

Pleural diseases

Pleuritis

Pleuritis, also known as **pleurisy**, is an inflammatory disease of the pleura that often accompanies other pathological processes of the pleura, adjacent lung tissue, mediastinum or chest wall. It is most often a **serous inflammation** of the pleura.

Depending on the content of the pleural cavity, we distinguish:

- **dry pleurisy**, *pleuritis sicca* – absence of fluid in the pleural cavity,
- **wet pleurisy**, *pleuritis humida* – fluid is present in the pleural cavity and fluidothorax can form. The fluid either contains proteins (exudate) or is a plasma ultrafiltrate (transudate).

Clinical picture

Dry pleurisy

- Chest pain, restriction of respiratory movements, irritating cough, fever,
- While **listening** – friction murmur.

Wet pleurisy

- Fluid accumulates between the pleural leaves,
- The pain shoots out into the shoulder, shortness of breath, cough, fever,
- **Physical examination** – shortening of the percussion, listening is impaired, reduction of rhythm and bronchophony,
- **X-ray** – shading above the diaphragm, disappearance of the angle above the diaphragm - to confirm it, it is necessary to take a picture on the side.

Diagnosis

If we find fluid in the pleural cavity, it is necessary to search for its origin. We perform a pleural puncture, which also reduces the patient's shortness of breath and discomfort.

We will examine the fluid:

- bacteriologically,
- biochemically,
- cytologically.

It is also necessary to distinguish between transudate and exudate:

- **transudate** – is common in heart defects and in heart failure, cirrhosis, during nephrotic syndrome, peritoneal dialysis, collagenoses, pulmonary embolism...
- **exudate** – inflammation, tumors, tuberculosis, hemothorax, esophageal perforation, pancreatitis....

Puncture

The puncture is performed in the 7th intercostal space in the posterior axillary line (level with the tip of the scapula when the arm is raised).

1. after pharmacological sedation, LA and saturation monitoring,
2. we guide the needle to the upper edge of the rib,
3. after completion it is necessary to put a compression bandage.

Possible **complications** include – pneumothorax, hemothorax.

Therapy

- Is dependent on the cause,
- Puncture or drainage,
- In ATB empyema ^[1].

Mesothelioma

Malignant mesothelioma is an uncommon tumor arising from the mesothelial cells of pleura. This tumor can be found on pleura, pericardium or peritoneum. It is very often caused by asbestos exposure.

Pathology

The mesothelioma can be **macroscopically**:

- diffuse mesothelioma;
- localized mesothelioma.

Microscopically it can be:

- epithelial mesothelioma – contents mostly epithelial (cellular) component;
- fibrous mesothelioma – contents mostly fibrous spindle cell-like component;
- mixed mesothelioma – contents both of these components.

Clinical notes

Epidemiology

Mesothelioma is **uncommon**. The incidence is 2,000-3,000 new cases every year in United States (compared with lung cancer: 222,000 new cases per year in USA). Up to 80% patients suffering from the mesothelioma were exposed to asbestos at work. Average survival time is only about one year. ^[2]

Patient history

Mesothelioma can be occupational disease, because it is asbestos related disease.

- Asbestos exposure: workers in the manufacture of asbestos products, asbestos miners and millers, construction traders, power plant workers, boilermakers, shipyard workers, firefighters, even teachers and veterans. ^[3]

Mesothelioma is a late consequence of asbestos exposure. Can be found even more than 50 years after exposure!

Symptoms

- **Major symptoms** are chest pain and shortness of breath. ^[4]
- Other symptoms could be persistent cough, anemia, weight loss, fever, abdominal pain and swelling. ^[5]

Diagnostic

- physical examination, lung function tests;
- X-ray;
- CT or MRI;
- thoracoscopy and pleural biopsy;
- definitive diagnosis is based on microscopical examination of the biopsy by pathologist!

Treatment

The options are surgical **resection** of tumor or **chemotherapy** or **radiation**, or **their combination**. Unfortunately the mesothelioma is diagnosed in an advanced stage, which causes only one year average survival time. The treatment depends on patient's overall health (if the mesothelioma can be found 50 years after asbestos exposure at work, you can expect advanced age of the patient...).

Notes

Other asbestos exposure related diseases are:

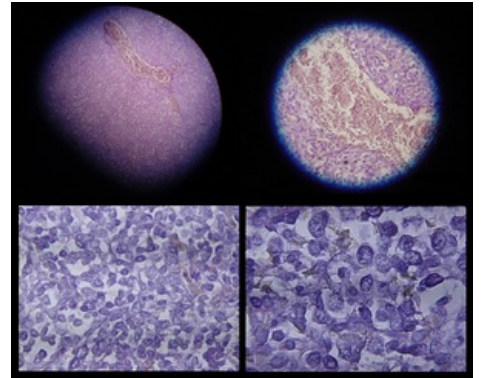
- asbestosis;
- lung cancer.

Links

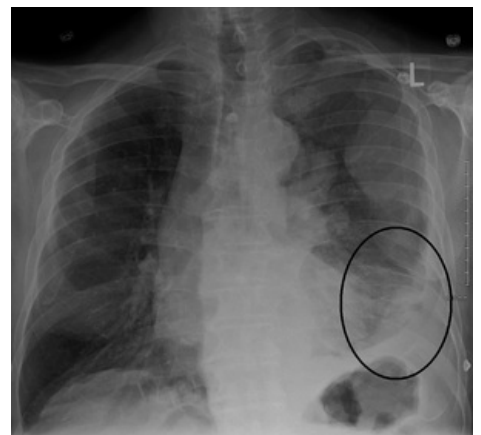
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Similar articles

- Pleura
- Inflammation



Microscopy of mesothelioma.



X-ray, mesothelioma of the left lower lung.

1. HRODEK, Otto – VAVŘINEC, Jan, et al. *Pediatric*. 1. edition. Praha : Galén, 2002. pp. 227. ISBN 80-7262-178-5.
2. American Lung Association. *Understanding Mesothelioma* [online]. The last revision 2011, [cit. 2011-07-30]. <<http://www.lungusa.org/lung-disease/mesothelioma/understanding-mesothelioma.html>>.
3. The Asbestos Disease Awareness Organization (ADAO). *What are High Risk Occupations?* [online]. The last revision 2010, [cit. 2011-07-30]. <<http://www.asbestosdiseaseawareness.org/educational-resources/exposed-to-asbestos/>>.
4. KASPER, Dennis L – FAUCI, Anthony S – LONGO, Dan L, et al. *Harrison's principles of Internal Medicine*. 16th edition. New York : McGraw-Hill Companies, Inc, 2005. 2607 pp. pp. 1567. ISBN 0-07-139140-1.
5. American Lung Association. *Mesothelioma - Symptoms, Diagnosis and Treatment* [online]. The last revision 2011, [cit. 2011-07-30]. <<http://www.lungusa.org/lung-disease/mesothelioma/symptoms-diagnosis.html>>.