

Author(s): Stephen Ramsburgh, M.D., Gerald Abrams, M.D., 2009

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Pathology Labs

M2 – Respiratory Sequence

Gerald Abrams M.D.

Fall, 2008



M-2 Respiratory Laboratory - 1

63 Aspiration pneumonia

26 Tuberculosis

64 Pneumonia

29 Aspergillosis

200 ARDS

M-2 Respiratory Laboratory - 1

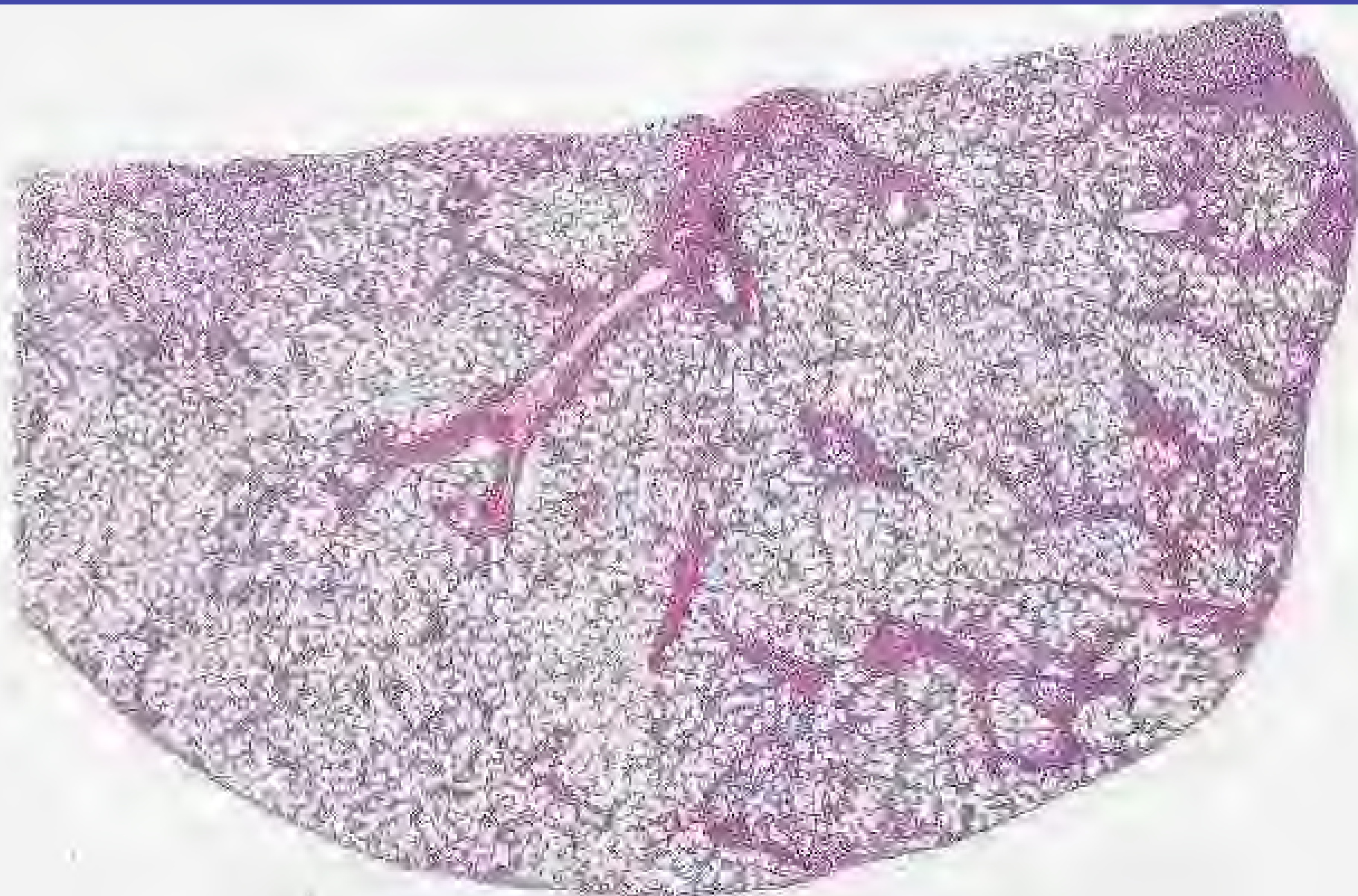
63 Aspiration pneumonia

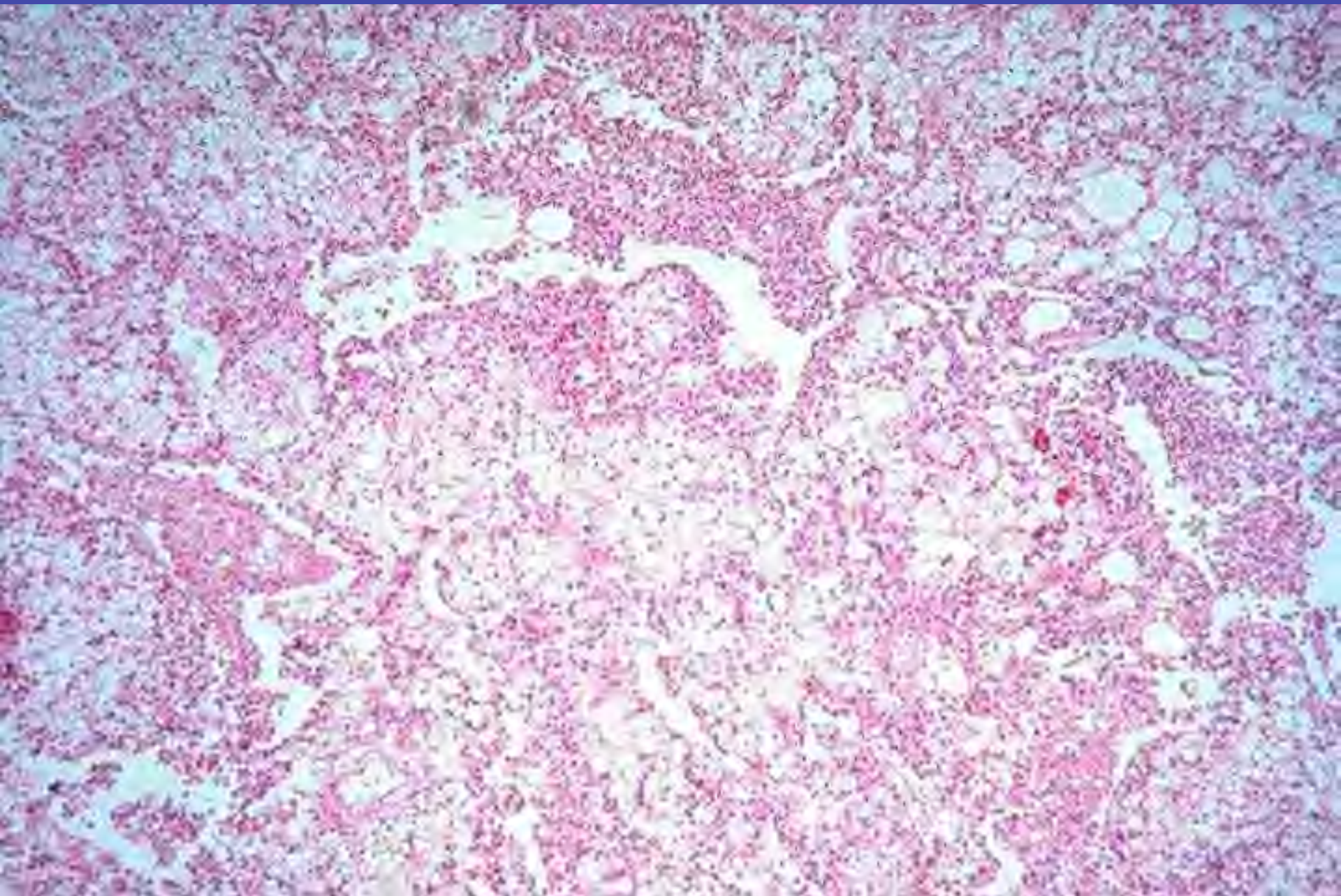
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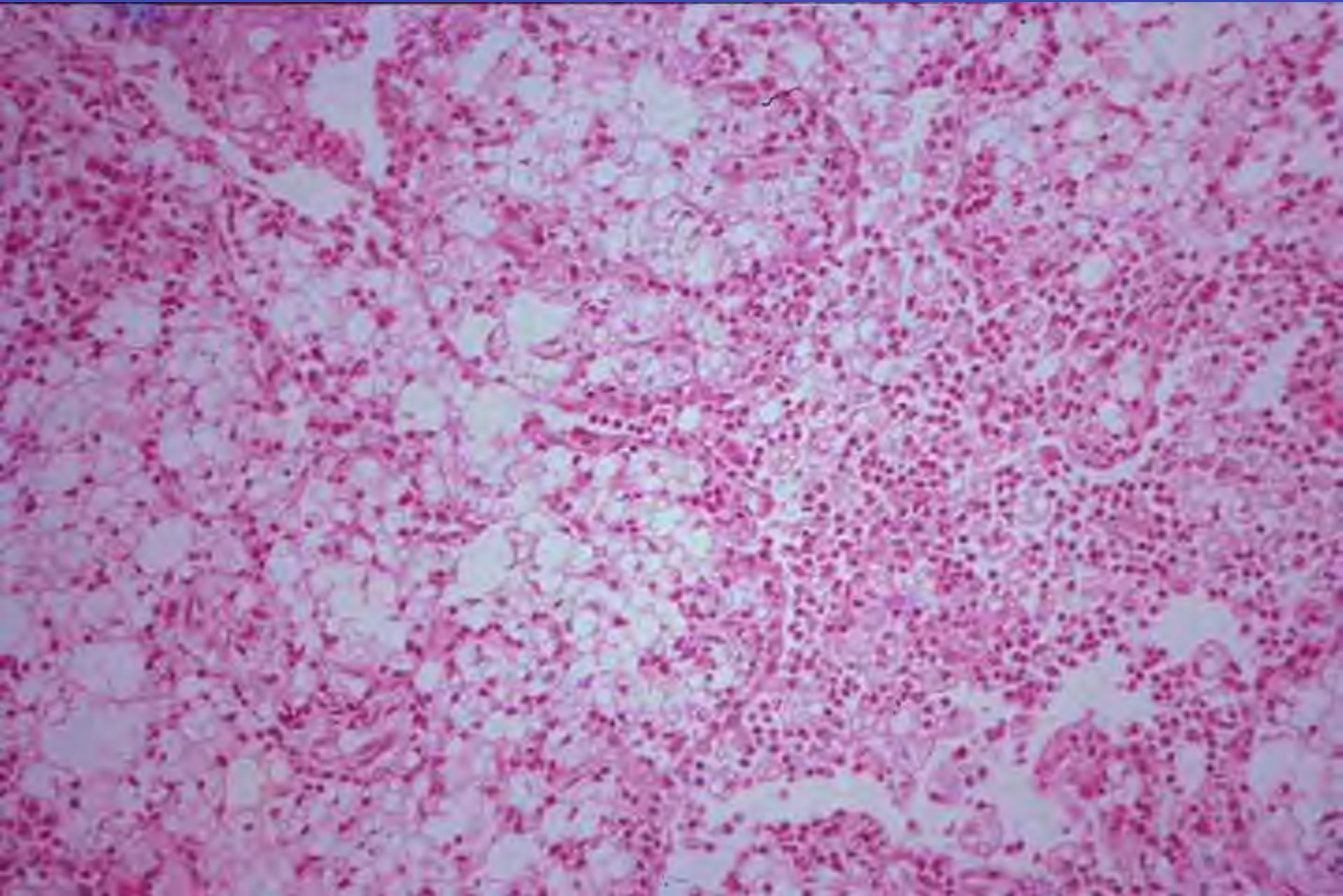
