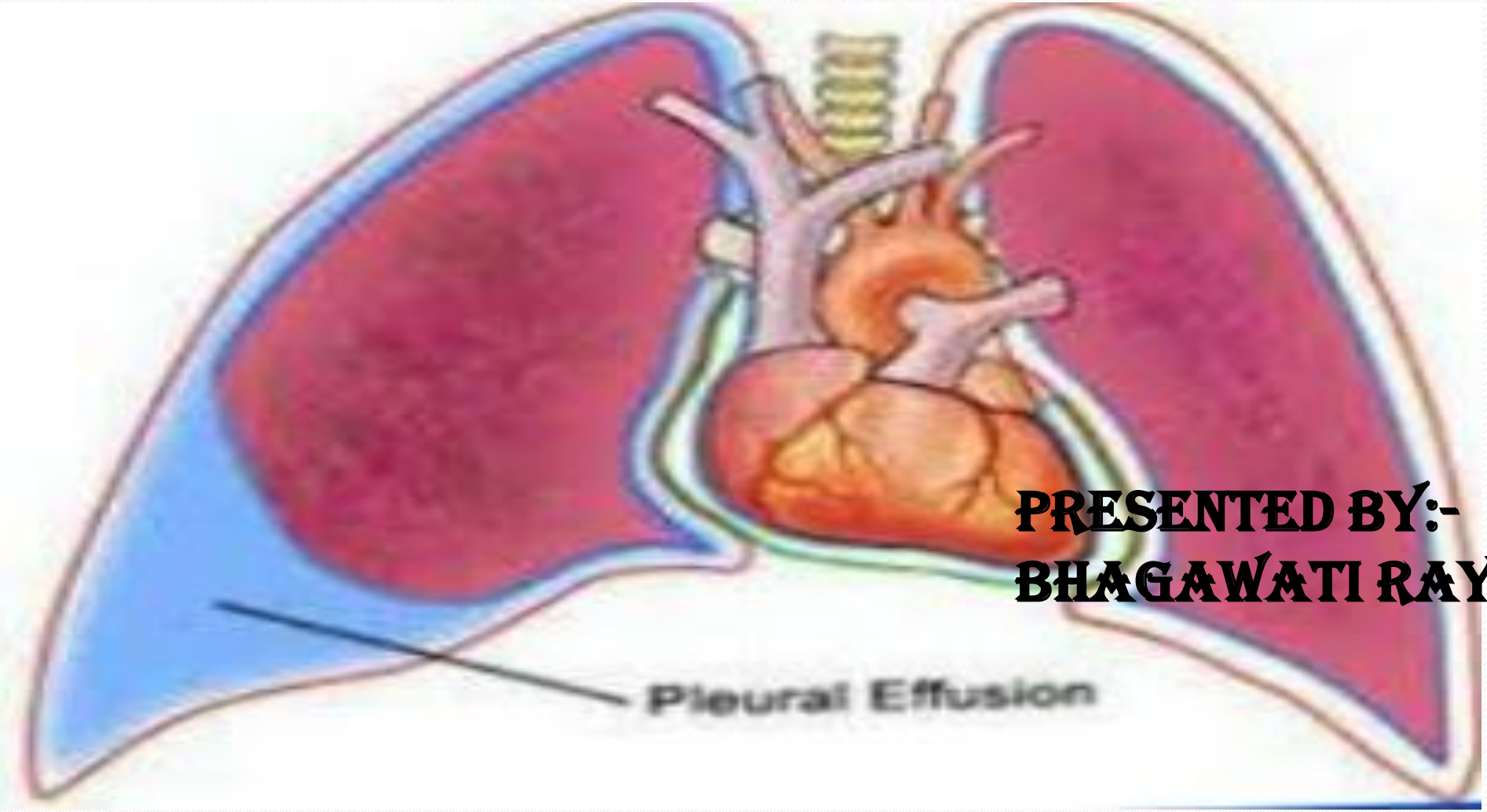
PLEURAL EFFUSION



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Introduction

- Pleural effusion, a collection of fluid in the pleural space, is rarely a primary disease process but is usually secondary to other diseases

- The pleural space normally contains only about 10-20 ml of serous fluid

Definition

- Pleural effusion is a collection of abnormal amount of fluid in the pleural space.

Classification

- Transudative effusions
- Exudative effusions

Transudative effusions

- Transudative effusions also known as hydrothoraces , occur primarily in noninflammatory conditions; is an accumulation of low-protein, low cell count fluid

Cause of transudative effusion

- Increase hydrostatic pressure found in heart failure (most common cause of pleural effusion)
- Decrease oncotic pressure (From hypoalbuminemia) found in cirrhosis of liver or renal disease.
- In this condition, fluid movement is faciliated out of the capillaries and into the pleural space

Exudative effusions

- Exudative effusions occur in an area of inflammation; is an accumulation of high-protein fluid.

- An exudative effusion results from increased capillary permeability characteristic of inflammatory reaction.

- This types of effusion occurs secondary to conditions such as pulmonary malignancies, pulmonary infections and pulmonary embolization.

