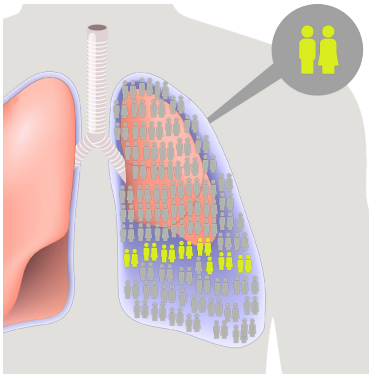
Malignant Pleural Effusion (MPE)

The pleura are thin membranes which line the lungs and chest wall. Between the pleura is the pleural cavity which contains a small amount of pleural fluid that is produced and absorbed each day. Cancer cells may spread to the pleural cavity and cause an over production of pleural fluid and decreased absorption of the fluid. This causes an abnormal amount of fluid to build-up in the pleural cavity. This is called a malignant pleural effusion or MPE.

Risk factors



Malignant pleural effusions (MPE) are a common complication for people with advanced cancer and affects up to 15% of all patients with cancer.

- Advanced **lung** cancer and **breast** cancer account for around **50–65%** of all MPE.
- **Lymphomas**, tumours of the **genitourinary tract** and **gastrointestinal tract** account for a further **25%.**
- Pleural effusions from an **unknown** primary are responsible for **7–15%** of all malignant pleural effusions.
- **Mesothelioma** is the most common type of primary pleural tumour and is associated with MPE in more than **90% of cases**.

Signs and symptoms

The majority of patients with MPE are symptomatic, with breathlessness being the most common symptom. Other symptoms include:

Dry, non-productive cough

Chest pain (usually sharp and is exacerbated by deep inspiration, coughing, and sneezing.)

Orthopnea
(inability to breathe easily when lying flat)

Assessment and immediate interventions

Take a full history, record symptoms and severity and perform a clinical examination.
Features of examination can include:

- hypoxia
- reduced air entry on the affected side
- reduced vocal fremitus and resonance
- dull percussion note
- pleural rub
  (however, typically only present in small effusions)

Initiate a medical review for all patients displaying signs and symptoms consistent with pleural effusion. Manage symptoms whilst awaiting review, diagnosis and intervention.

- Incline patients experiencing orthopnea
- Introduce strategies to improve dyspnoea
  - Non-pharmacological strategies: simple relaxation, hand-held fans, activity pacing
  - Air and oxygen and administered intranasally may provide symptomatic relief.

Investigations and diagnosis

- Imaging investigations should start with a **chest x-ray.** PA x-rays will only show an effusion of >200 mL of fluid. Effusions can be seen earlier in lateral chest-x-rays (>50ml).
- A **thoracic ultrasound** scan can estimate effusion size and is useful in thoracentesis direction, increasing success rates and reducing complications.
- **CT scans** may be performed in the investigation of undiagnosed exudative pleural effusions and can be useful in distinguishing malignant from benign pleural thickening. They are also useful in estimating size, loculation and confirmation of additional pathology e.g. tumour.

Management

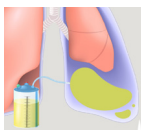
A multidisciplinary care approach is strongly recommended for malignant pleural effusions.

The management of MPE remains palliative, with median survival ranging from 3 to 12 months.

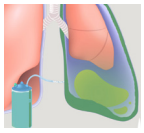
Patients who are asymptomatic may be appropriately managed with observation only.

For symptomatic patients, effective palliation of symptoms with the least morbidity is the goal of management.

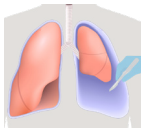
Management options for symptomatic MPE:



Drainage



Pleurodesis



Pleurectomy

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