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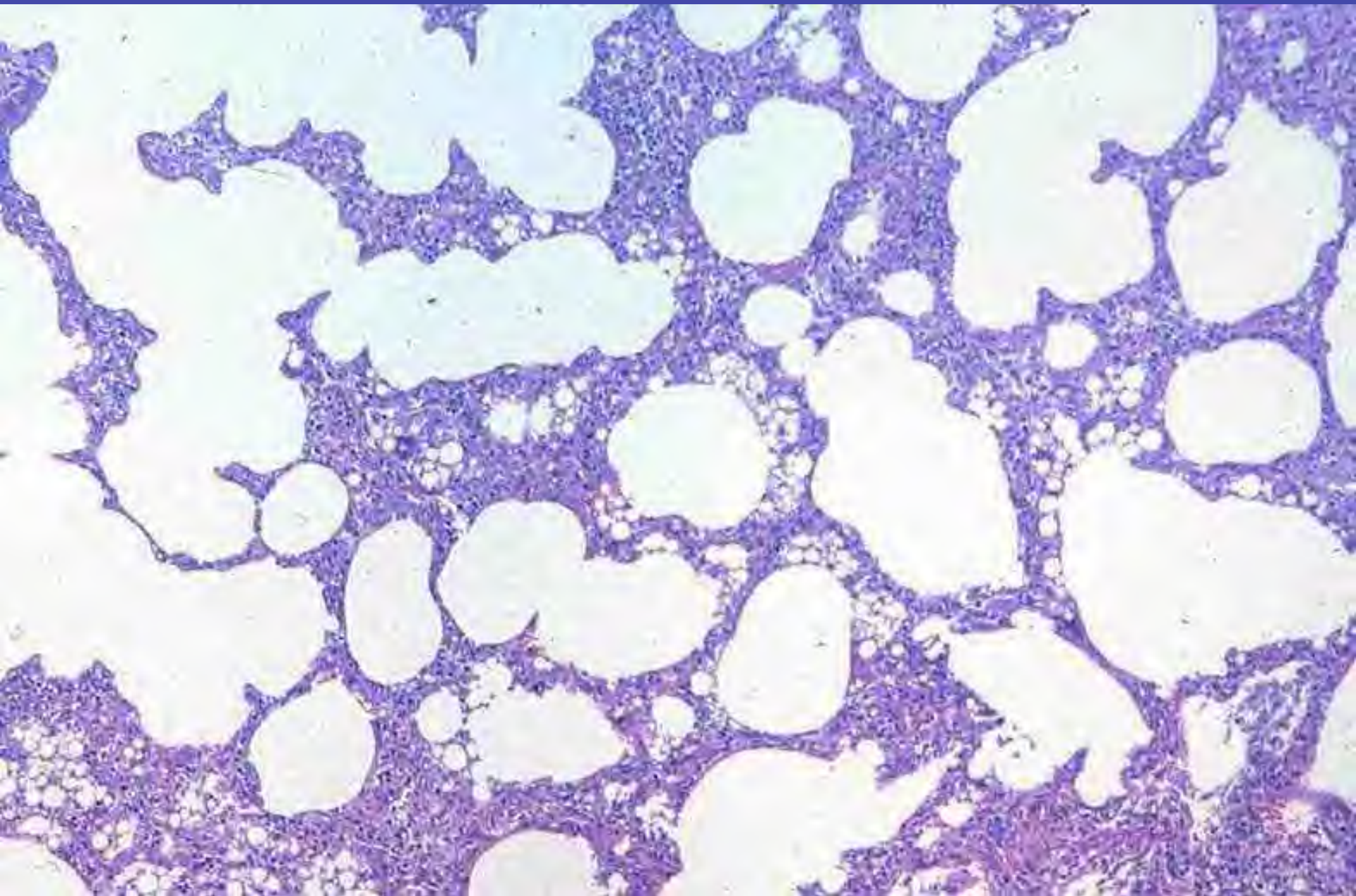
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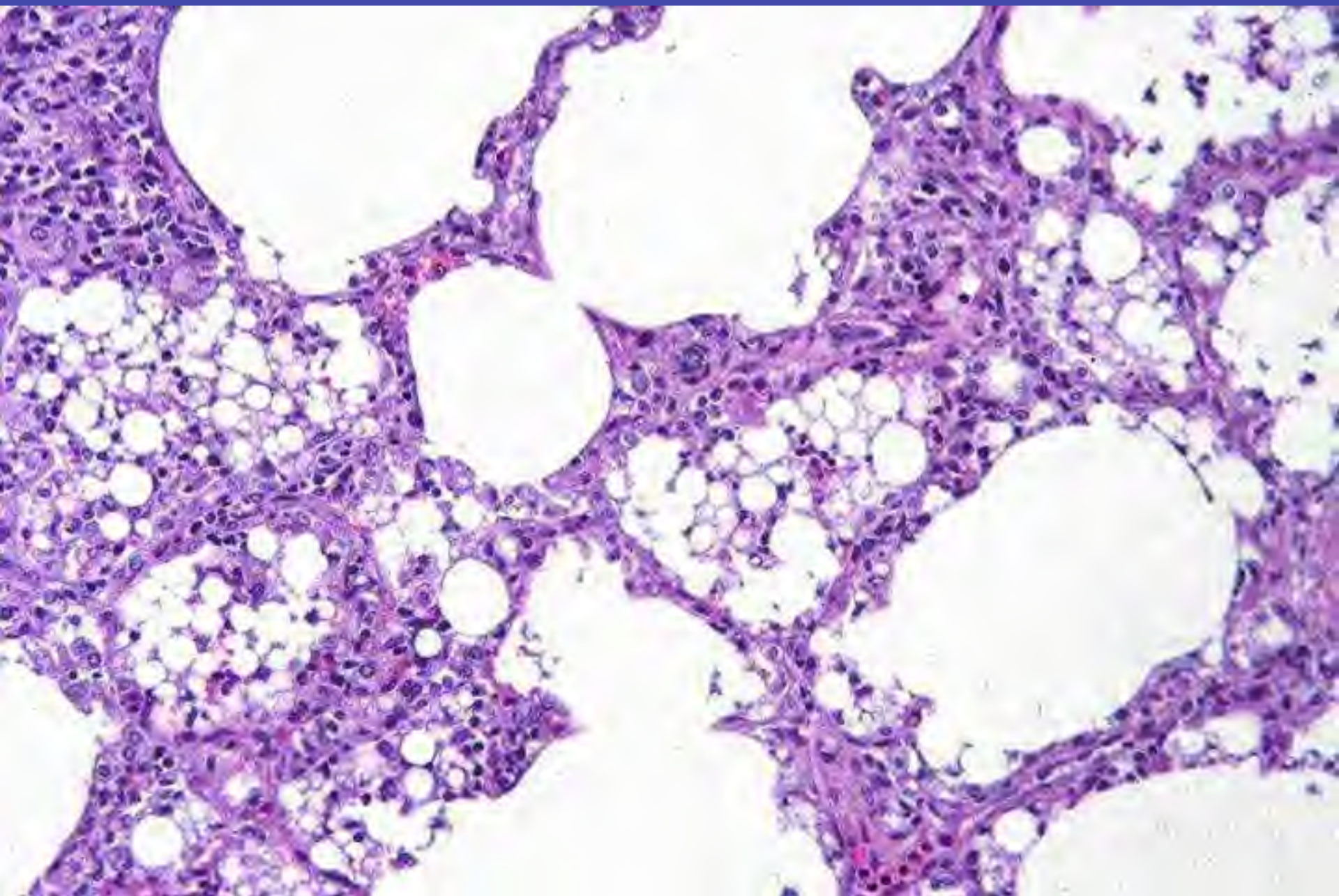
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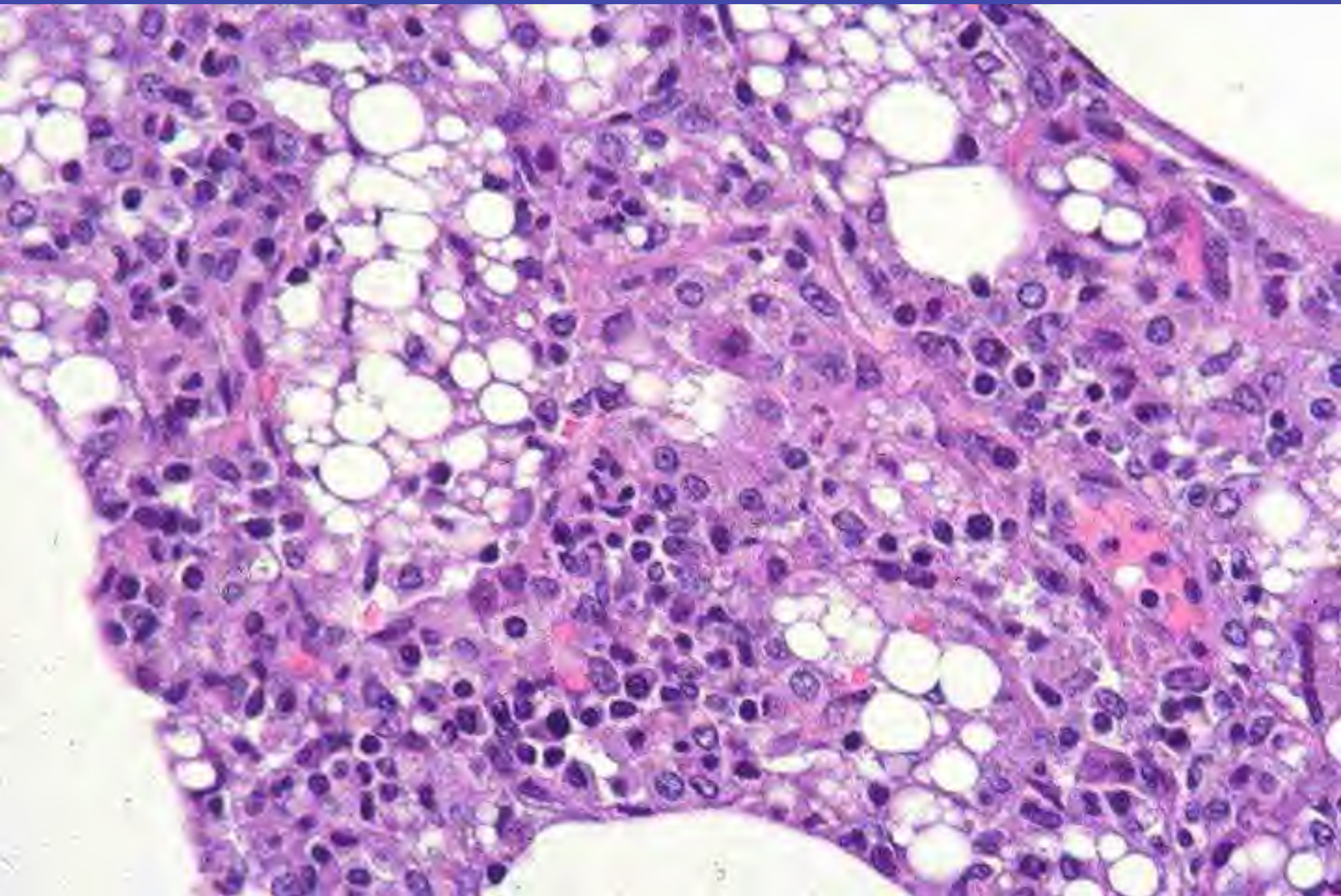