Etiology

- Disseminated cancer (particularly lung and breast), lymphoma
- Pleuro-pulmonary infections (pneumonia).
- Heart failure, cirrhosis, nephrotic syndrome
- Other conditions sarcoidosis, systemic lupus erythematosus (SLE)
- Peritoneal dialysis

PATHOPHYSIOLOGY

Transudative pleural effusions:

- hydrostatic pressure , oncotic pressure

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- Unable to remain the fluid with in a intravascular space

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- Fluid shift interstitial space

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Effusion

Exudative effusions

- Invasion of microbes

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- Initiation of inflammatory reaction

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- Vasodilation, increase capillary permeability

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- leak of plasma protein decrease oncotic pressure

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fluid shift into interstitial space

Clinical Manifestations

- Usually the clinical manifestations are those caused by the **underlying disease** and **severity of effusion**

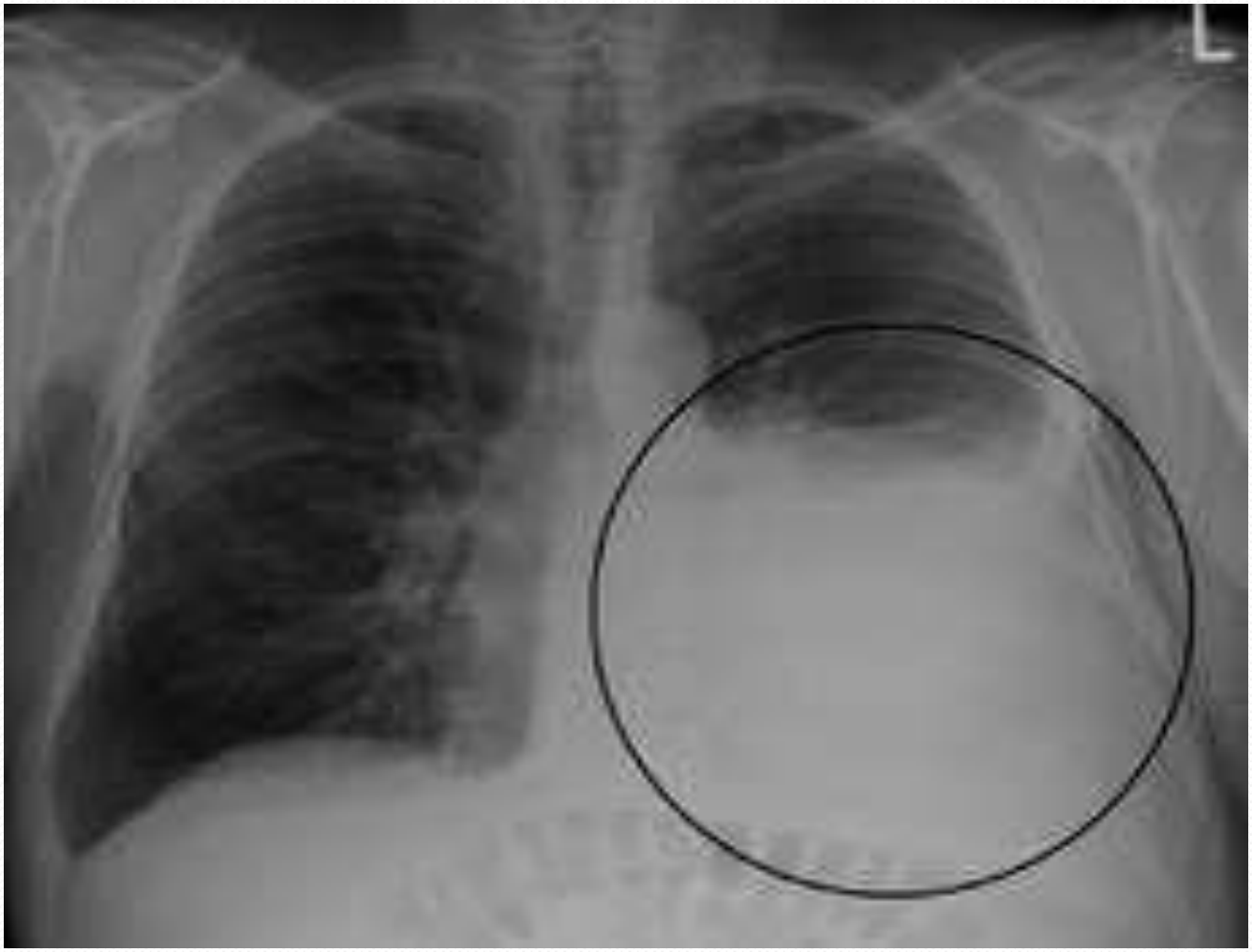
- **Pneumonia causes** fever, chills, and pleuritic chest pain,

- **malignant effusion** may result in dyspnea and coughing

- When a **small to moderate pleural effusion** is present, dyspnea may be absent or only minimal.
- Pleuritic chest pain,
- Dullness or flatness to percussion
- Decreased or absent breath sounds

Diagnostic Evaluation

- History collection
- Physical examination
- Chest X-ray or ultrasound detects presence of fluid.
- Thoracentesis biochemical, bacteriologic, and cytologic studies of pleural fluid indicates cause.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Complications

- Large effusion could lead to respiratory failure

Management

- The objectives of treatment are to **discover the underlying cause, to prevent reaccumulation of fluid**, and to **relieve discomfort, dyspnea, and respiratory compromise**

General

- Treatment is aimed at underlying cause (heart disease, infection).
- Thoracentesis is done to remove fluid, collect a specimen, and relieve dyspnea

For Malignant Effusions

- Chest tube drainage, radiation, chemotherapy, surgical pleurectomy, pleuroperitoneal shunt, or pleurodesis

Nursing Interventions

- Institute treatments to resolve the underlying cause as ordered.
- Assist with thoracentesis ifindicated
- Maintain chest drainage as needed
- Provide care after pleurodesis.
  - Monitor for excessive pain from the sclerosing agent, which may cause hypoventilation.
  - Administer prescribed analgesic.
  - Assist patient undergoing instillation of intrapleural lidocaine if pain relief is not forthcoming.
  - Administer oxygen as indicated by dyspnea and hypoxemia.
  - Observe patient's breathing pattern, oxygen saturation

THANK YOU !!!