

Al-Mustaqbal University



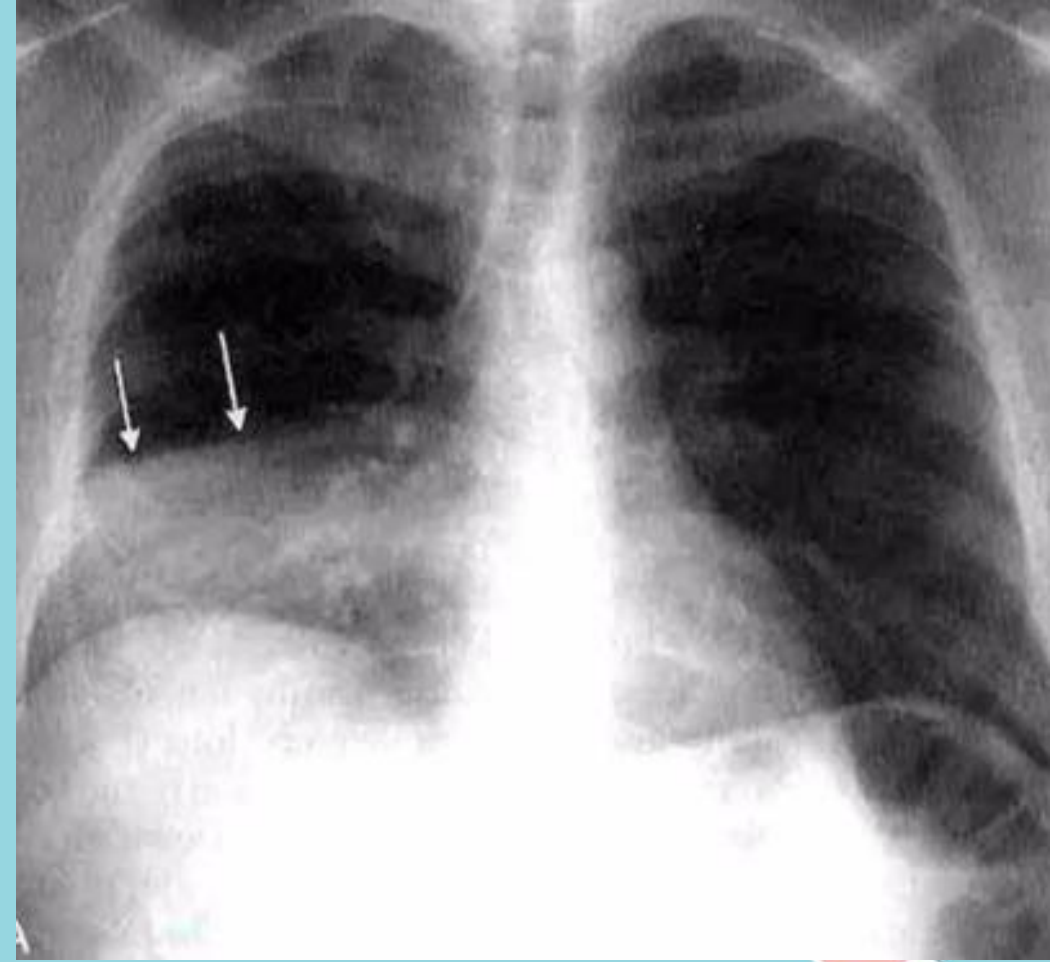
Pathophysiology 3rd stage

Lab (Lobar Pneumonia Stages)

Dr. Widad Abd AL-Jabbar & Dr. Hasanain Owadh

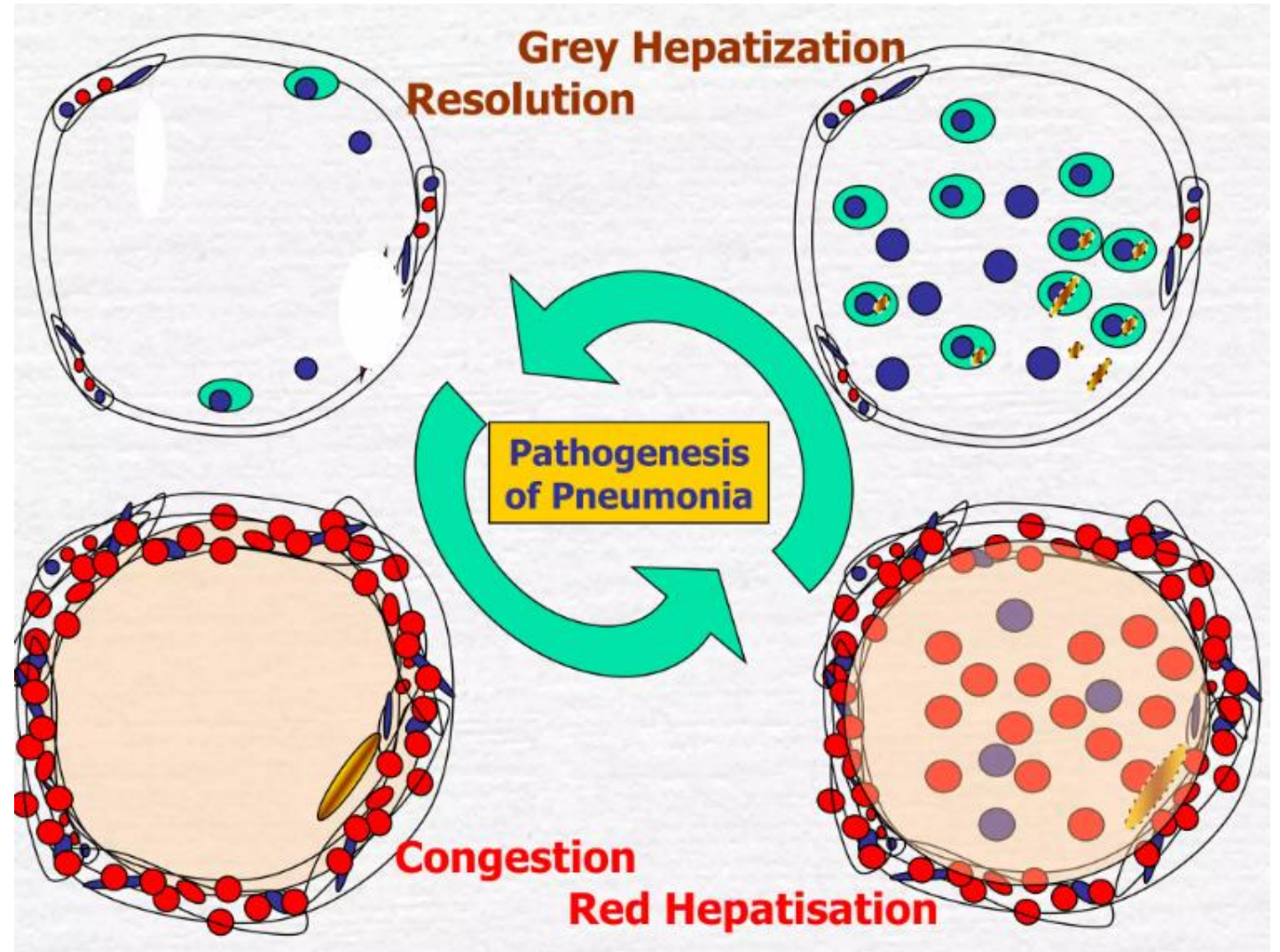
Lobar pneumonia:

is a form of pneumonia characterized by inflammatory exudate within the intra-alveolar space resulting in consolidation that affects a large and continuous area of the lobe of a lung.

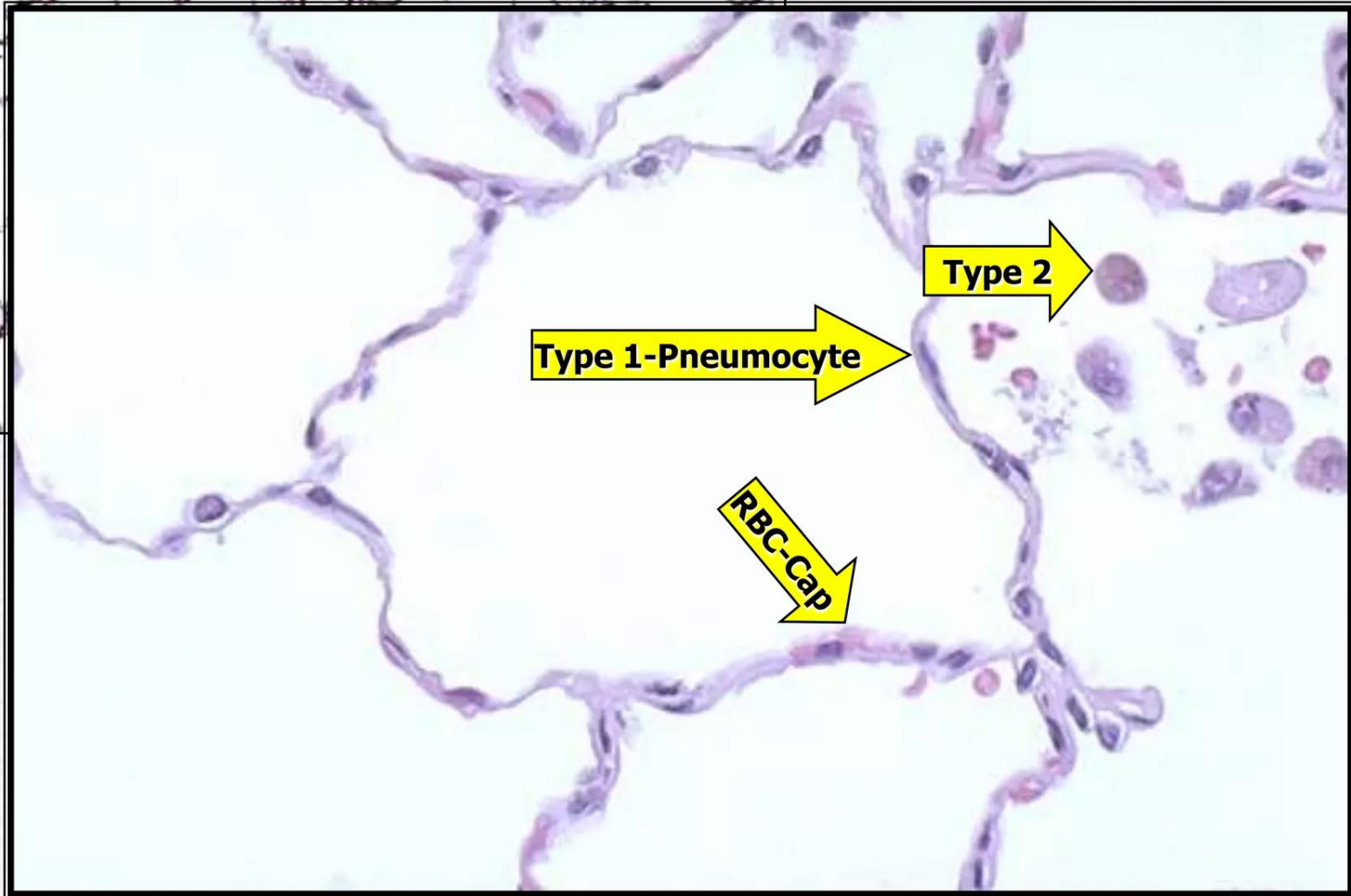
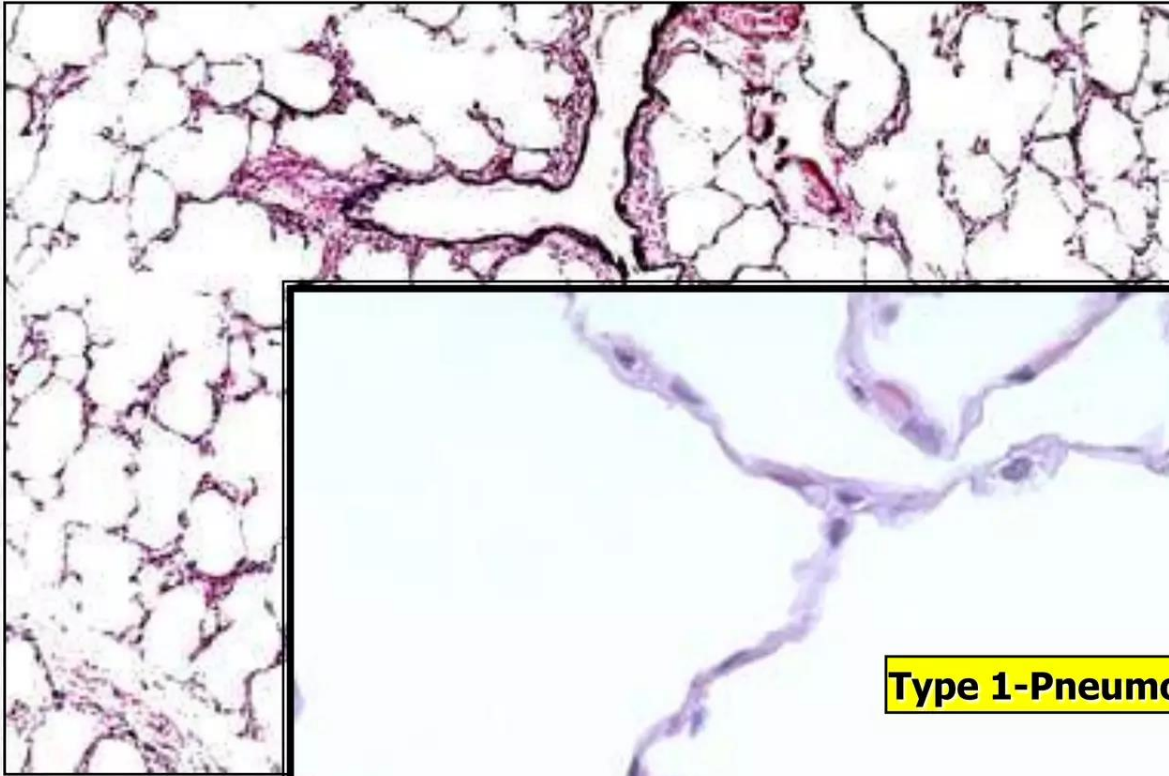