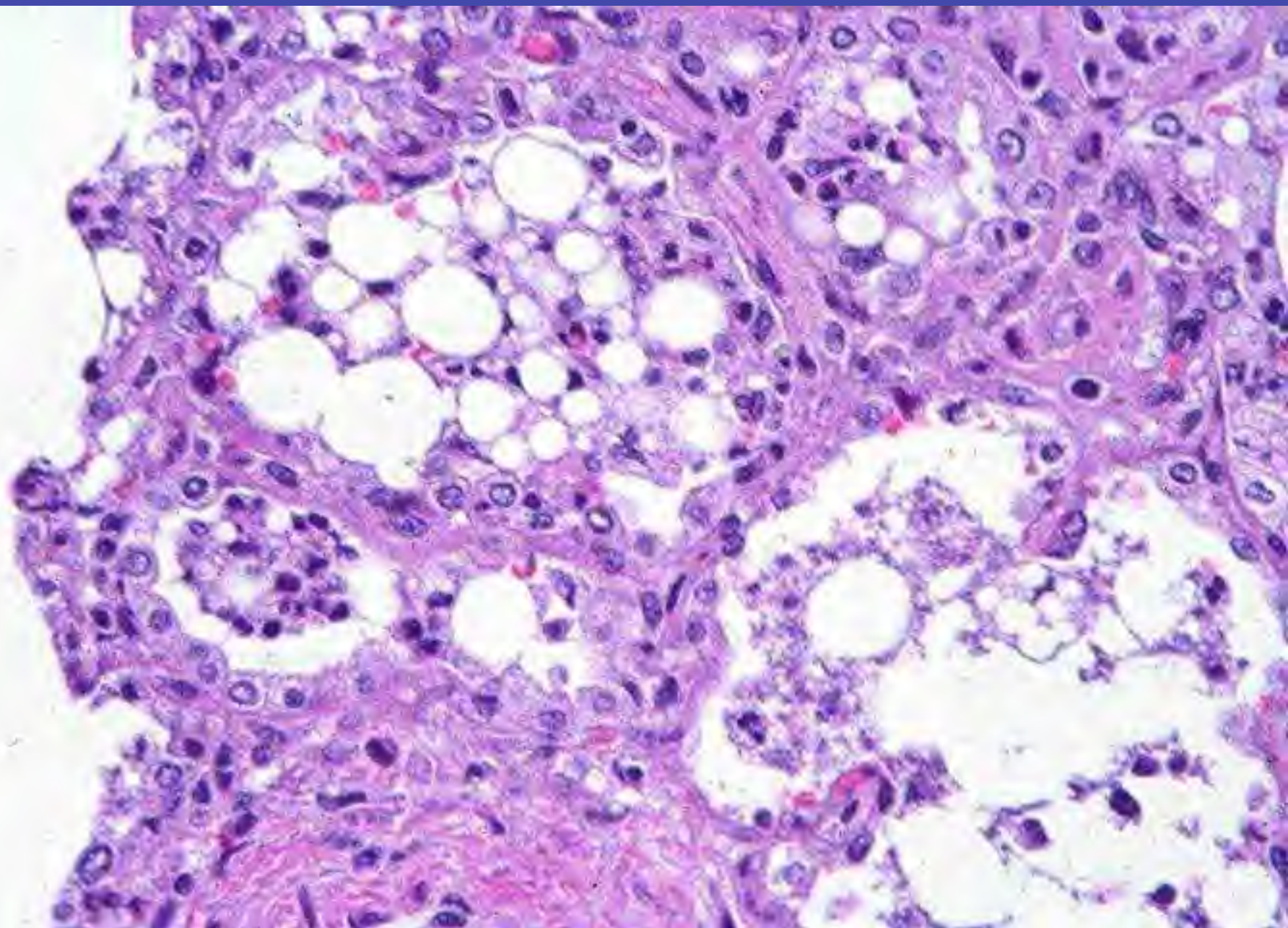


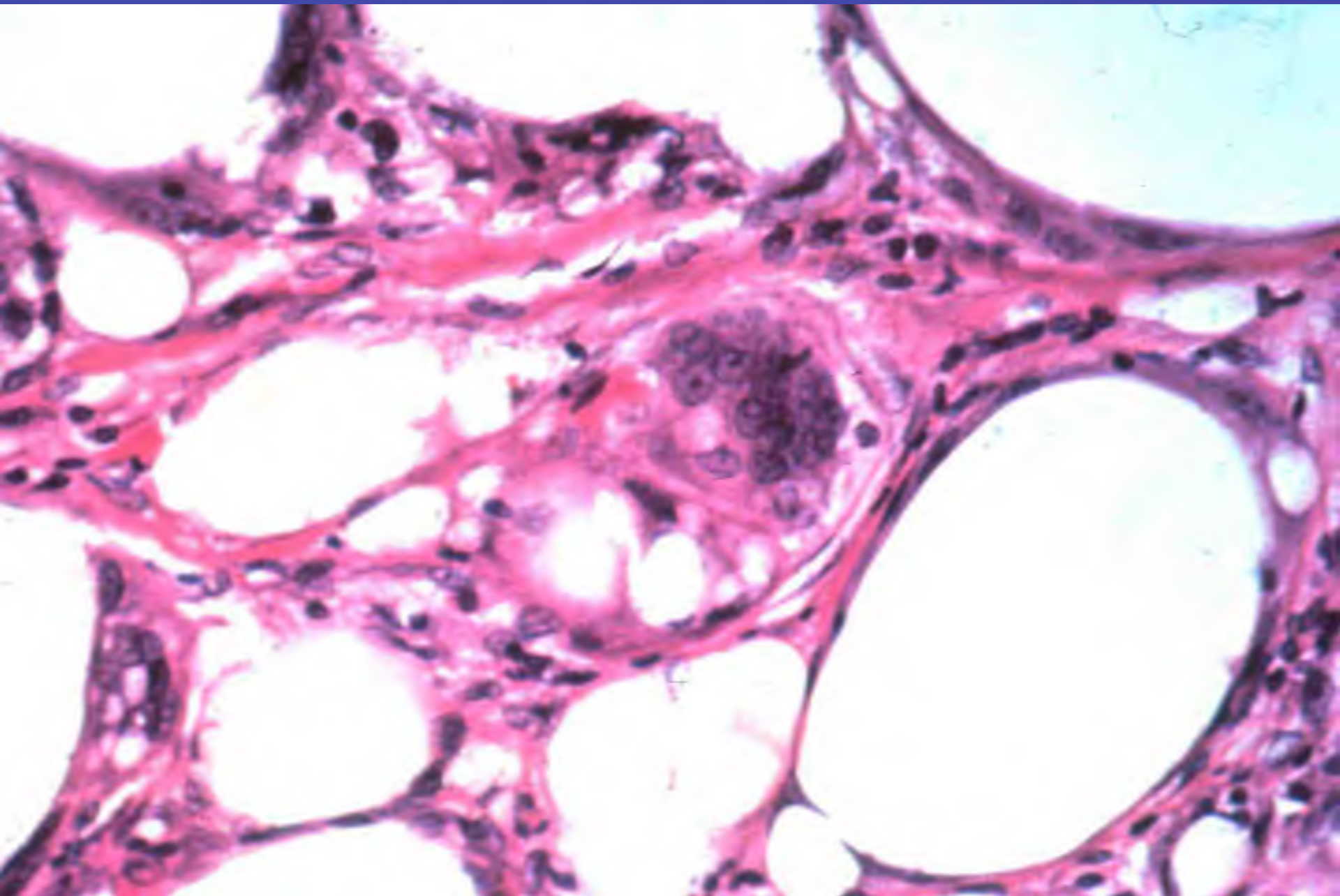


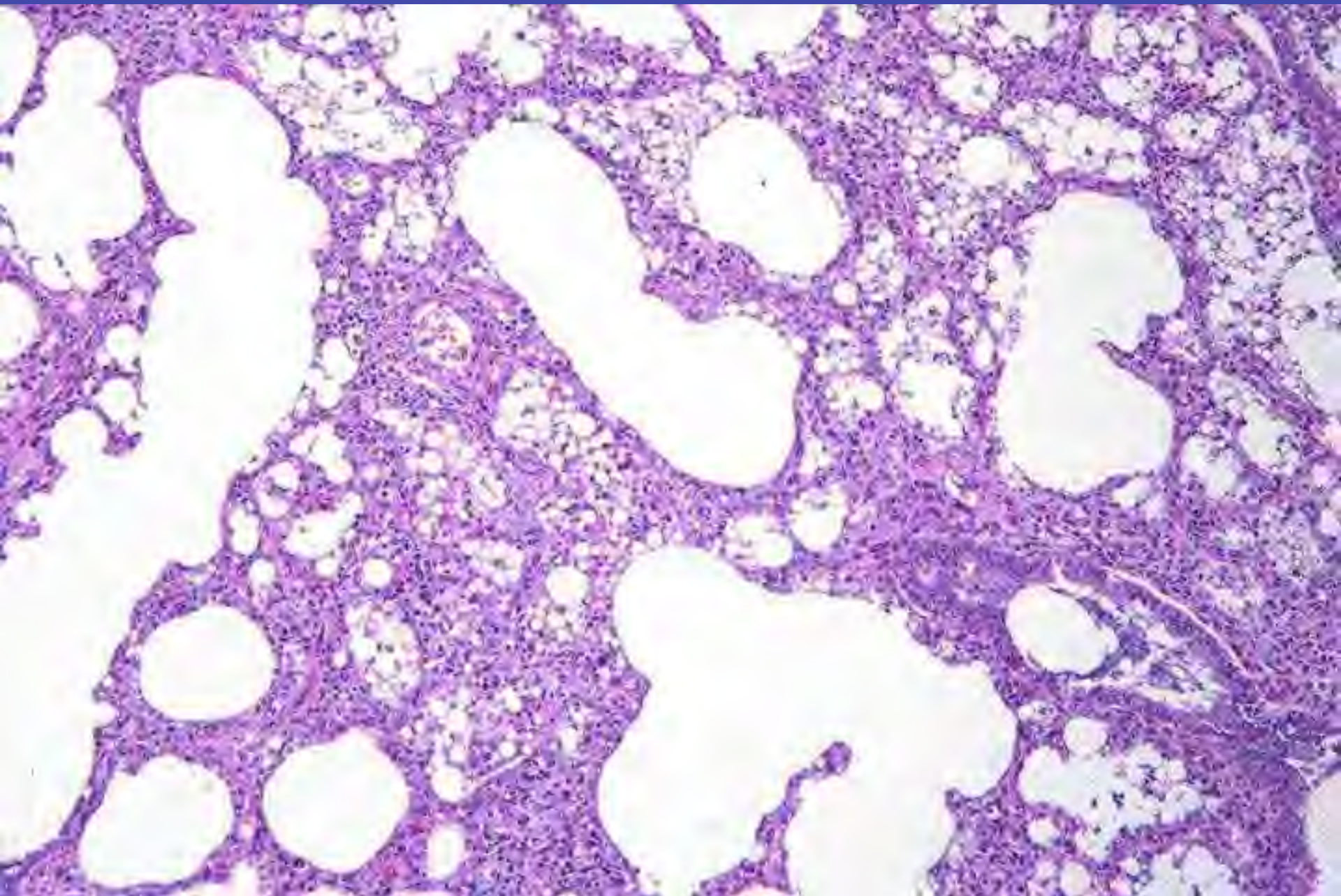


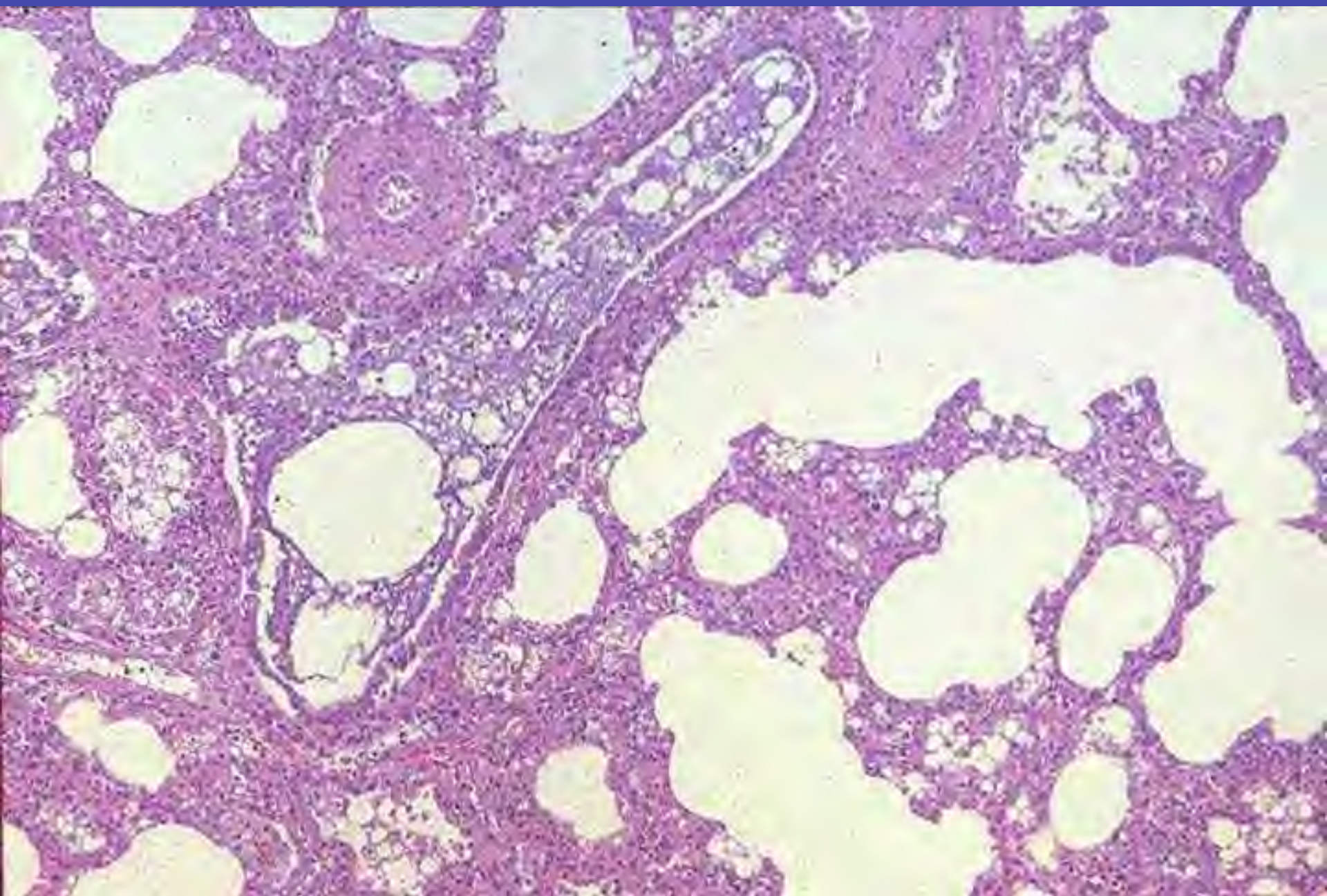


