DIAGNOSIS AND TREATMENT OF POST-TRAUMATIC PNEUMONIA IN PATIENTS WITH CLOSED CHEST INJURIES.

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The author studied the results of diagnosis and treatment of 542 victims of chest injuries, among which 72 (13.2%) patients developed complications of post-traumatic pneumonia. The main causes of the development of post-traumatic pneumonia were multiple rib fractures with pleural complication, hemo-pneumothorax, lung contusion.

The development of pneumonia in victims with chest injuries worsens the general condition of patients, complicates the course of the underlying pathology.

The main preventive measures for the development of post-traumatic pneumonia in chest injury are adequate anesthesia, timely elimination of hemo-pneumothorax, lung atelectasis, a comprehensive measure to combat respiratory failure

Keywords: *Chest injury,rib fractures,hemopneumothorax,contusion of the loungs, post-traumatic pneumonia.*

RELEVANCE

Due to the increase in road injuries and the deterioration of the criminal situation in recent years, there has been a noticeable increase in the number of victims with closed chest injuries, in particular with rib fractures, which leads to a violation of the integrity of the chest, deterioration of lung ventilation and the development of post-traumatic pneumonia. According to UN statistics, over 250,000 people die in road accidents worldwide every year, and about 1 million are fatally injured [1,2,5,7,8,11,].

Chest injuries are a group of injuries that include injuries of the ribs, sternum and internal organs located in the chest cavity. Such injuries can vary greatly both in nature and severity, however, due to the potential danger to the patient's life at the initial stage, they are always considered by doctors as serious, requiring a detailed examination of the patient. [3,4,6,8,11,14].

This group of injuries is characterized by high mortality in the absence of medical care and a fairly high percentage of favorable outcomes with timely delivery of the patient to a specialized medical facility. institution. The mortality rate is 5-6%, with the majority of deaths occurring in open injuries (wounds), as well as multiple rib fractures with a ruptured lung.According to statistics, mechanical injury is the most common

(especially due to the importance of road traffic injuries: 68% of the total number of chest injuries). [13,14].

The issue of post-traumatic pneumonia is not discussed at all in a number of guidelines on breast injury, although this complication occurs in 5.8-14.5 cases [1,4,7,13].

All of the above served as the basis for my study, in which we summarized and systematized the experience of diagnosis, treatment and prevention of post-traumatic pneumonia in closed chest injury, accumulated on the basis of the surgery department of the Ferghana branch of the Republican Scientific Center for Emergency Medical Care

The aim. The aim of the study is to improve the diagnosis, prevention and treatment

of post-traumatic pneumonia in patients with chest injury.

Materials and methods of research: Based on clinical data, the incidence of post-traumatic pneumonia in chest injury with lesions of various types was studied: rib injury,hemothorax, lung contusion in 542 patients hospitalized in the department of 2nd surgery (thoracic post) in 2018-2022. The age of patients ranged from 18 to 64 years, the average age of patients was 55.6 +_ 12.2 years. 366 (67.5%) patients were male, 176 (32.5%) female. Of the 542 victims of chest injuries, 72 (13.2%) developed post-traumatic complications of pneumonia

Contusion of the lung, which occurs mainly in closed injuries. The presence of crepitating wheezes during auscultation, hypoxemia and limited chest excursion may be a manifestation of bleeding and subsequent pulmonary edema, which lead to respiratory failure. CT scans of the lungs reveal limited infiltrates that tend to merge in the first few days [12]. With combined injuries that increase the risk of developing respiratory distress syndrome, mortality can reach 24% [23]. Considering these factors, it is recommended to hospitalize patients with concomitant trauma to maintain adequate oxygenation, airway clearance and ventilation, while using a ventilator [12]. The effectiveness of prophylactic administration of antibiotics and corticosteroids in such situations has not been proven.

There are a huge number of factors contributing to the development of infectious, purulent-septic complications from the respiratory system In the group of victims who suffered an isolated severe chest injury, infectious complications were detected in 20-25% of cases [12].

Results diagnosis and treatment of patients with chest injuries .

If a lung injury is suspected, the patient must be examined by a thoracic surgeon or traumatologist. The circumstances of the injury are being clarified. During the examination, it is necessary to pay attention to the color of the skin, the presence of contusion. Due to the pain syndrome with unilateral contusion, the patient spares the injured half of the chest, supports it with his hand. Respiratory failure forces the patient

to occupy a sitting position with his legs down (orthopnea). To clarify the diagnosis, it is necessary to carry out: X-ray, computed tomography, chest ultrasound

Physical examination. Palpation determines the increase in pain when pressing on the chest or back in the projection of a bruise. It is often possible to probe the places of rib fractures. During auscultation, small- and medium-bubbly wheezes are heard in the damaged lung.

