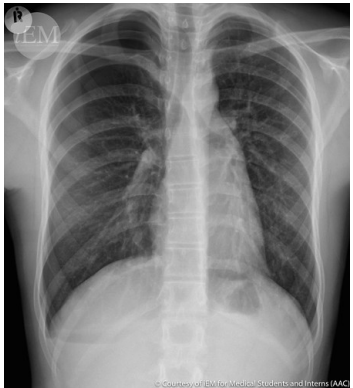
What is
pneumothorax?

A pneumothorax is a collapsed lung. A pneumothorax occurs when air leaks into the space between your lung and chest wall. This air pushes on the outside of your lung and makes it collapse.



Pneumothorax can be a complete lung collapse or a collapse of only a portion of the lung.

Pneumothorax in Hyperbaric



- Pneumothorax is an absolute contraindication to hyperbaric oxygenation (HBO). During the decompression, at the end of the hyperbaric session, the increase in gas volume related to decreasing the pressure in the chamber can induce tension pneumothorax.
- Remembering Boyles Law which states that pressure decreases the volume of air-filled spaces will increase; therefore, a patient with a pneumothorax will experience symptoms during decompression of the chamber.
- The risk can be minimized through proper assessment of the patient chest and breath sounds . Also, a clear chest X-Ray prior to the start of HBO treatment.

What are
signs and
symptoms?

- Stabbing chest pain
- Tracheal shift
- Sudden shortness of breath (SOB)
- Asymmetric chest movements
- Increase respiratory distress during decompression



PROCEDURE

What to do if pneumothorax is suspected:

- If patient exhibits symptoms of pneumothorax:
- **Stop** decompression
- **Notify Hyperbaric physician STAT**
- If Physician determines patient does in fact have tension pneumothorax ,prepare for needle thoracostomy or emergent transfer to the emergency room.
- Per physician order, bring patient up at a rate of 1 psi or, as order per physician.
- Following the initial stabilization , transfer the patient for further work up and management.



Question 1

Patients with a pneumothorax may experience what symptoms during decompression?

Answer to
Question 1

Patients with a pneumothorax may experience what symptoms during decompression?

Answer: SOB, stabbing chest pain, shift in the position of the trachea, asymmetric chest movement, and respiratory distress.

Question 2

During the decompression, the pneumothorax expands.



Answer to
Question 2

During the decompression,
the pneumothorax expands.



Question 3

A patient suffering a pneumothorax in the Hyperbaric Chamber is not serious ?



Answer to
Question 3

A patient suffering a
pneumothorax in the Hyperbaric
Chamber is not serious ?



Question 4

The patient may exhibit signs of cyanosis in the chamber.



Answer to
Question 4

The patient may exhibit signs
of cyanosis in the chamber.



Question 5

What gas law explains the mechanism of action resulting in pneumothorax in HBOT?

Answer to
Question 5

What gas law explains the mechanism of action resulting in pneumothorax in HBOT?

BOYLES LAW

References

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