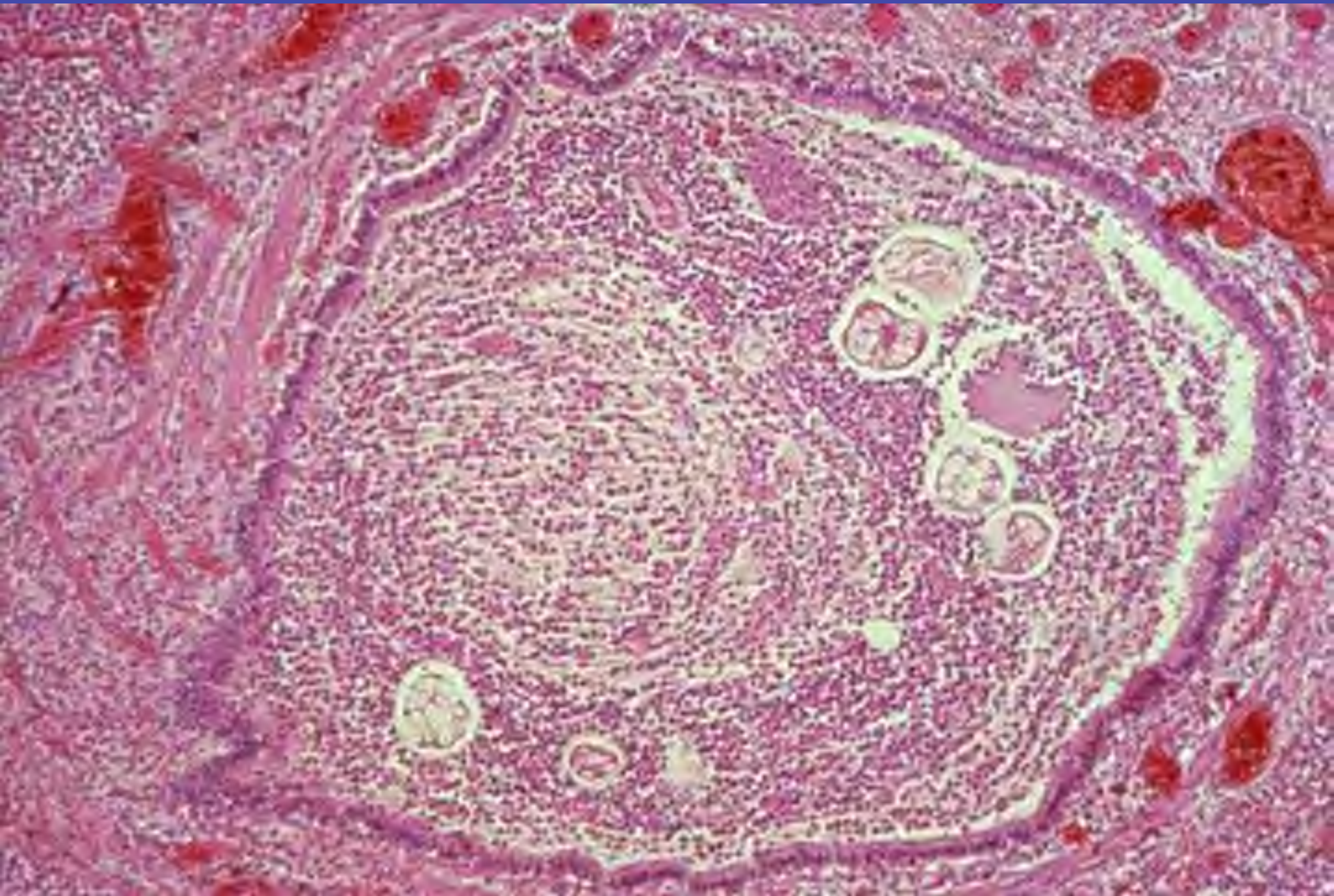


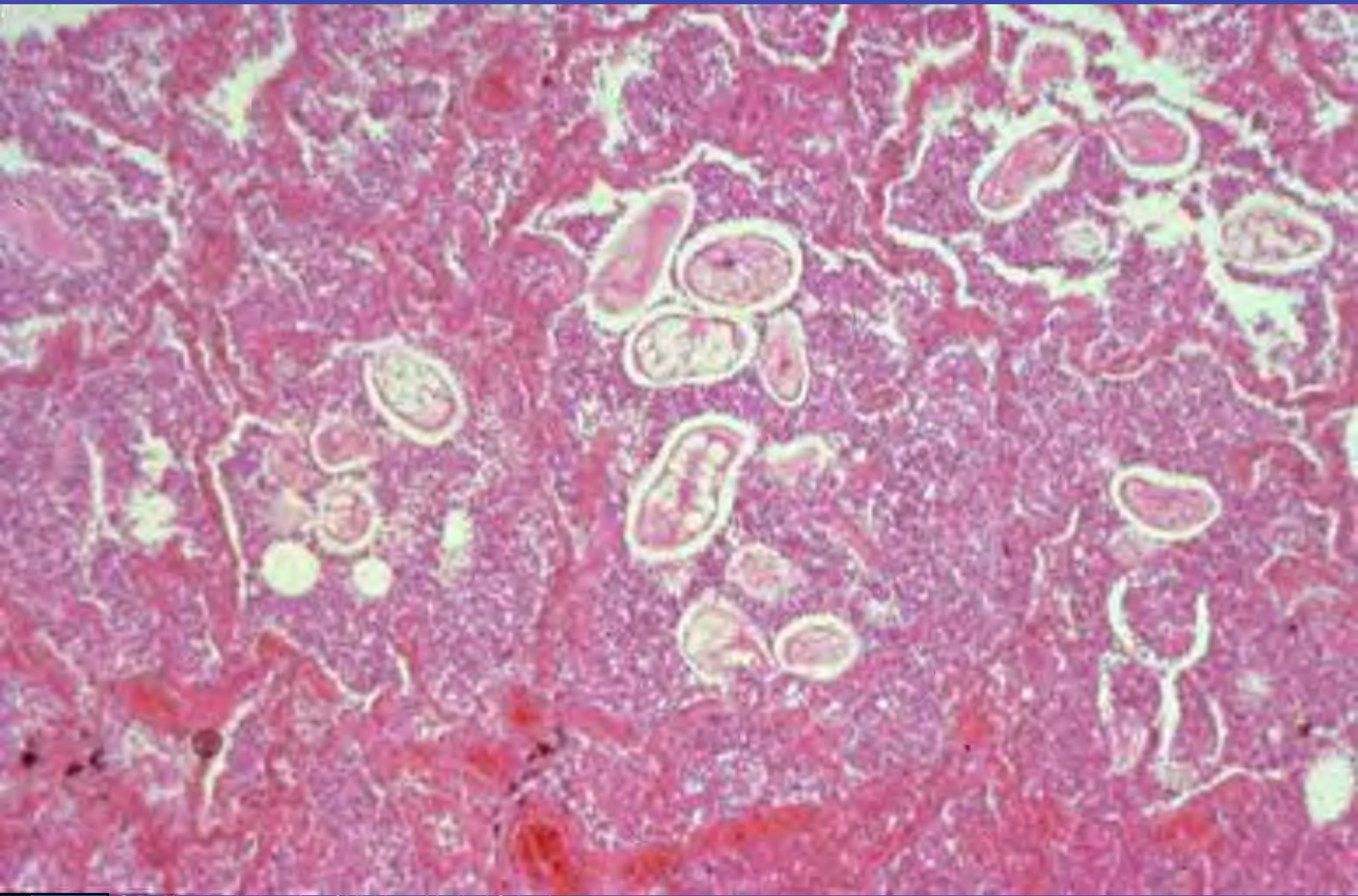












M-2 Respiratory Laboratory - 1

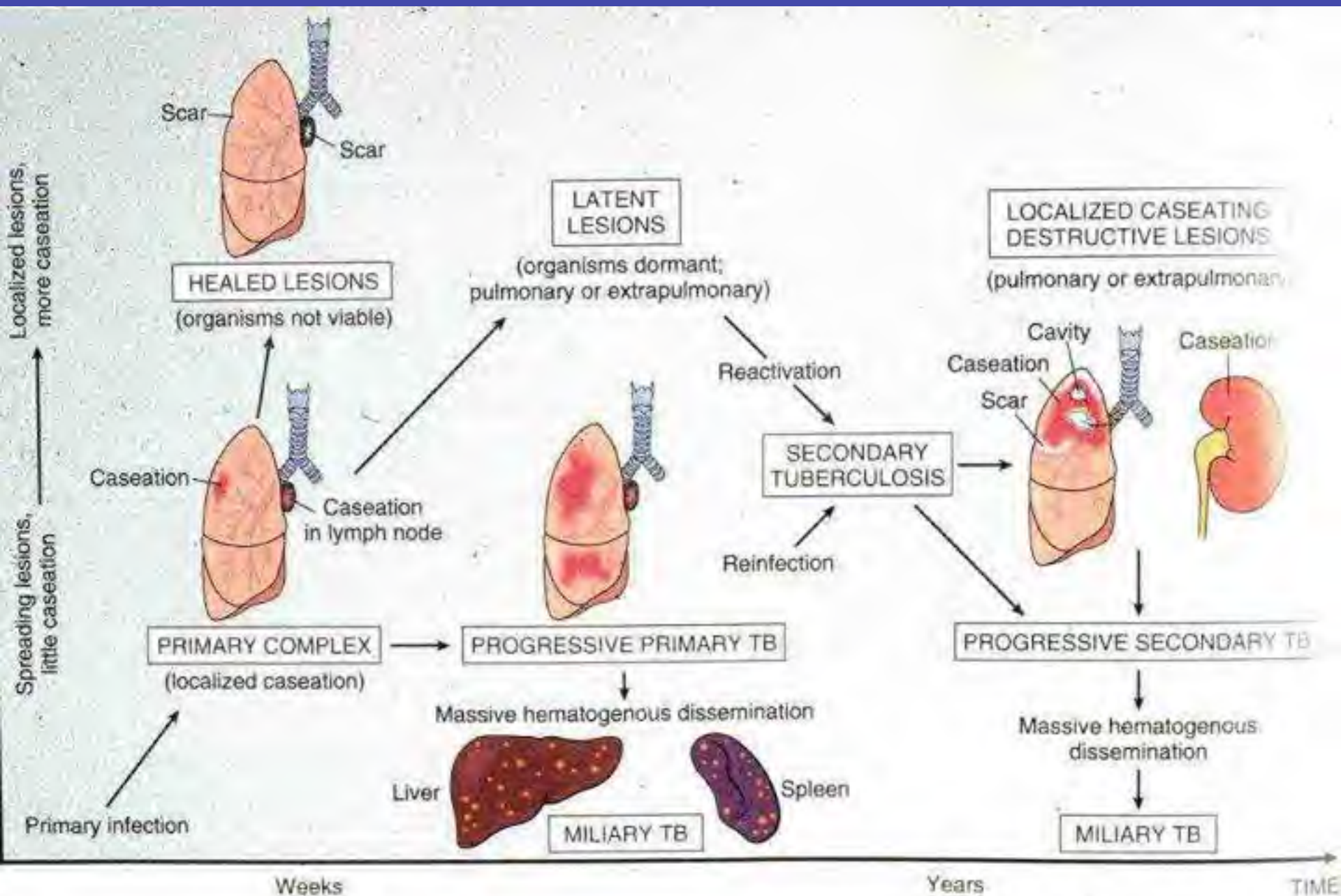
