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# Malignant pleural effusions

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**M**alignant pleural effusions may appear in various neoplasms, thus complicating an already serious disease. They comprise about 50% of all pleural effusions. Not infrequently they are the first clinical signs of a malignancy, accompanied by chest pain, dyspnea or cough or combinations of these symptoms.

Less than 10% of patients have no symptoms due to the effusion. Benign pleural effusions can rarely appear in an already recognized neoplastic disease due to various reasons (congestive heart failure, TB or other infections, liver cirrhosis etc.) and sometimes due to antineoplastic treatment (post irradiation mediastinitis).

The presence of a malignant pleural effusion always means an advanced neoplastic disease, either metastatic, as in most cases, or primary, such as pleural mesothelioma in almost 5% of cases. In almost half of all cases the underlying primary disease is lung cancer; breast cancer is the cause of one fifth of all malignant pleural effusions followed by ovarian and gastric cancer and malignant lymphomas. In over 10% the primary malignancy remains unknown.

The diagnosis can be achieved sometimes by repeated thoracentesis and cytological examination or pleural biopsy. The combination of both methods leads to diagnosis in almost 90% of all cases.

Treatment of malignant pleural effusions is mandatory in almost all symptomatic patients. The type and intensity as well as continuation of treatment depends on frequency and degree of reappearance of the effusion and on the severity of disease symptoms.

The general condition and life expectancy of a patient is also of great importance when making a decision to treat or not. Primary tumors also greatly influence our decision.

An initial drainage is always necessary for establishment of diagnosis, palliation of a patient and also for prognostic reasons, according to the speed and volume of reaccumulation. A symptomatic patient's severe condition is rarely a contraindication for drainage of a symptomatic patients.

Today, with the development of active chemotherapeutic regimens for most solid tumors, systemic treatment for a known primary may lead to regression of the pleural effusion, parallel to the regression of the tumor itself. This is especially true for breast cancer.

Persisting or - in spite of effective systemic treatment - recurring effusions should undergo local treatment.

Thoracentesis and thoracostomy with tube drainage fail almost

always in preventing recurrence. The instillation of the pleural cavity with a sclerosing agent after complete tube drainage has proven to be the method of choice for long lasting remissions. Primary aim is the obliteration of the pleural cavity through symphysis between two pleural laminae. The elimination of pleural space prevents the production and accumulation of new exsudate.

Some agents with anticancer effect may also act through reduction of the tumour mass, thus leading to reduced fluid production. The range of agents which are used for instillation into pleural cavity extends from radioactive substances with almost no sclerosing properties, to the talc having only sclerosing effect via a reactive pleuritis. In between is a number of agents, mostly cytotoxic drugs as bleomycin, doxorubicin, mitoxantrone, cisplatin or others such as tetracycline and corynebacterium parvum.

Although the majority of agents produce a fairly high response rate (from 60% to 80% as reported in most studies) the results are not comparable and duration of response varies; there is no active substance which can be recognized as definitely better and thus represent the "treatment of choice".

Since palliation is the main objective of this type of treatment, morbidity due to the agent used and long term remissions are primary criteria for choosing a specific agent. Cost-effectiveness of treatment may also be of great importance.

For the reduction of morbidity sterile conditions are imperative and also the prophylactic use of strong and/or systemic analgetics, and antibiotics.

Finally pleurectomy should be confined only to cases where - after repeated failure of sclerosing attempts - life expectancy and relief from symptoms outweigh morbidity and mortality risk of the method.

External irradiation has also been reported to be effective after completion of drainage.

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