The four stages of lobar pneumonia include

- Stage 1: Congestion.
- Stage 2: Red hepatization.
- Stage 3: Gray hepatization.
- Stage 4: Resolution.



Normal Lung





Lobar pneumonia

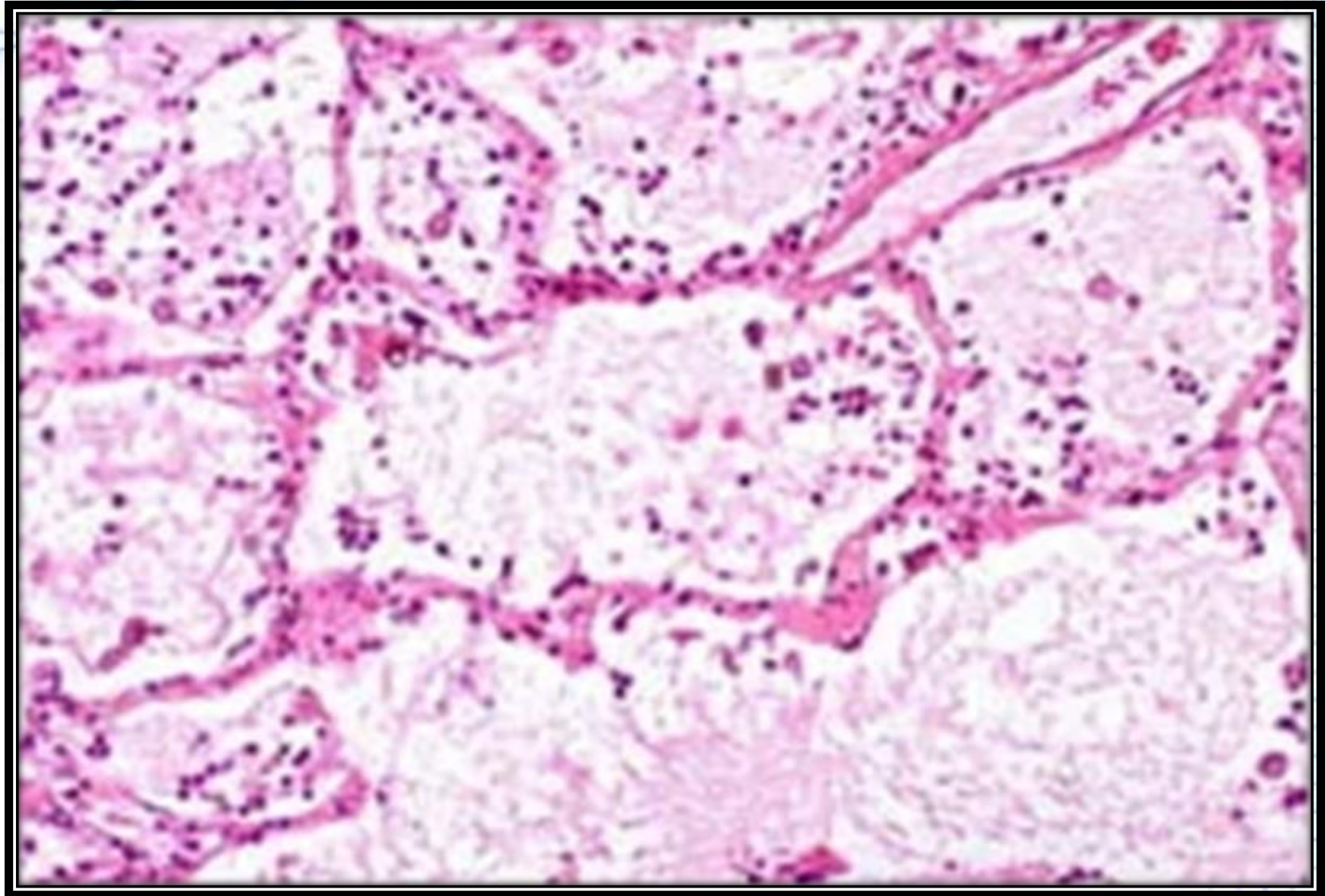
Stage 1:

Congestion

in the first 24 hours: This stage is

characterized histologically by
1- intra-alveolar exudate,

2- small numbers of neutrophils, often numerous bacteria.



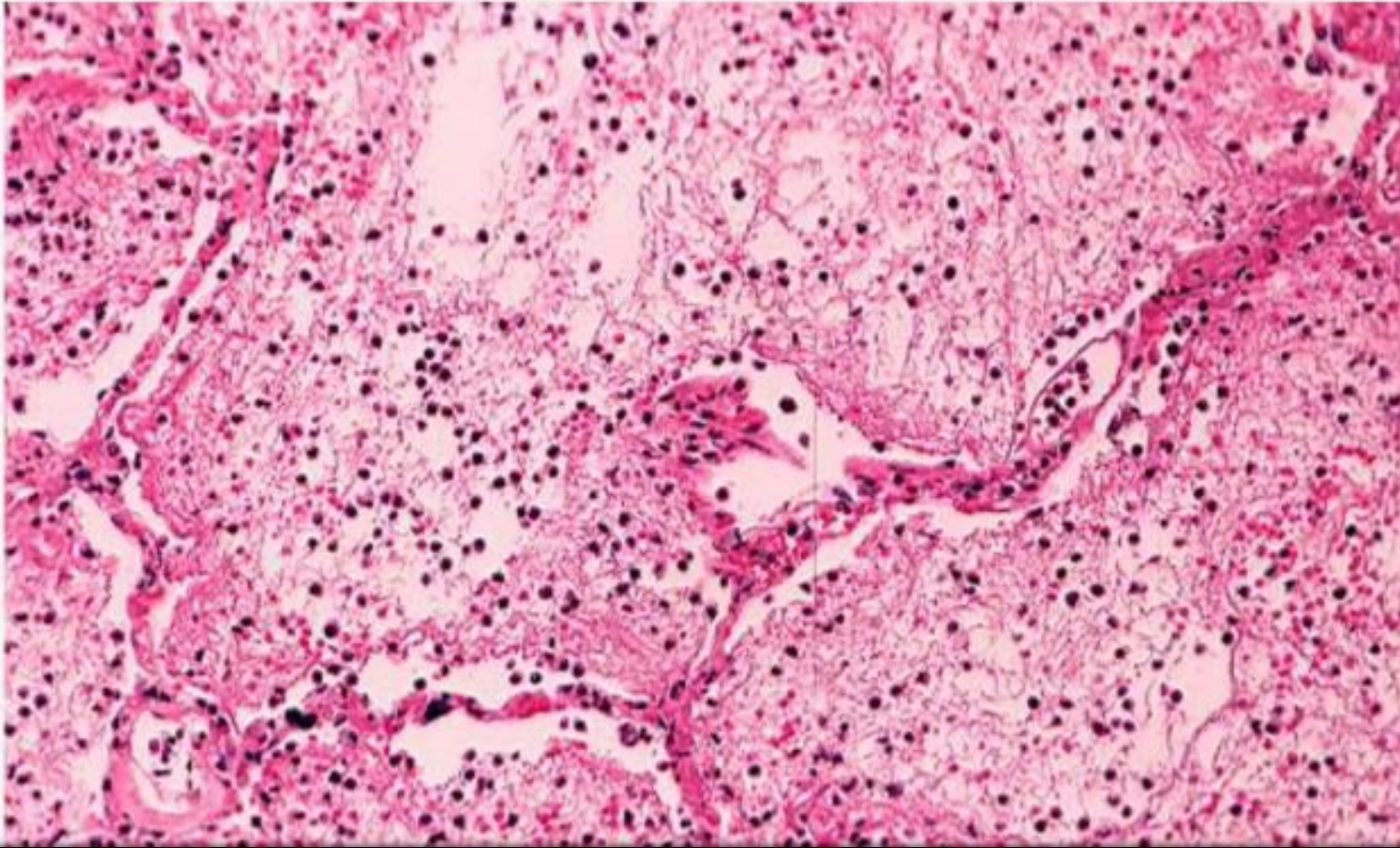
Lobar pneumonia Stage 2: **Red hepatization or consolidation**