63 Aspiration pneumonia

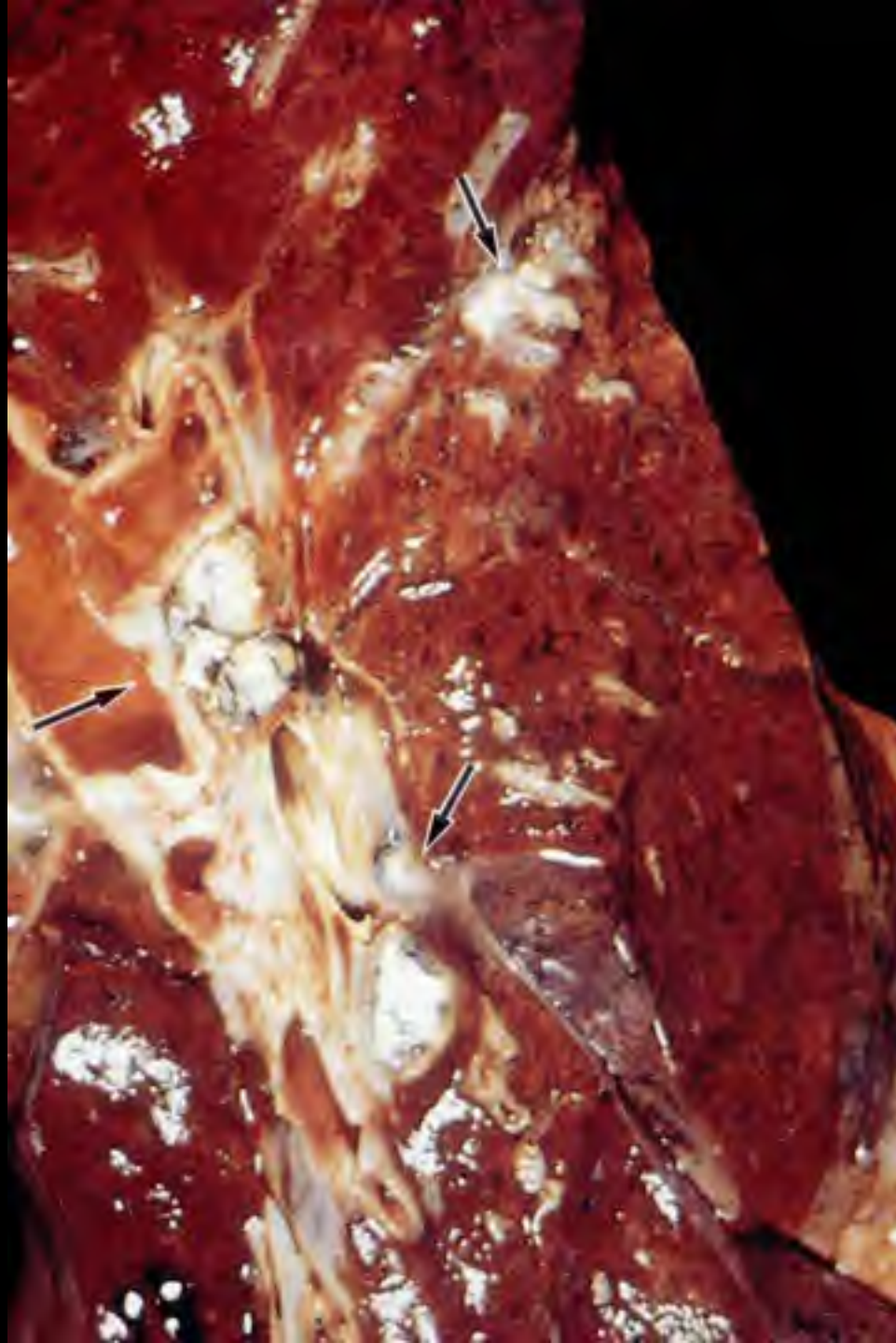
26 Tuberculosis

64 Pneumonia

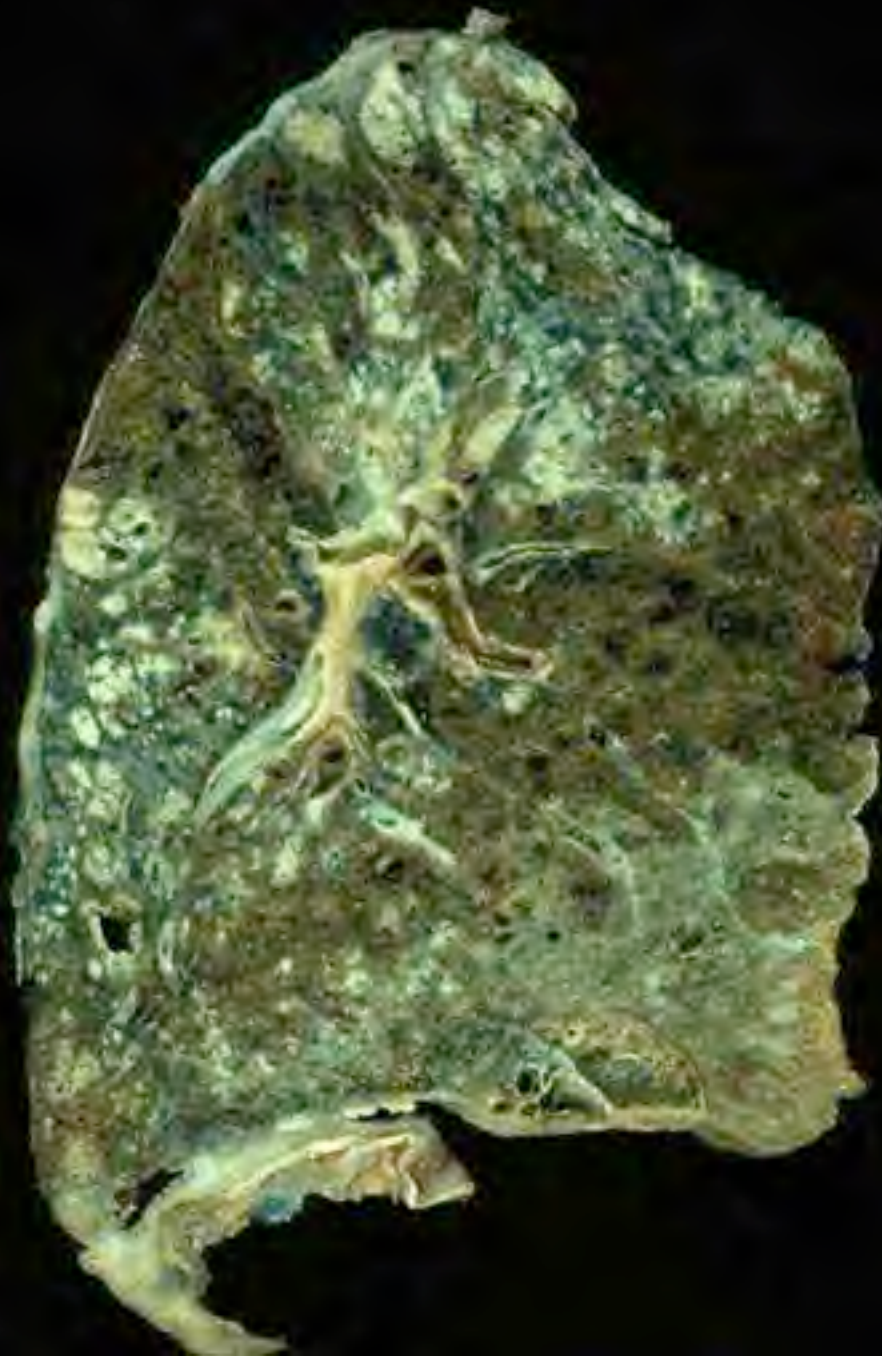
