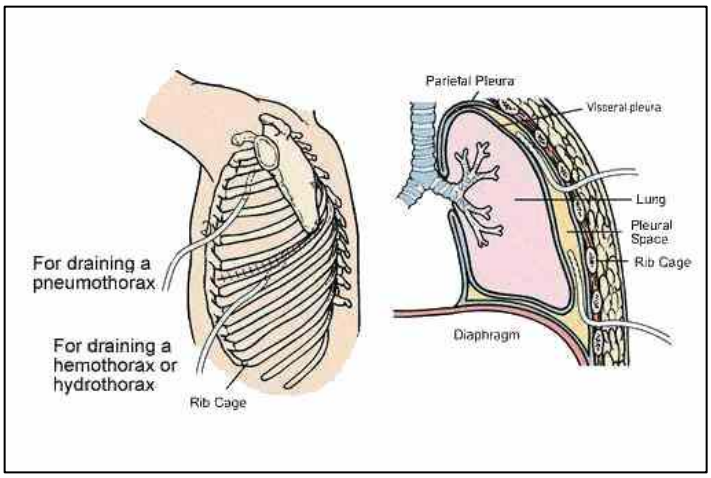
Tube Thoracostomy

Anesthetic Pearls: The Anesthetic Management of Tube Thoracostomy on Water Seal

The purpose of chest tubes is to evacuate thoracic air (obliterate the pleural space following pneumothorax or thoracotomy which normally accomplishes lung re-expansion) and drainage of collections of accumulated blood or fluids.



Pleural drainage systems must include airtight seals to maintain an intrapleural vacuum (-3 to -5 mmHg). The simplest form of chest drainage is using the water seal system, which allows for free egression of air and fluid from the intrapleural space without allowing additional air or fluid to enter the thoracic space.

The Pleur-Evac™ is one of the most widely used systems that is a contained / compact chest drainage apparatus which may be attached to a vacuum line.

Chest Tube Management:

1. The tubes should **not** be clamped and doing so may result in tension pneumothorax.
2. Fluid level in water seal apparatus must be maintained at all times.
3. Pleur-Evac™ systems must be kept below the level of the patient to prevent siphoning of water into the thoracic cavity.
4. To drain large amounts of fluid or for those patients with large air leaks, continuous negative pressure must be applied (the amount of suction must exceed intrapleural vacuum developed by patient during inspiration).
5. Search for a leak site and more suction needs to be applied if reversal of flow occurs in the tubing during inspiration or if intermittent bubbling occurs while patient is on water seal.