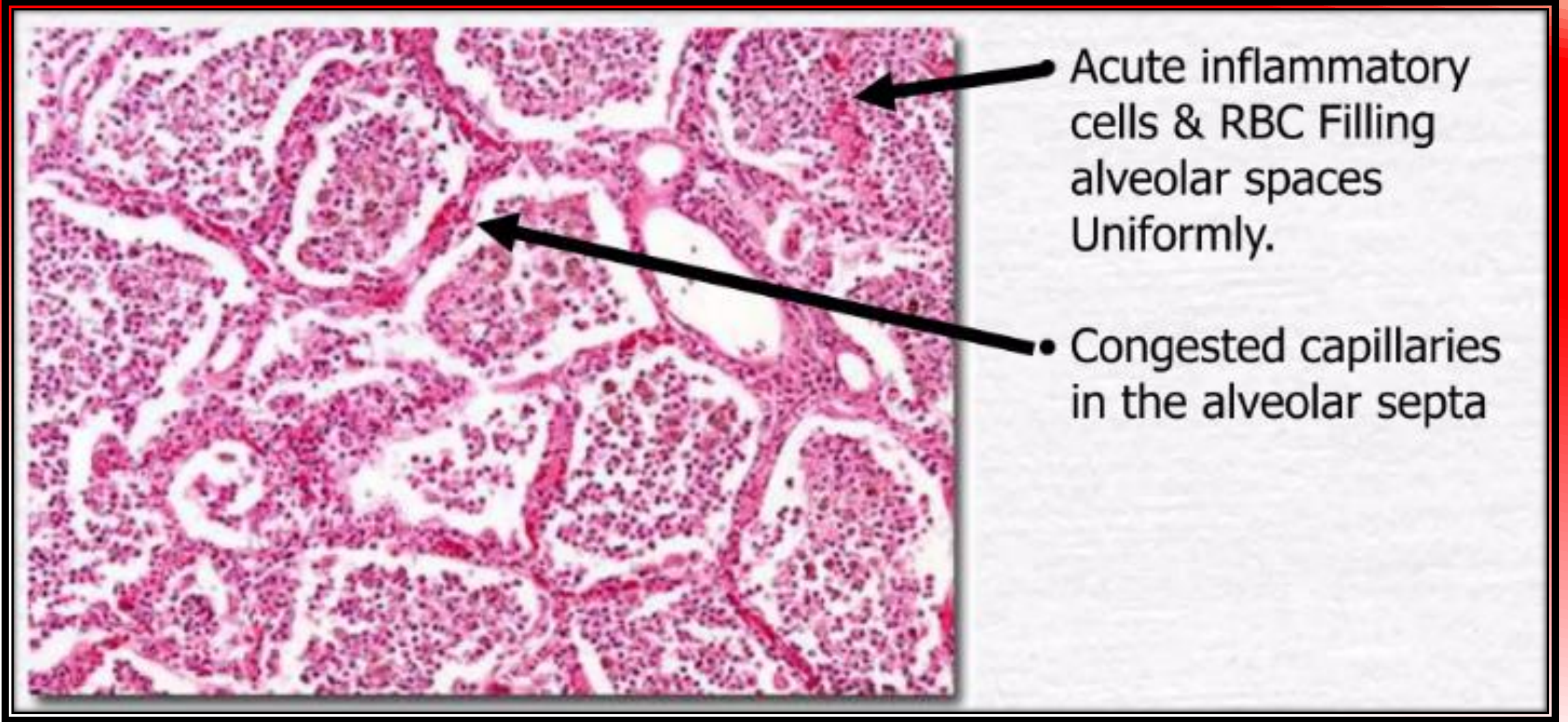
The gross appearance has been likened to that of the liver, hence the term "hepatization".



Lobar Pneumonia: Microscopy:

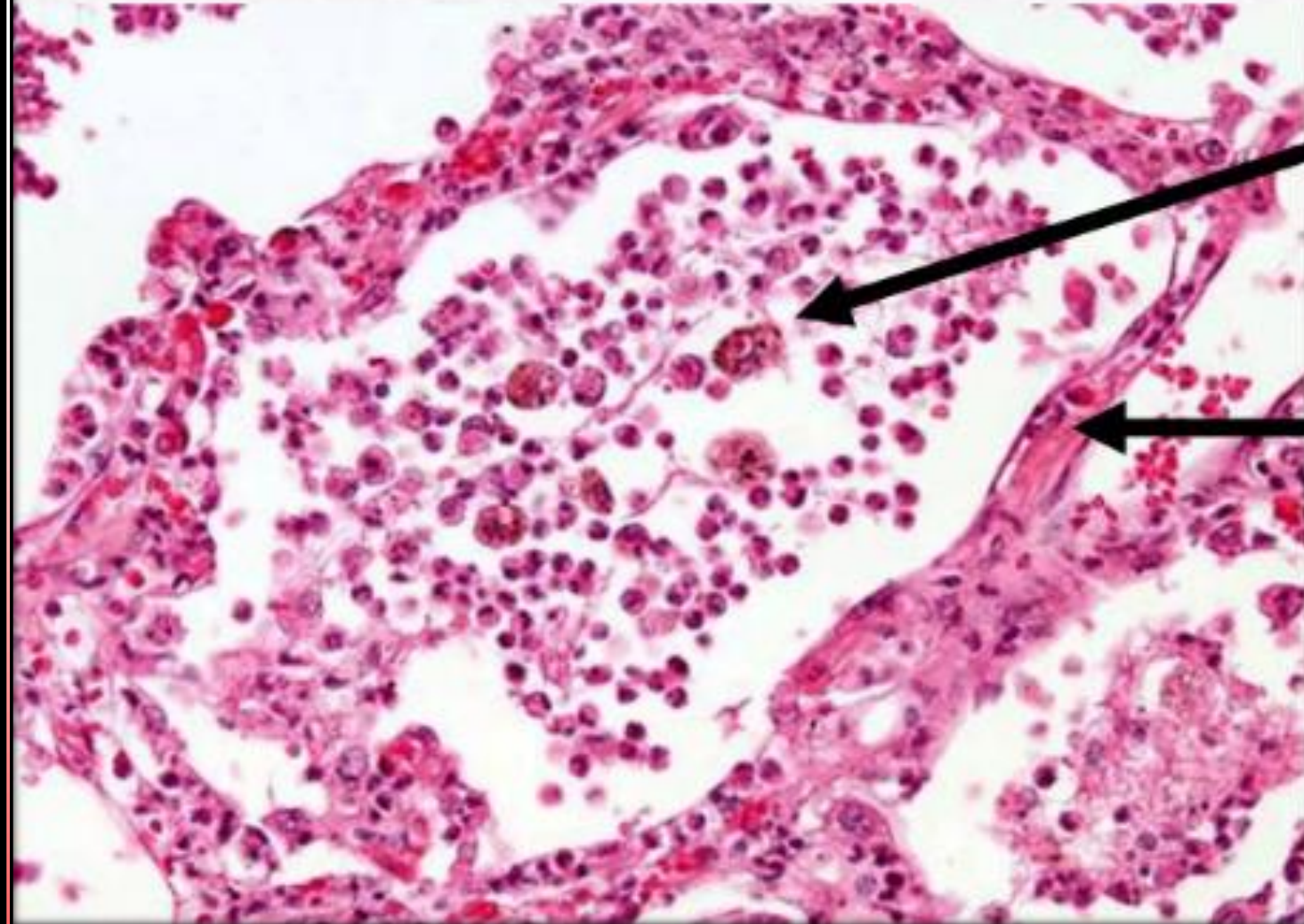
Congestion → red hepatization





Red hepatization or consolidation: Vascular congestion persists, with extravasation of red blood cells into alveolar spaces, along with increased numbers of neutrophils and fibrin.

Lobar Pneumonia: Red hepatization.



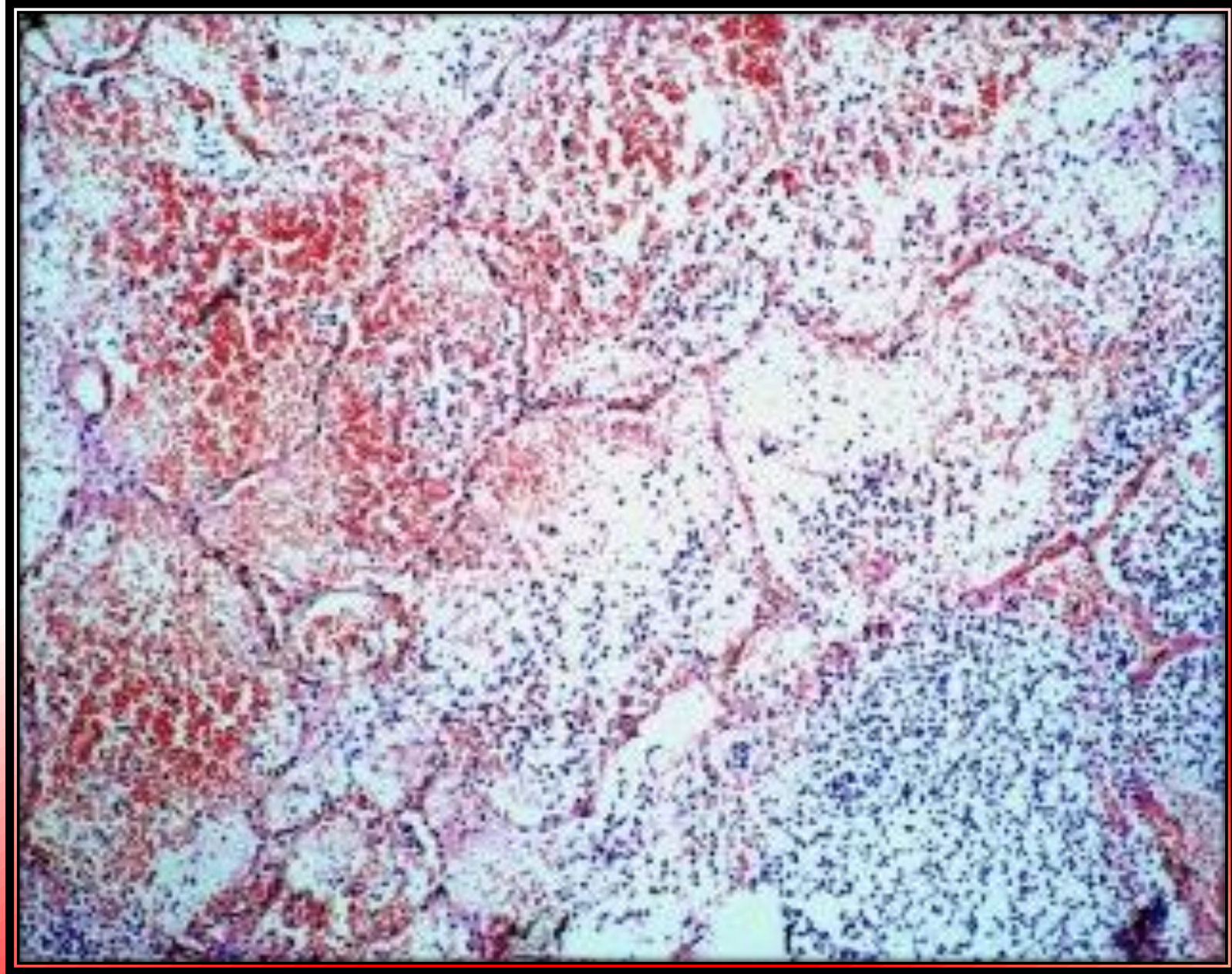
Acute inflammatory cells. Filling alveolar spaces Uniformly.

Congested capillaries in the alveolar septa

“Red hepatization”

Blood vessel congestion.