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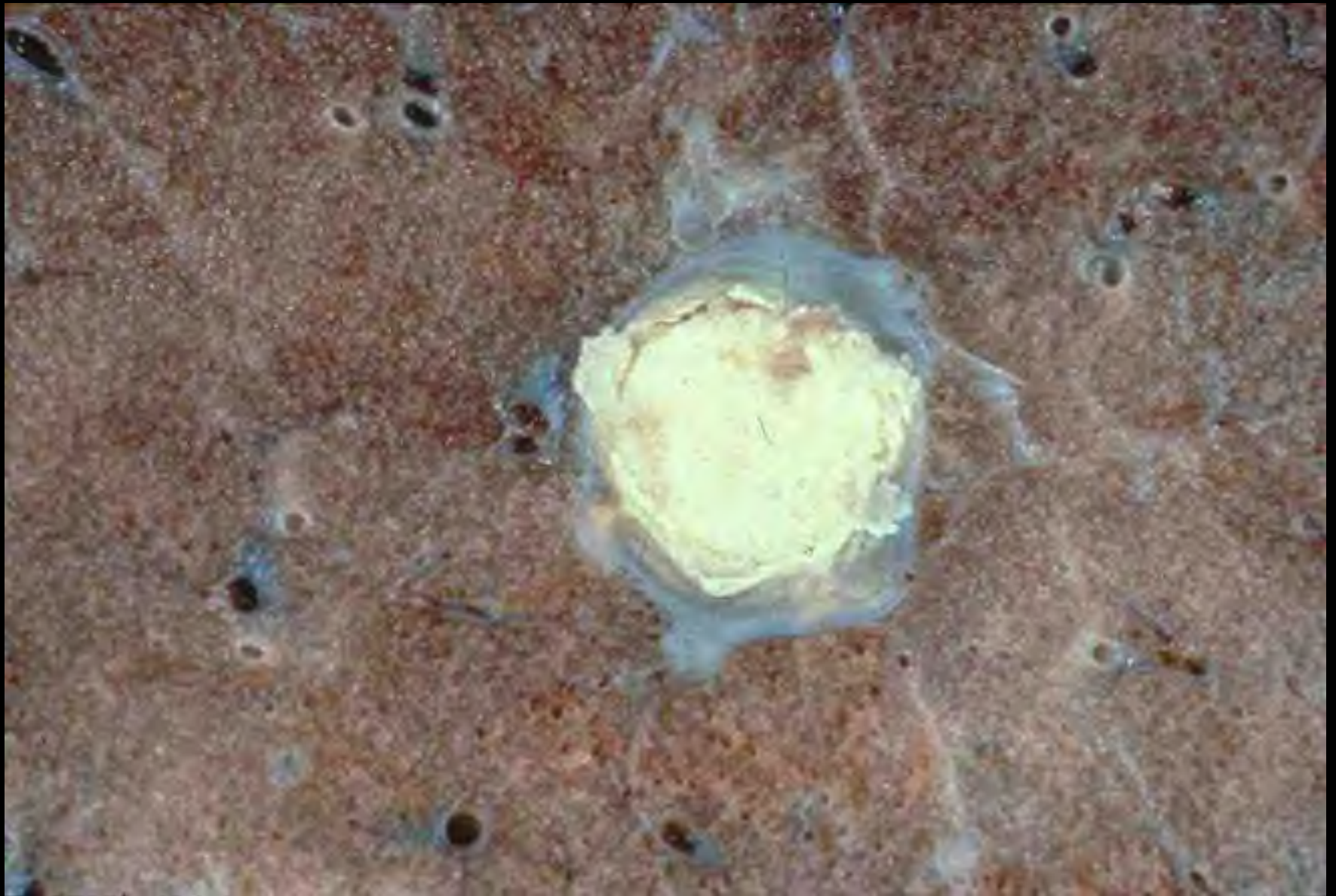
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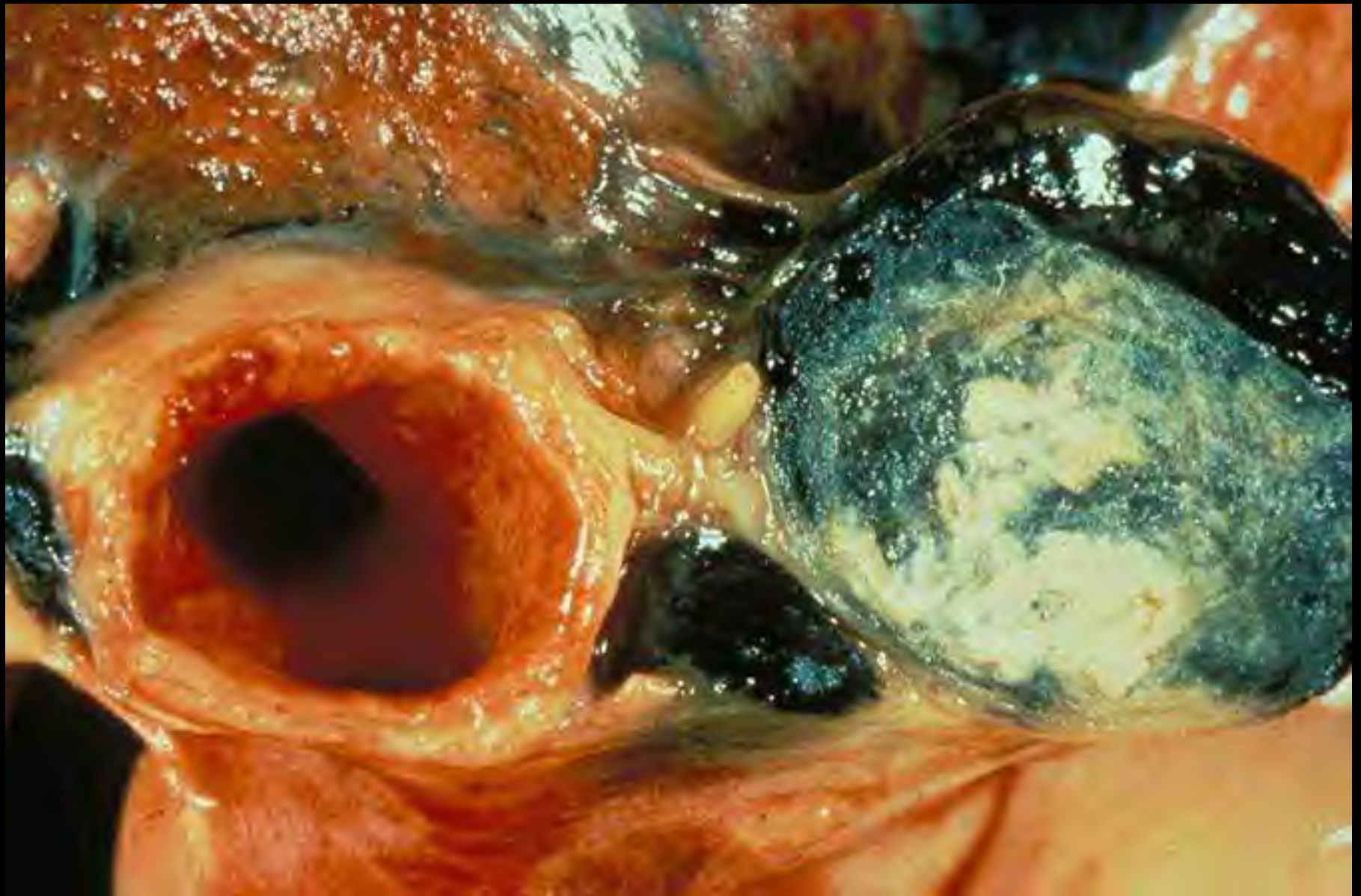


