Circulatory shock

MANAGING OBSTRUCTIVE SHOCK

There are four main classes of shock

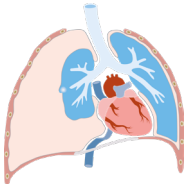
- Hypovolemic
- Distributive
- Cardiogenic
- **Obstructive**

Obstructive shock occurs when blood flow is impeded by a mechanical obstruction to the blood vessels or the heart itself.

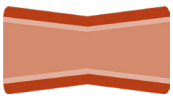
Causes

Obstructive shock most commonly results from

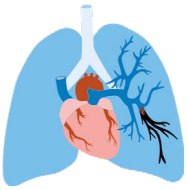
Cardiac tamponade



Tension pneumothorax



Vascular compression (e.g., IVC compression in abdomen)

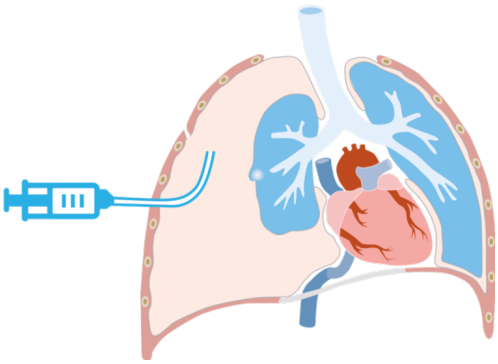


Intravascular obstruction (e.g., pulmonary embolism)

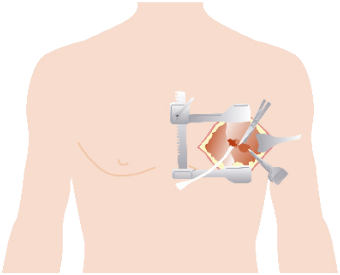
Treatment

Relief of compression is therapeutic, but increasing intravascular volume may provide temporary support.

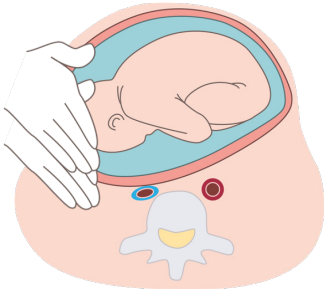
If chest thoracostomy is not immediately available to decompress a tension pneumothorax, finger thoracostomy or needle decompression may be the best option. These are best performed in the midaxillary line in the fourth or fifth intercostal space (similar to tube thoracostomy)—not in the midclavicular line as historically taught—because the chest wall is thinner laterally and there are fewer vascular structures to injure.



Cardiac tamponade may require drainage to restore hemodynamics. This may be performed percutaneously for chronic large pericardial effusions, but in the setting of acute trauma, this should be achieved through emergency thoracotomy, because blood will rapidly reaccumulate or clot.



Relief of abdominal or retroperitoneal compartment syndrome may require surgical intervention, but positioning with the left side down may ameliorate IVC compression, especially in the case of pregnancy. Manual left lateral uterine displacement may be another option (e.g., with ongoing chest compressions).



Relief of intravascular obstruction (e.g., pulmonary embolism) may be amenable to anticoagulation, thrombolysis, or surgical or percutaneous intervention, depending on local resources and guidelines. Mechanical circulatory support may be considered as supportive care for some cases.