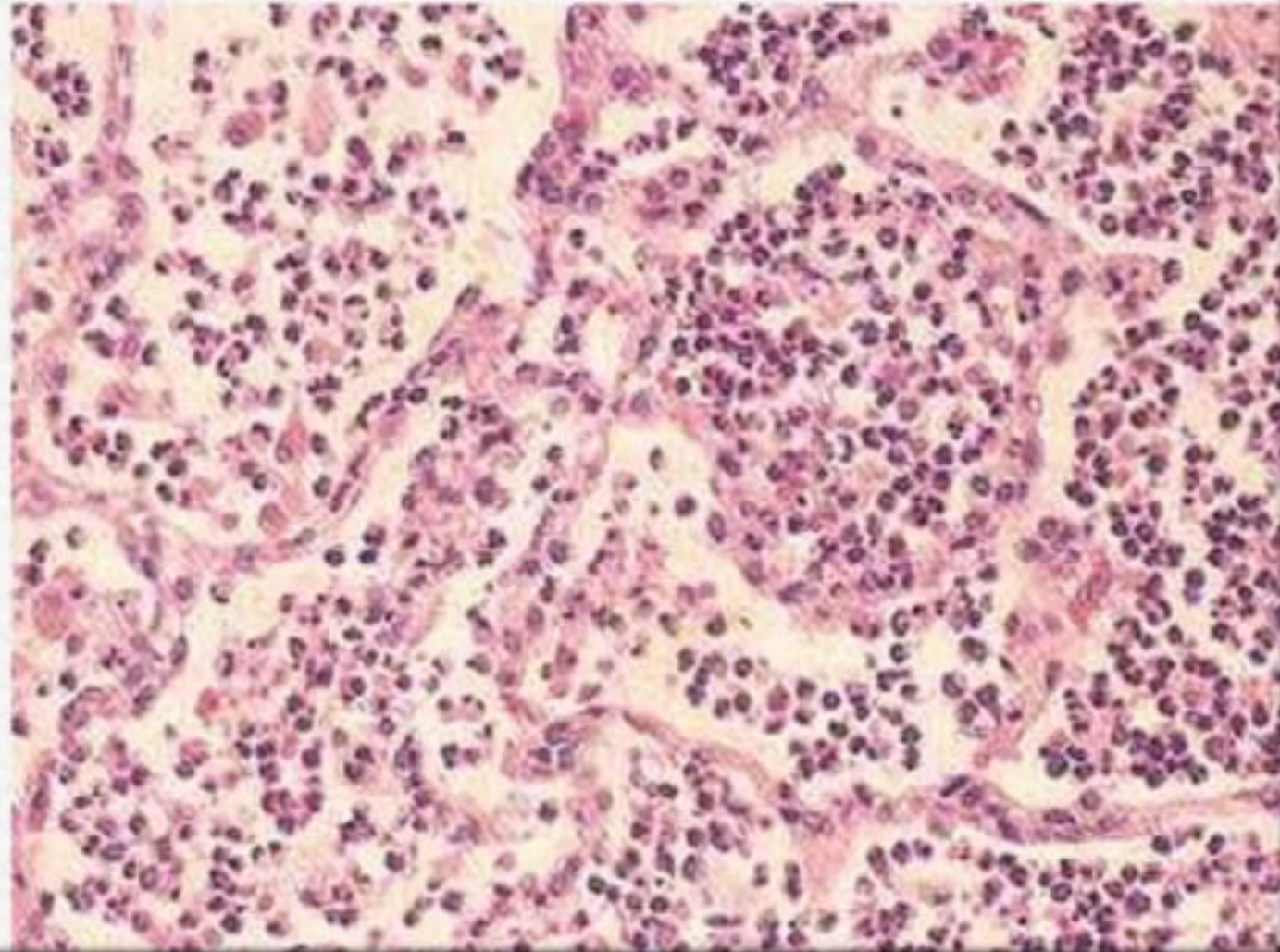
In the lumen of alveoli
1-erythrocytes,
2-fibrin,
3-several neutrophils.



- **Grey hepatization:**
grossly the color is paler
and the cut surface is
drier. This is when death
typically occurs in
severe cases.



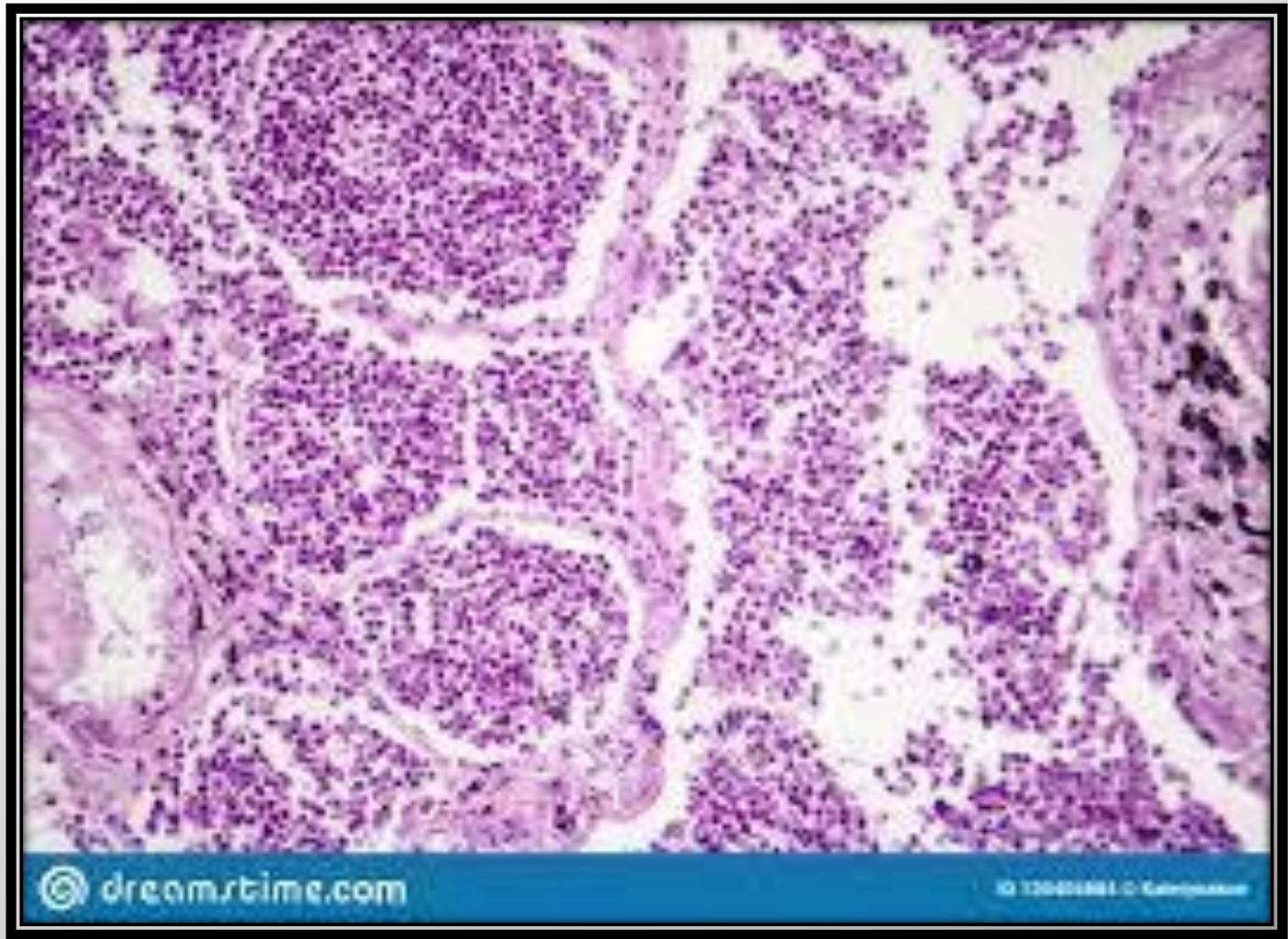
Lobar Pneumonia: Red → Grey
hepatization.



