



THE USE OF MULTISPIRAL TOMOGRAPHY IN THE DIAGNOSIS OF PULMONARY EMPYEMA

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Article history:	Abstract:
<p>Received: September 11th 2022 Accepted: October 11th 2022 Published: November 17th 2022</p>	<p>Resume Diagnosis and treatment of pleural empyema remains an urgent problem in surgery. With the advent of multispiral computed tomography, the possibilities of diagnosing pathology of the chest and pleura organs have increased. The data of examination and treatment of 36 patients with pleural empyema of various etiologies who were treated in the purulent surgical department of the clinical base of the Bukhara State Institute in 2012-2021 were analyzed. The purpose of the study: to study the features of X-ray radiological data in pleural empyema.</p>

Keywords: Pleural empyema, lung spirometry, pulse oximetry, multispiral tomography study

TOPICALITY

Diagnosis and treatment of pleural empyema remains an urgent problem in surgery. Under the term "pleural empyema" or "pnothorax" it is considered to be a limited or widespread inflammation of the visceral and parietal pleura, occurring with the accumulation of pus in the pleural cavity and accompanied by signs of purulent intoxication [1].

Timely diagnosis and properly selected, differentiated, taking into account the stages of treatment of pleural empyema can reduce the patient's stay in the hospital, minimize the volume and risk of surgical intervention, reduce the duration of temporary disability, prevent disability and disability of the patient [2, 3, 4, 5, 6].

Radiography, fluoroscopy, ultrasound examination of the pleural cavity and computed tomography are the main methods for diagnosing pleural empyema. The minimum volume of fluid detected by X-ray research methods is 200 ml. In addition, radiography provides some information about the pleura and mediastinum [6, 7]. According to radiography, the chronicity of the process is characterized by encapsulation of the effusion, localization of the effusion paracostally, multiple levels of fluid, uneven contours, the presence of areas of enlightenment, thickening of the pleura, gross pleural overlays, adhesion process in the pleural cavity, the appearance of pneumofibrosis [6, 7]. When evaluating an X-ray, it is impossible to determine the nature and nature of the pleural contents. Transudate, blood, purulent and serous exudate in the pictures have the same picture.

With the advent of multispiral tomography, the possibilities of diagnosing the pathology of the chest and pleural organs have increased. In particular, it became possible to determine the density of the object under study [6,7]. When organizing the contents of the pleural cavity, its heterogeneous structure, fuzziness of contours, the presence of gas bubbles and the density in Haunsfield units are described [6, 7]. The density of the contents of the pleural cavity, according to various authors, can vary from 0 up to +60Ni [7]. A number of sources indicate that it is impossible to distinguish transudate from exudate in the pleural cavity [6, 7, 8]. However, there is evidence in the literature that pleural thickening is noted in all cases of empyema and in the vast majority of cases of parapneumonic pleurisy [6].

Purpose of the study: to study the availability of X-ray radiological data in pleural empyema.

MATERIAL AND METHODS

The data of examination and treatment of 36 patients with pleural empyema of various etiologies who were treated in the purulent surgical department of the clinical base of the Bukhara State Institute in 2012-2021 were analyzed.

All patients were distributed by sex and age according to the classification of age groups adopted at the regional seminar of the World Health Organization in Kiev in 1963. Of these, 21 (58.3%) were men and 15 (41.7%) were women between the ages of 17 and 76 (the median age was 48.42.1 years). ±

All 36 patients with pleural empyema examined were admitted to the clinic with a complicated severe form of pneumonia without COVID - 19. Of these, 22



(61.1%) were patients with purulent inflammatory lung disease in the infiltrate stage (unformed lung abscess) complicated by pleural empyema, 11 (48.9%) - patients were with pneumonia complicated by exudative pleurisy. The general diagnostic criterion was the indicator of intoxication, objective and subjective data. To accurately establish all patients underwent multispiral computed tomography examination

RESULTS AND DISCUSSIONS

When analyzing control X-ray images and CHEST MSCT, it was found that in the examined patients throughout the entire observation period after drainage of the pleural cavity, the level of exudative fluid decreased to the maximum, on average, on the 6-7th day of treatment, there was practically no discharge of exudate from the pleural cavity. In bacteriological examination from the excretion of the pleural cavity by 4-5 days of treatment, the critical level of microflora in the fluid of the pleural cavity was lower.

