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When all age groups worldwide are taken into account, traumas are responsible for approximately 10% of deaths, making them the third most common cause of death after cardiovascular diseases and cancer. However, based on the Turkish data, traumas stand out as the sixth most common cause of death in all age groups (1-3). Of trauma-related deaths, nearly 15% occur in connection with thoracic trauma. In thoracic trauma-related deaths, nearly one-third of the cases pass away at the scene, mainly due to cardiac and major vascular injuries. While blunt thoracic traumas, such as traffic accidents, falling from a height, or receiving a blow, constitute approximately 70% of thoracic traumas, penetrating thoracic traumas, such as penetrating stab wounds, or gunshot wounds, lead to approximately 30% of such traumas (1, 4, 5).

The thoracic wall receives the initial trauma-related impact in thoracic injuries. The thoracic wall consists of skin, muscular structures, and bone structures. One of the thoracic wall's fundamental duties is defending intrathoracic structures against the effects of the trauma in the event of a trauma. Particularly in blunt thoracic traumas, the thoracic wall gets affected by the trauma, and it diminishes the effects that the energy of the trauma imposes over intrathoracic structures during high-energy traumas. Thoracic wall injuries can be observed in 16% of traumas, in an isolated form (5, 6).

### THORACIC WALL CONTUSION AND HEMATOMA

In chest wall contusion and hematoma, there is bleeding into the interstitial tissue with the effect of blunt trauma by preserving the skin's integrity. A contusion occurs upon blood's extravasation into the tissue, caused by the trauma-related injuries in capillaries. In hematoma, however, blood is extravasated. Thoracic wall contusions and hematomas usually go into remission and heal automatically. The recovery process is accelerated by a treatment that includes cold therapy and non-steroidal analgesics. Nevertheless, hematomas might occur in some instances, which would necessitate drainage or even lead to a requirement of blood transfusion. Treatment methods to be administered in such cases include the drainage of blood, the hemorrhaging vessel's ligation, or the hemorrhaging vessel's embolization (5, 7).

### RIB FRACTURES

The most common traumatic pathology due to blunt traumas in the chest wall is rib fractures that occur in approximately 35-40% of thoracic traumas. While rib fractures in older adults might occur even in simple traumas due to the low elasticity of the thoracic wall, the rib fractures in children indicate that the trauma is acute. The

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clavicle. Many subcutaneous emphysema cases heal through oxygen treatment or recover automatically by the closure of the underlying pathology that causes the emphysema (5, 18).

### TRAUMATIC ASPHYXIA

Traumatic asphyxia or Perthes disease is a condition that occurs as a result of the sudden and common compression injuries of the thorax, and it frequently occurs because of getting stuck between two vehicles or between the vehicle and a hard surface in traffic accidents. It is characterized by petechia on the neck, which is caused by a sudden pressure increase or in the veins of the facial area due to the venous pressure increase, along with subconjunctival hemorrhage, cyanosis, capillary dilatation, and cerebral edema. There are four factors that cause traumatic asphyxia during a trauma, which are a deep inspiration, closed glottis, thoracoabdominal effort, and compression. Oxygen therapy and decreasing intracranial pressure are the most effective treatments. Accordingly, patients are monitored with their heads up at a 30-45-degree angle. An oxygen therapy applied via mask is usually adequate, depending on the patient's condition, although intubation or mechanical ventilation may also be needed (5, 18, 19) (Figure 2).



**Figure 2:** Ocular finding due to traumatic asphyxia in a patient exposed to blunt chest trauma in the form of compression.

### THORACIC WALL DEFECTS

Thoracic wall defects can occur due to the penetrating injuries of the thoracic wall or the injuries caused by an object stabbing the thoracic wall in acute blunt injuries. If the defect is associated with the pleural space, air starts flowing into the pleural space due to the positive atmospheric pressure, and this picture is called an open pneumothorax. If the defect in question is bigger than 2/3 of the tracheal diameter, it may lead to serious respiratory problems. If the defect is bigger than 7 seven times the tracheal diameter, it can cause sudden death. In this case, the aim of the treatment is to close the defect to ensure that ventilation continues normally. To this end, the defect is covered with a bandage and fixed to the thoracic wall from three spots, and tubal thoracostomy is applied to discharge the air in the pleural space. This procedure will ensure that the patient's normal ventilation continues until a surgical closure is applied (5, 7, 20).

In thoracic wall defects where the cutaneous integrity is preserved, lung parenchyma can herniate towards the subcutaneous tissue through the defect line. Lung herniation was defined by Roland for the very first time in 1499. Lung hernias are divided into two categories, which are congenital and acquired hernias. Acquired hernias, characterized by the frequent herniation of the weak thoracic wall after coughing, consist of spontaneous hernias by 30%. In traumatic lung hernias, however, the most prevalent causes are rib fractures and intercostal defects. Its treatment mostly includes primary closure, although various materials are used to support the defective area in wider defects (5, 21).

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