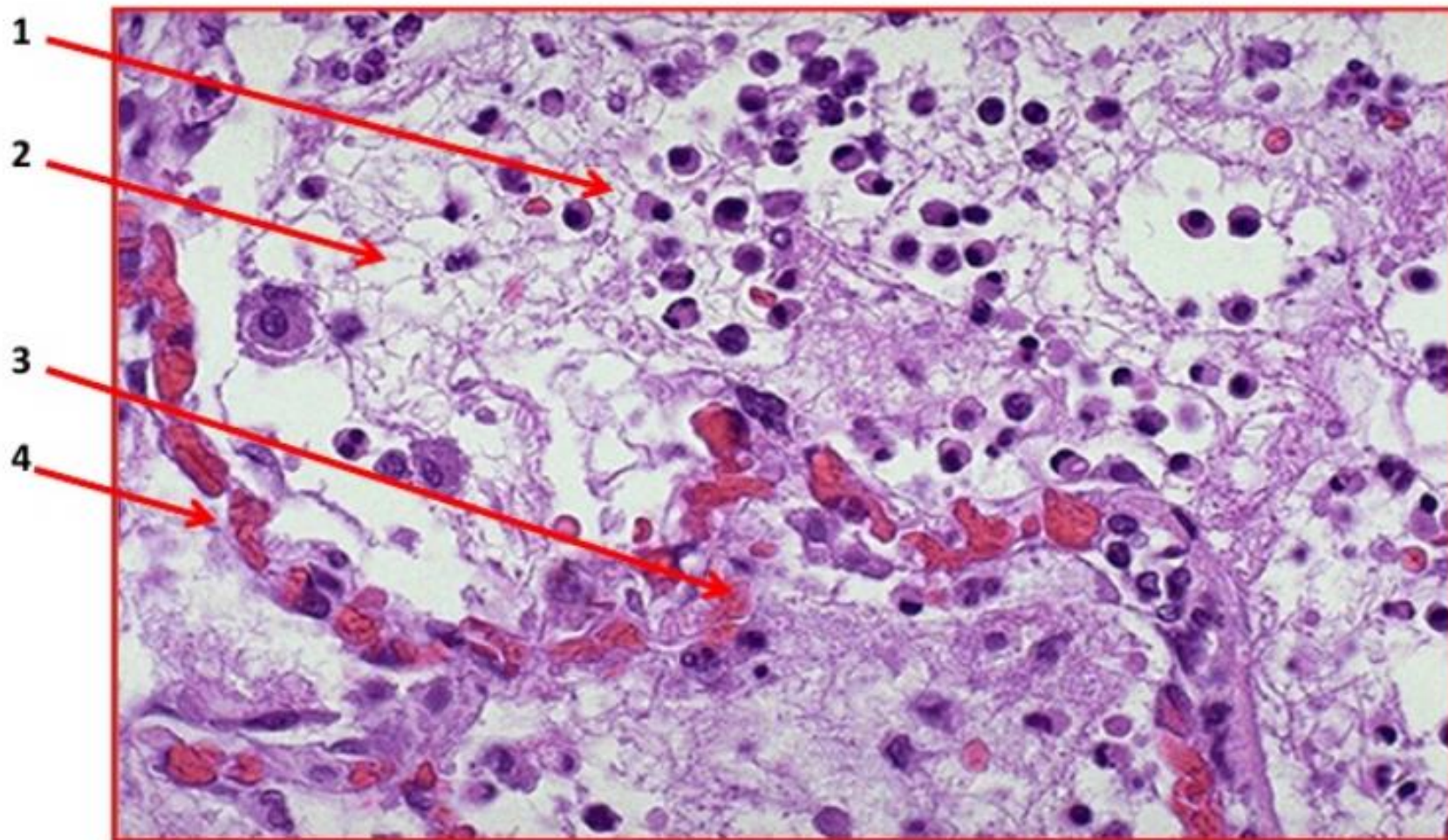
Lobar pneumonia Stage

3: Lobar (gray hepatic phase) Gray hepatization

- **Grey hepatization:**
- Red blood cells disintegrate, with persistence of the neutrophils and fibrin.



Lobar Pneumonia, Grey Hepatization



- 1) Inflammatory cells
- 2) Clumps of fibrin and edema
- 3) Fragmented RBCs
- 4) Congested alveolar capillaries

Stage 4: **Resolution**

Fluids and breakdown products from cell destruction are reabsorbed.

Macrophages (large white blood cells) are present and help to clear (neutrophils) and left over debris.