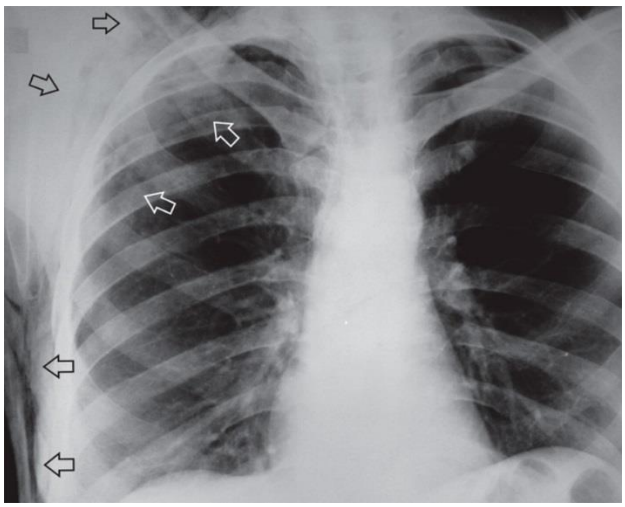
Laboratory tests. Clinical blood analysis is not informative immediately after injury. It is performed to exclude concomitant internal bleeding. Pulmonary damage may be indicated by the presence of red blood cells in the sputum analysis. The study of the gas composition of the blood makes it possible to clarify the degree of hypoxemia. Pulse oximetry is used to quickly determine blood oxygen saturation.

Radiation search methods. The areas of infiltration of lung tissue corresponding to the injury zone are determined on an X-ray 24-48 hours after the injury. Lung radiography allows to identify pneumothorax and hemothorax, damage to the bone frame and signs of post-traumatic pneumonia In severe respiratory injury, it is preferable to perform computed tomography. It helps to determine the presence of contusion,atelectasis, to differentiate injury from lung`s injury and the development of pneumonia.

Bronchial endoscopy. In the presence of hemoptysis,bronhchoscopy helps to identify the source of bleeding. Edema and hyperemia of the mucous membranes of the bronchi are indirect signs of injury to the respiratory organs. At the same time, medical rehabilitation of the bronchi is performed.

The main causes of the development of post-traumatic pneumonia are a violation of bronchial patency ,blood aspiration and the development of atelectasis; deterioration of the drainage function of the bronchi; suppression of the cough reflex due to pain, loss of consciousness with excessive accumulation of sputum and mucus in the tracheobronchial tree. Hypovolemia, acute microcirculation disorders in the small circle of blood circulation also create favorable conditions for the development of complications. A certain contribution is made by a decrease in the overall immune resistance of the body of the victims and concomitant diseases. Pneumonia in victims with chest injuries is predominantly focal in nature with localization in the lower lobes and manifests itself on the 3rd– 5th day after injury with further progression of the clinical and radiological picture.

During X-ray examination the areas of infiltration of lung tissue corresponding to the injury zone are determined on an X-ray 24-48 hours after the injury.

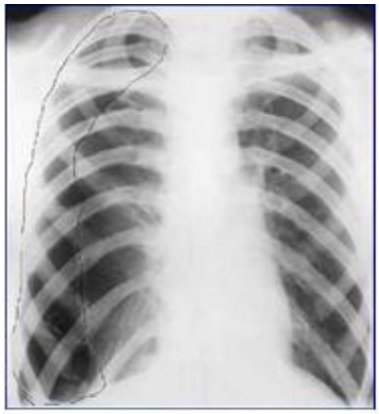


Radiograph of the patient 41 g signs of a bruised lung

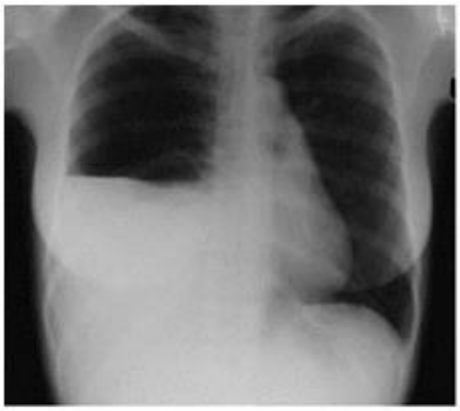
Lung radiography allows you to identify pneumothorax and hemothorax, damage to the bone frame. In case of severe respiratory injury, it is preferable to perform a CT scan. It helps to determine the presence of atelectasis

Hemopneumothorax is noted in 30% of cases of rib fractures. A large hemothorax due to damage to the intercostal artery, a small one is the result of venous bleeding more often from the intercostal vein or from the spongy tissue of the rib.

