

Pleural effusion (fluid around the lungs), common causes and management

What is Pleural effusion?

Pleural effusion is collection of fluid between the lungs and chest wall. There is a thin membrane which lines the outer surface of the lungs and inner surface of chest pain. This is a close space and there is very small amount of fluid in this space which acts as lubricant so there is no friction between lungs and chest pain.

Fluid can build up around the lungs due to variety of issues. We commonly divide pleural effusions into two categories

1. Transudative
2. Exudative

Transudative pleural effusions happen when there is more pressure in the blood vessels and fluid ooze out slowly in this space. It exceeds the normal reabsorption of fluid happening at the same time, hence the accumulation happens. Common causes of transudative effusion are heart, kidneys, or liver failure.

Exudative pleural effusions happen when there increased leakiness of blood vessels, or blocked lymphatics. Classically exudative effusions have much higher protein contents and higher cell counts.

Infections:

1. Parapneumonic effusion

It happens when there is significant pneumonia or infection in the lung tissue. Blood vessels are leaky and pour fluid out. There is no active infection in this type of fluid, though, many a time, we need to take a sample of fluid to prove that.

2. **Empyema** is collection of pus around the lungs. When parapneumonic fluid develop infection in it, it turn into infective cavity with pus in it and is called empyema. It needs drainage with either tube only or may require surgical intervention.

3. **Pleural tuberculosis** or TB is another very common cause of pleural effusion in developing countries. It may need drainage or surgery along with medication to treat TB.

Heart/kidney/liver failure:

In case of heart, kidney and liver failure, there is fluid build-up in many different parts of the body, most obvious on the legs. It is not uncommon to have some fluids around the lungs. It is usually on both sides and there are signs and symptoms suggestive of underlying organ failure. Heart failure remains one of the most common causes of pleural effusion on both sides.

Inflammatory diseases:

Few systemic inflammatory diseases like rheumatoid arthritis and systemic lupus erythematosus (SLE) can cause or present with painful pleural effusions. Detailed examination and some blood tests may be required to confirmed it.

Lung cancer or tumours:

Lung cancer remains one of the most worrisome reasons of pleural effusion. It may come up slowly and usually on one side initially. It is very important to rule out lung cancer in one sided pleural effusion, especially in high-risk person like ex-smokers.

Asbestos related effusions:

People with past exposure to asbestos may develop benign exudative pleural effusion. There is also increased risk of development of asbestos related mesothelioma which is very aggressive cancer of pleural lining.

What are the common symptoms of pleural effusions:

The common symptoms of pleural effusions are

- Chest pain
- Breathlessness
- Cough
- Hiccups
- Difficulty sleeping on one side

Very small effusion may not cause any symptoms.

What investigations are required?

All patients with suspected pleural effusion initially need chest X-ray and may need CT scan of lung afterwards. Depending upon clinical findings, some blood investigations are also requested.

If there is no obvious cause, a diagnostic sample is taken from the fluid around the chest. Using ultrasound guidance, a small need is passed between the ribs and 20-50ml fluids is aspirated which is sent to pathology for further analysis.

Drainage of fluid:

If there is significant amount of fluid causing symptoms, fluid may need to be drained out, either by a big needle under local anaesthetic or a tube is left in whilst patient is admitted to a hospital.

Definite treatment of effusion:

It depends on the cause of effusion. If it is due to infection, it gets treated and patient get cured. If it is due to cancer, patients may need chemotherapy.

If you are worried about pleural effusion, you should talk to your physician or pulmonologist regarding optimal management.

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