Chest Trauma

Introduction: Most chest injuries occur alone or in combination with other injuries. In 05% of cases, it is one of the most important causes of death.

Anatomy: The chest is a cartilaginous bone scaffold in which the main organs of respiration and blood circulation (heart, lungs, etc.) are located. Its shape is conical. The posterior part is limited to the dorsal and anterior vertebrae by the ribs.

There are twelve pairs of ribs.

Injuries to the chest can include damage to the lungs and heart or the large blood vessels inside.

Types of chest lesions:

Penetrating injuries: such as a knife or a bullet

Slow or impenetrable injuries (blunt): following punches, crushing injuries after an accident

Surgery is necessary if the patient has an ulcer penetrating the heart and large arteries - esophagus or tracheobronchial tree.

Chest Injuries: Rib fractures are the most common injury, and if they are associated with rib indentations, internal organs may also be damaged, including lung tissue in the form of pneumothorax-hemothorax, lung contusion, cardiac tamponade, and emphysema. Rib fracture is not an acute problem if it is not accompanied by a complication, and the goal of treatment is to relieve pain by local support, analgesia, and blockage of the intercostal nerves.

Diagnosis:

- Examine and check out the airway
- Examine lungs and ribs completely
- Chest radiography
- ABG and Pulse oximeter
- Take ECG
- Examine subcutaneous emphysema
- Chest eczema
- Examine the thorax for movement-symmetry and ulceration and chest displacement

Treatment of penetrating lung injuries:

The goal of treatment is to maintain cardiopulmonary function.

If an open wound has formed, it should be bandaged and one side of the wound should be open to allow air to escape. If the penetrating object is inside the lung, do not remove it.

- If penetrating injuries are below the fifth intercostal space, there is a possibility of damage to the abdominal organs.
It is important to check the peripheral pulses and shock symptoms in patients.

Get a venous line with a large needle to give colloidal fluids or blood according to the patient's condition to treat shock.

Check the airway and the need for intubation and use of mechanical ventilation.

Install NGT to prevent aspiration and reduce gastrointestinal pressure.

Most of these patients need a chest tube implant to re-expand their lungs rapidly.

Uses of chest tube in chest injuries include: hemothrax- pneumothorax and pulmonary hemorrhage.

**Tube chest care:**

- The connections and the entrance of the pipes should be strong so that air does not leak.
- The pipe connector should be 2 cm under the water.
- If the secretions of the chest pipe are more than 150 cm³/h, the doctor must be informed.
- Chest tube is graduated and the amount of secretions is measured and recorded accurately.
- Chest tube must be active. We can observe the fluid displacement in connectors or bottle, when the patient coughs or breathes deeply.
- Chest tube dressing should be applied in two branches and transversely along the ribs so that it does not open during inhalation and exhalation.
- The chest tube should be clamped while walking, moving the patient, and dressing.
- The chest tube bottle should be below body level so that fluid does not return to the lungs.
- If the level of fluid in chest tube increases, its efficiency decreases and it should be displaced.
- Encouraging the patient to cough, deep breathing prevents atelectasis.
- When removing the tube, ask the patient to perform the Valsalva maneuver, then clamp the chest tube and remove it quickly and bandage it tightly with Vaseline gauze to prevent entering of air into the lungs.

If you have any questions or ambiguities, call the following numbers:

023-33437824, Surgery ward of Kosar Hospital