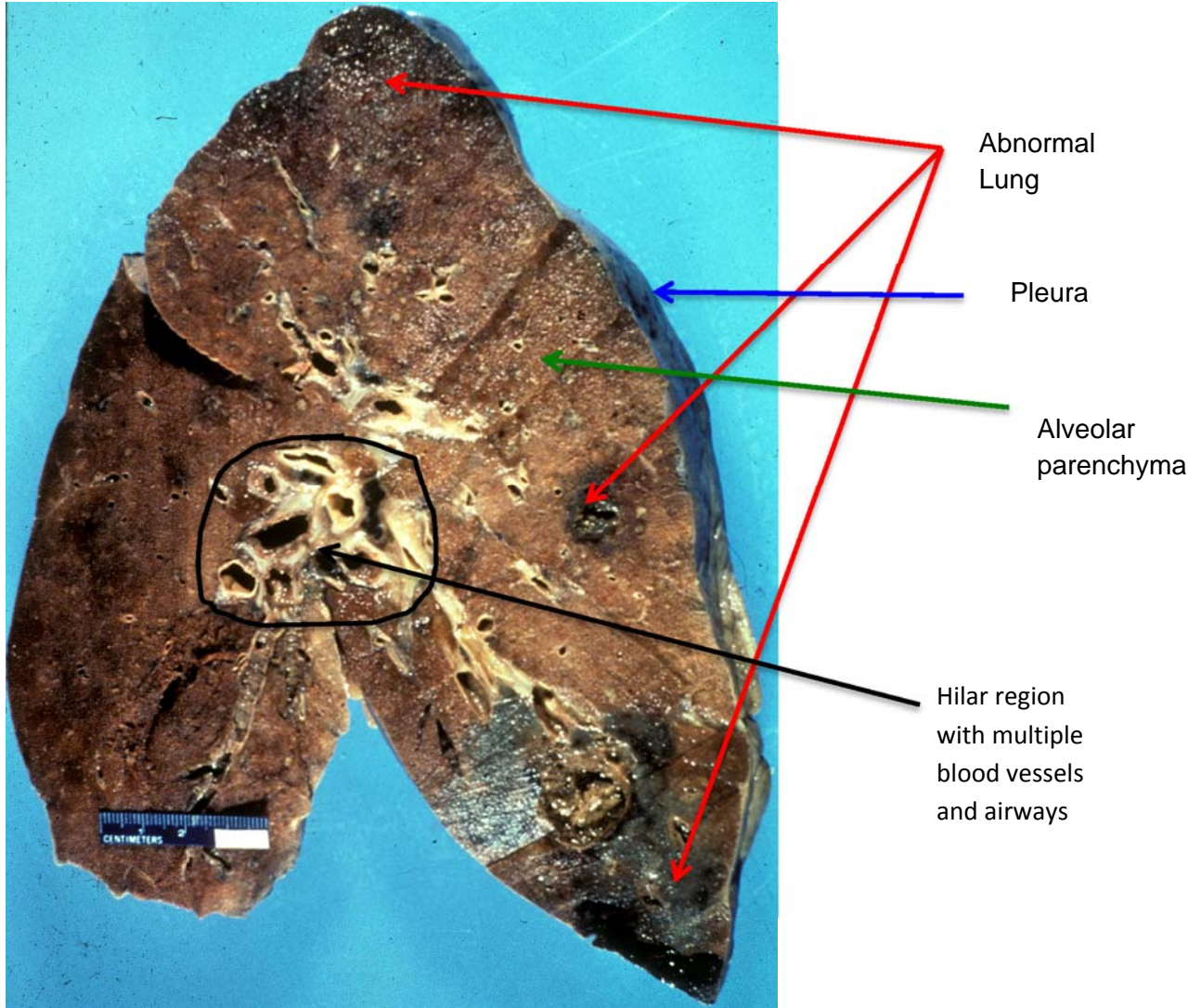


### **Small Group Session I Case 3**

A 60 year old woman with a history of hypertension, coronary artery disease and diabetes mellitus developed pain in her knees. She was found to have severe degenerative changes in the knee joints, and was advised to have knee replacement surgery. The surgery was uneventful. However, upon her first attempt at ambulation, she complained of the acute onset of sharp pleuritic chest pain. A chest x-ray showed an area of density in the periphery of the right lower lobe. Further studies were performed, following which the patient was placed on appropriate therapy.