In a multispiral computed tomographic examination of patients, the following were revealed: And from 36 examined patients, 22 (61.1%) were patients in the stage of infiltrate of purulent inflammatory lung disease (unformed lung abscess) complicated by pleural empyema. With CT and the emptying of exudate from the pleural cavity and in the future dynamics of the study, a number of interesting points were revealed: a site of compaction of the lung tissue without clear contours was revealed, with the exception of places of contact with the interlobular pleura. On axial sections, a typical subpleural localization of the abscess, which is widely adjacent to the costal or interlobular pleura, is revealed more clearly than on radiographs. Necrotic infiltrate has soft tissue density, homogeneous structure, prosve you bronchi in it are not visible. In this case, the lumen of the corresponding lobe bronchus does not change. Often on the axial sections you can see a typical break in the segment of the tar bronchi or their branches inside the pus infiltrate. The shape of the infiltrate with its small size is rounded or oval. With an increase in size, the filtrate may take the form of an affected segment or lobe. The volume of the altered part of the lung is increased. As with X-ray tomography examination, in the case of the location of the infiltrate in the upper or middle lobe, above the interlobular pleura, the symptom of its "sagging" in the zone of the greatest necrotic changes is typical. In the pleural cavity, fluid is often detected.

Of the 36 patients examined in MSCT, the study revealed: 21 (58.3%) patients had right-sided localization of pleural empyema, 15 (41.7%) patients

had left-sided localization. In 6 (16.6%) patients, a bagged form of pleurisy was noted, of which 3 patients had encapsulated pleurisy in the projection of the middle lobe of the right lung.

In 2 cases, encapsulated pleural empyema was noted on the right, in one case a form of encapsulated empyema in the left pleural cavity was noted. It should be noted that the drainage of the pleural cavity in these patients was carried out taking into account the localization of the encapsulated pleurisy, which was determined by the result of the MSCT study.

In the treatment of patients with pleural empyema, it was primarily reduced to the effect on the underlying disease, taking into account its form and phase, the pathogenesis of pleural exudation and the nature of the effusion, as well as the general condition of the patients. As our experience shows, the most important requirement to achieve the greatest effect in pleural empyemas of any origin is the early and prolonged implementation of a set of various conservative measures and surgical interventions.

In the treatment of the bottom category of patients, we adhered to the following principles of pathogenetic treatment:

1. Drainage and emptying of the exudate of the pleural cavity and, if necessary, daily debridement of the pleural cavity.

2. Antibiotic therapy, taking into account the sensitivity of the microflora isolated from the pleural fluid.

3. When conducting empirical antibiotic therapy, we preferred antibiotics, fluoroquinolones and cephalosporins, to which the microflora is more sensitive in our region.

- 4) the use of desensitizing and anti-inflammatory drugs aimed at combating the increased permeability of the pleura and to affect the local and general manifestations of pleurisy itself.

In the vast majority of patients, treatment of empyema began with a pleural puncture. When receiving pus, we always drained the pleural cavity. Drainage was active (when using devices to create a negative pressure of 10–30 cm of water) or passive (for example, according to Büllau). To wash the pleural cavity, a solution of furacillin 1: 1000, 0.2% decoson, an aqueous solution of chlorhexidine was used.

The use of CT made it possible to assess in detail the encapsulated effusions, thickening of the pleural sheets, focal formations in the pleura.

- The average duration of conservative treatment of purulent pleurisy is 20±1.2 days.

Thus, our analysis of the results of the study of patients with pleural empyema showed that MSCT



diagnostics is more effective for accurately establishing the diagnosis and determining the localization of a purulent focus in the pleura with pleurisy of various etiologies, which contributes to effective surgical treatment by draining the affected pleural focus.

FINDINGS

1. MSCT diagnostics is more effective for accurately establishing the diagnosis and determining the localization of a purulent focus in the pleura with pleural empyema.
2. With pleural empyema, in most cases, the etiological factor is a complicated form of pneumonia.
3. Pleural empyema is more often localized 61.6% of cases of right-sided lower pleura
4. Complex etiopathogenetic treatment with the use of targeted drainage of the purulent focus of the pleura, antibiotic therapy, taking into account the sensitivity of microflora, is an effective way to treat purulent pleurisy.

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7. Influence of different concentrations of dimethylsulfoxide solution on antibiotic sensitivity of pathogenic microorganisms in experiment (In Vitro) Safoyev Bakhodir Barnoyevich¹, Yarikulov Shukhrat Shokirovich², Boltayev Timur Shavkatovich³ European Journal of Molecular & Clinical Medicine ISSN 2515-8260 Volume 07, Issue 03, 2020.
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