At least 400-500 ml of blood can be recorded on an X-ray taken in an upright position. On an X-ray taken in a horizontal position -1 liter or more. Hemothorax can be detected by an incident 2-4 days after injury, which indicates the need for a dynamic

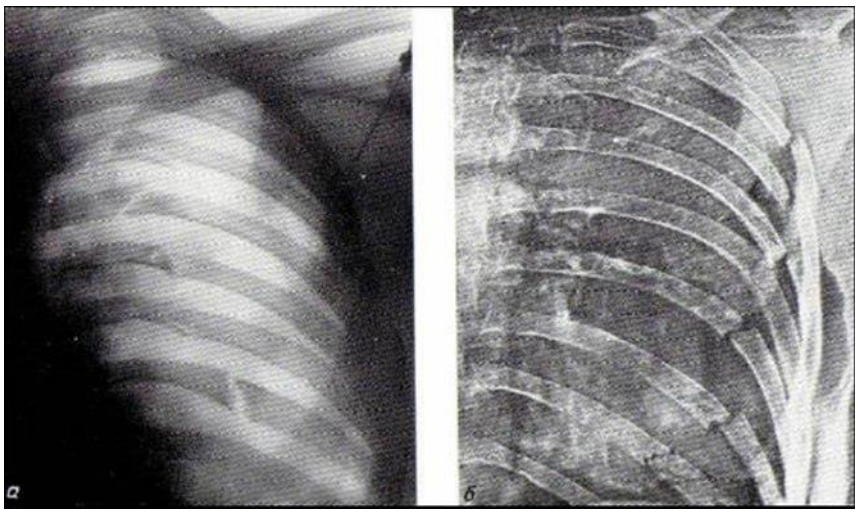


X ray of patients
Signs of pneumothorax



X ray of patients .Signs of haemotorax

Radiograph of the patient 41 g signs of lung`s contusion



Radiograph of patient A. 54 g. Multiple rib fractures

The development of pneumonia is easier to state in dynamics when, compared with the previous CT study, there is an increase in the infiltration zone, an increase in its density and uniformity. These zones are located, as a rule, in the peripheral parts of the pulmonary parenchyma and are segmental in nature.

For treatment of pneumonia, nonsteroidal anti-inflammatory drugs, immune and restorative therapy, oxygen, stimulation of the drainage function of the bronchi should be used.

A well-known set of measures is also used in the treatment of pneumonia, among which one of the central places belongs to de-escalation therapy with antibiotics. The features of the treatment of pneumonia in victims with chest injuries are: the use of antibiotics in large doses intravenously; respiratory therapy should be multicomponent and include oxygen therapy, drug-aerosol inhalations, positive pressure breathing sessions at the end of exhalation. Bronchodilators, antihistamines are used; percussion and vibration massage are possible. Bronchial obstruction, the shutdown of a significant part of the lungs from breathing with the development of blood bypass is an indication for therapeutic fibrobronchoscopy.

The fatal outcome was noted in 36 (6.6%) patients. The main cause of death was multiple bilateral rib fractures, acute respiratory failure, post-traumatic shock, mediastinal injuries: mediastinal hematoma resulting from hemorrhage.,damage to mediastinal vessels

Conclusions:

1. With closed chest injury, rib fractures, post-traumatic pneumonia, according to our data, occurs in (13.2%) of the total number of victims;

2. The main factors contributing to the development of post-traumatic pneumonia are:

-inadequate anesthesia,

- bilateral multiple rib fractures, hemopneumothorax

3. A characteristic feature of post-traumatic pneumonia is the number of floors of pathological processes occurring in the lung tissue. During the first 12 hours, venous and capillary fullness is expressed. After 12-24 hours, edema is pronounced in the lesion

4, The development of pneumonia in victims of chest injuries worsens the general condition of patients, complicates the course of the main pathology of the respiratory organs.

5, The main preventive measure for the development of post-traumatic pneumonia in case of chest injury is adequate anesthesia, timely elimination of hemo-pneumothorax, lung atelectasis, a comprehensive measure to combat respiratory failure

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