#### **Instructions:**

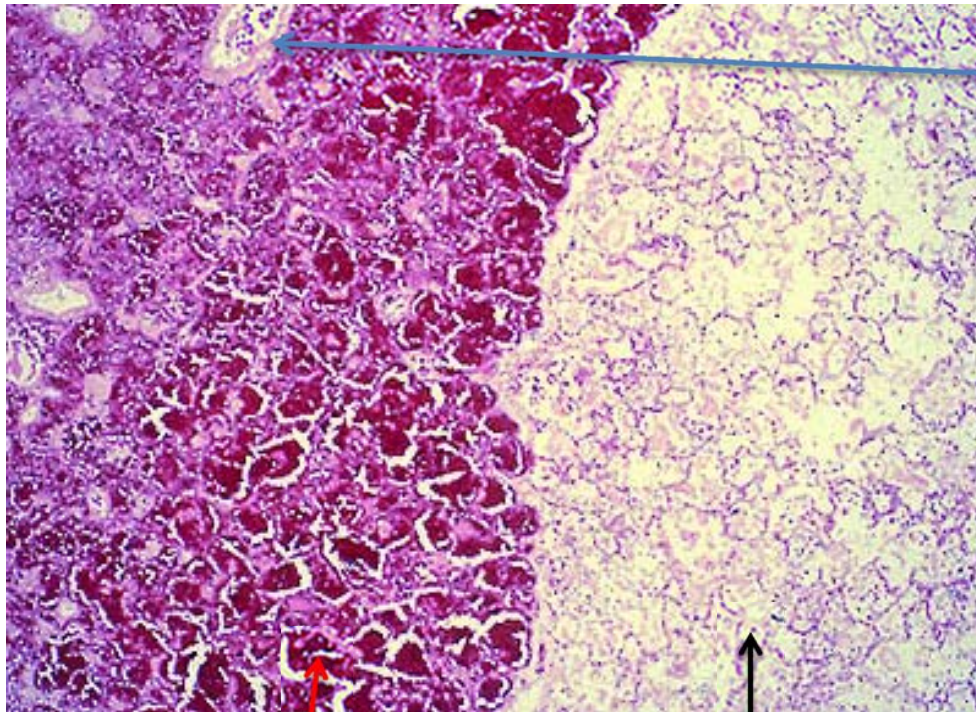
You are provided with an image of a gross specimen of lung that contains changes that might be expected in this patient. The microscopic images show corresponding microscopic changes. Answer the following questions. Refer to Robbins for verification of your responses.



**Task 1.** Examine the image of the gross specimen of lung. Notice the alveolar parenchyma (green arrow), pleura (blue arrow), airways and blood vessels (hilar region with many of these structures is circled).

**Task 2.** Describe the abnormal areas of the lung (3 red arrows). Specify the location, color, relative size and consistency of these areas.

**Low magnification of interface between abnormal and normal lung**

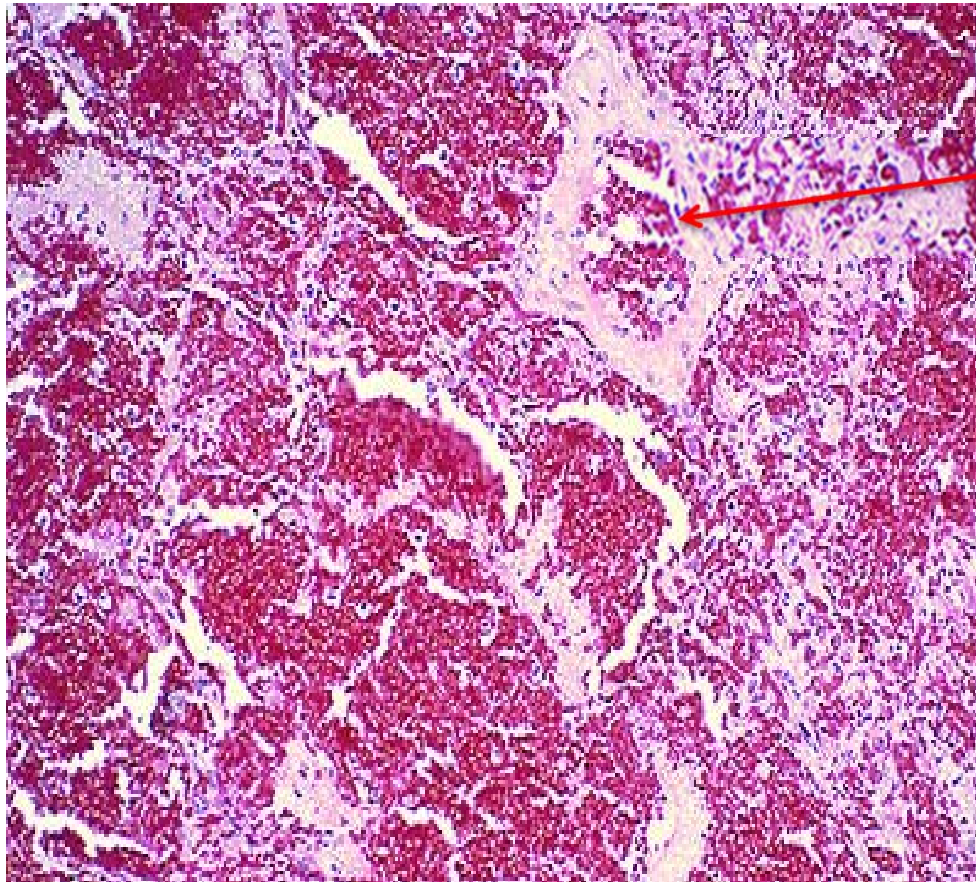


Blood vessel

Abnormal (alveolar spaces filled with blood)

Normal lung

**High magnification of abnormal lung**



Blood vessel

**Task 3.** Examine the microscopic images of the lung. Identify as many normal structures as you can (alveoli, septa, blood vessels)..

**Task 4.** Describe the abnormality that you see in the section of lung. What do the changes consist of? Are there cells present that should not be there, or cells that are present in abnormal locations?

**Task 5.** Look carefully at the alveolar septa in the area of abnormal lung. There are areas in which nuclei are not visible. Why not?

**Task 6.** There are areas of lung tissue with many red blood cells filling airspaces. Why?

**Task 7.** This process in the lung is a complication of the patient's knee surgery. She developed a thrombus in a leg vein. Why?

List three factors that predispose to thrombus formation.

- 1.
- 2.
- 3.

**Task 8.** What happened to the thrombus to cause the changes you see in the lung? What term is used to describe this? If the thrombus formed in the femoral vein, what route did it take to reach the lung?

**Task 9.** What is the term used to describe the changes in the lung? What will happen to this area of lung as a result?