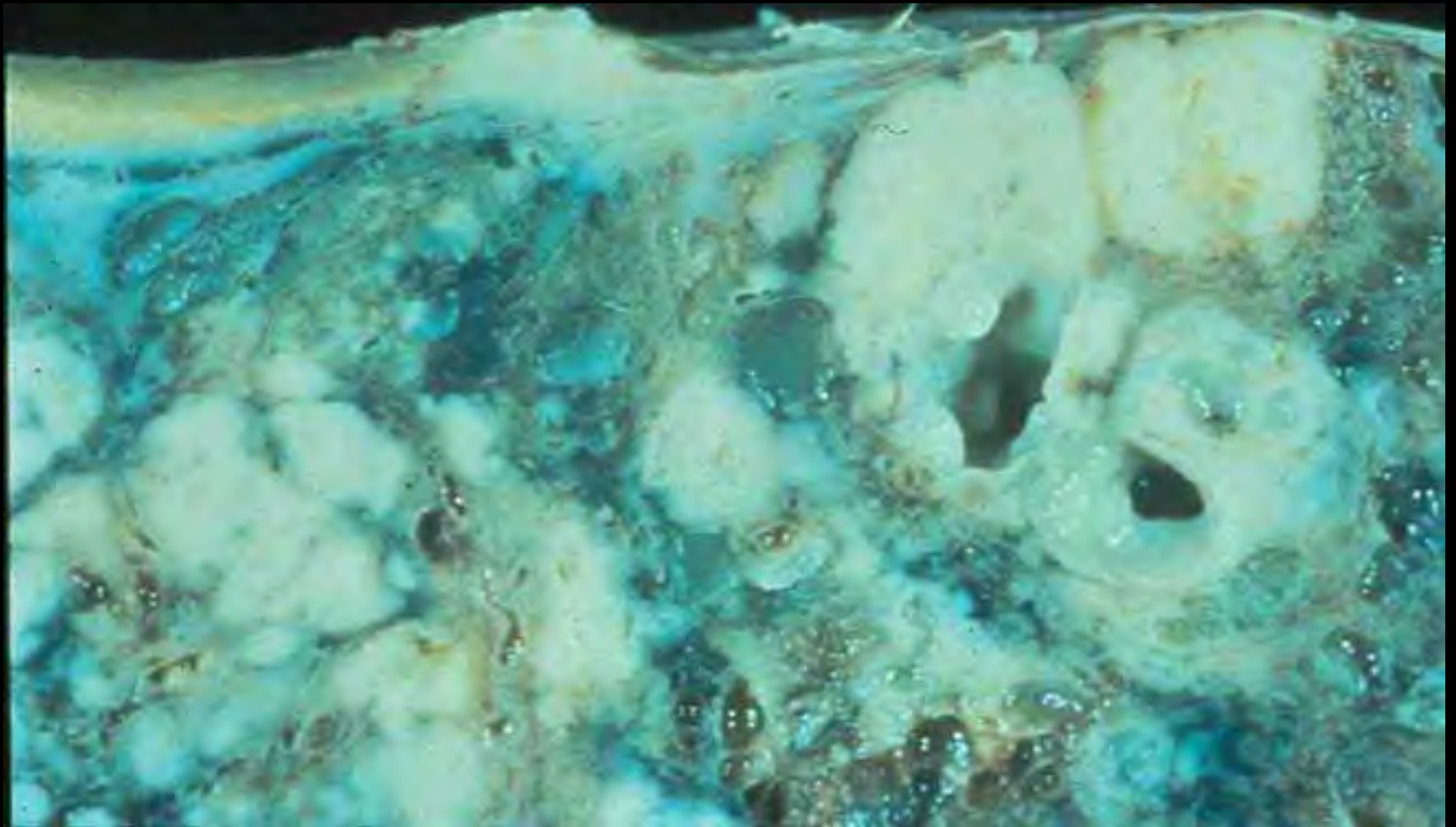


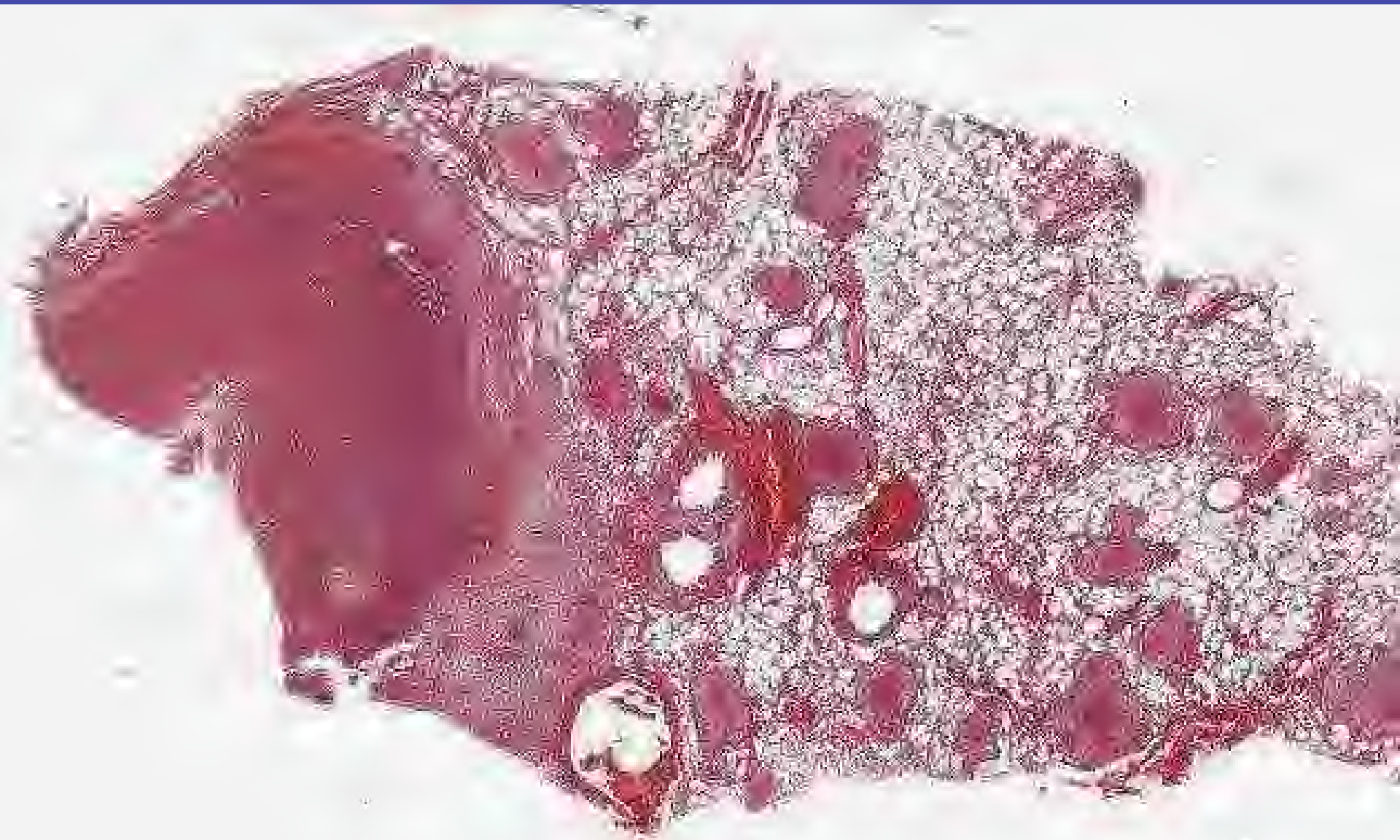


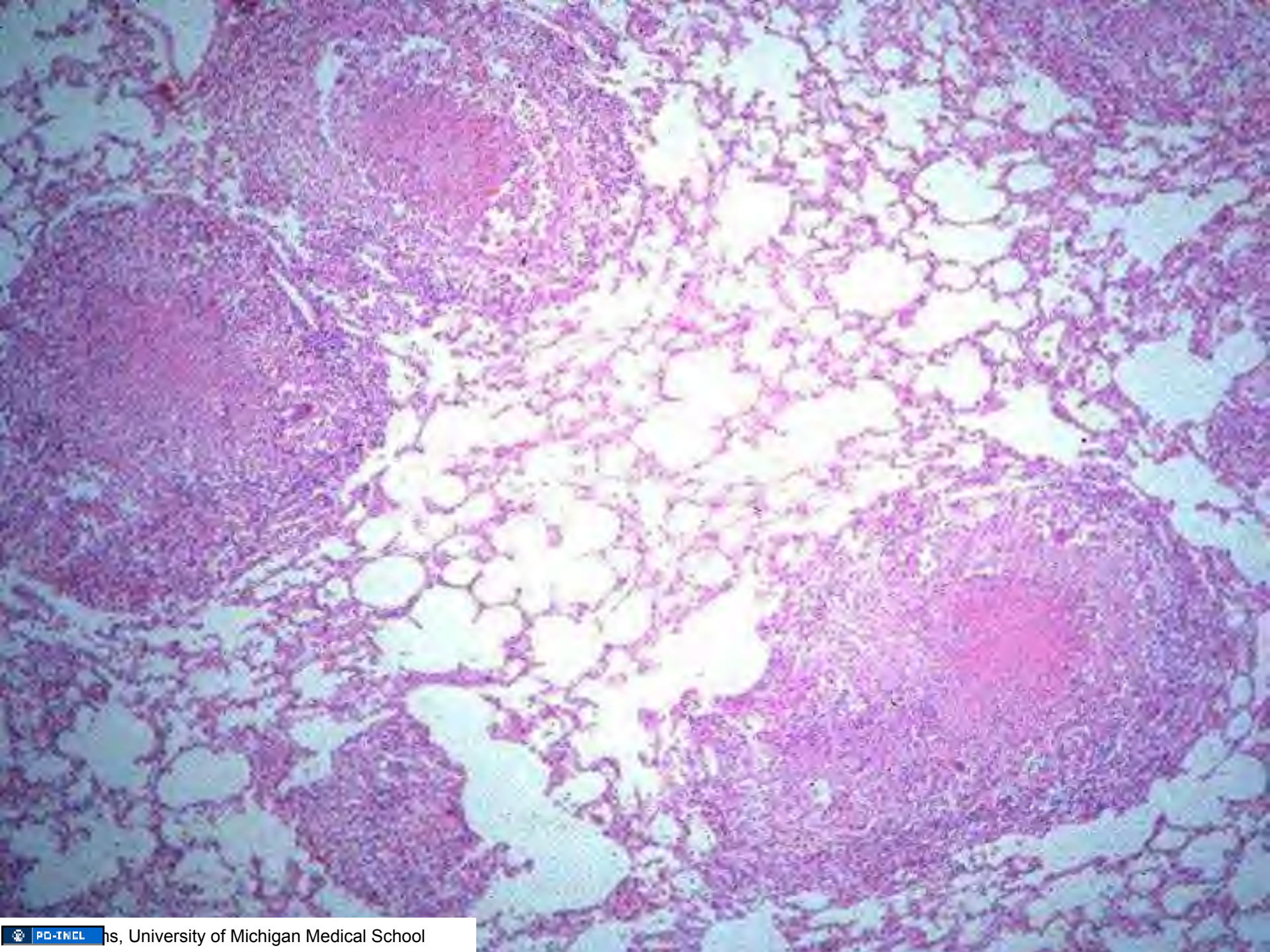


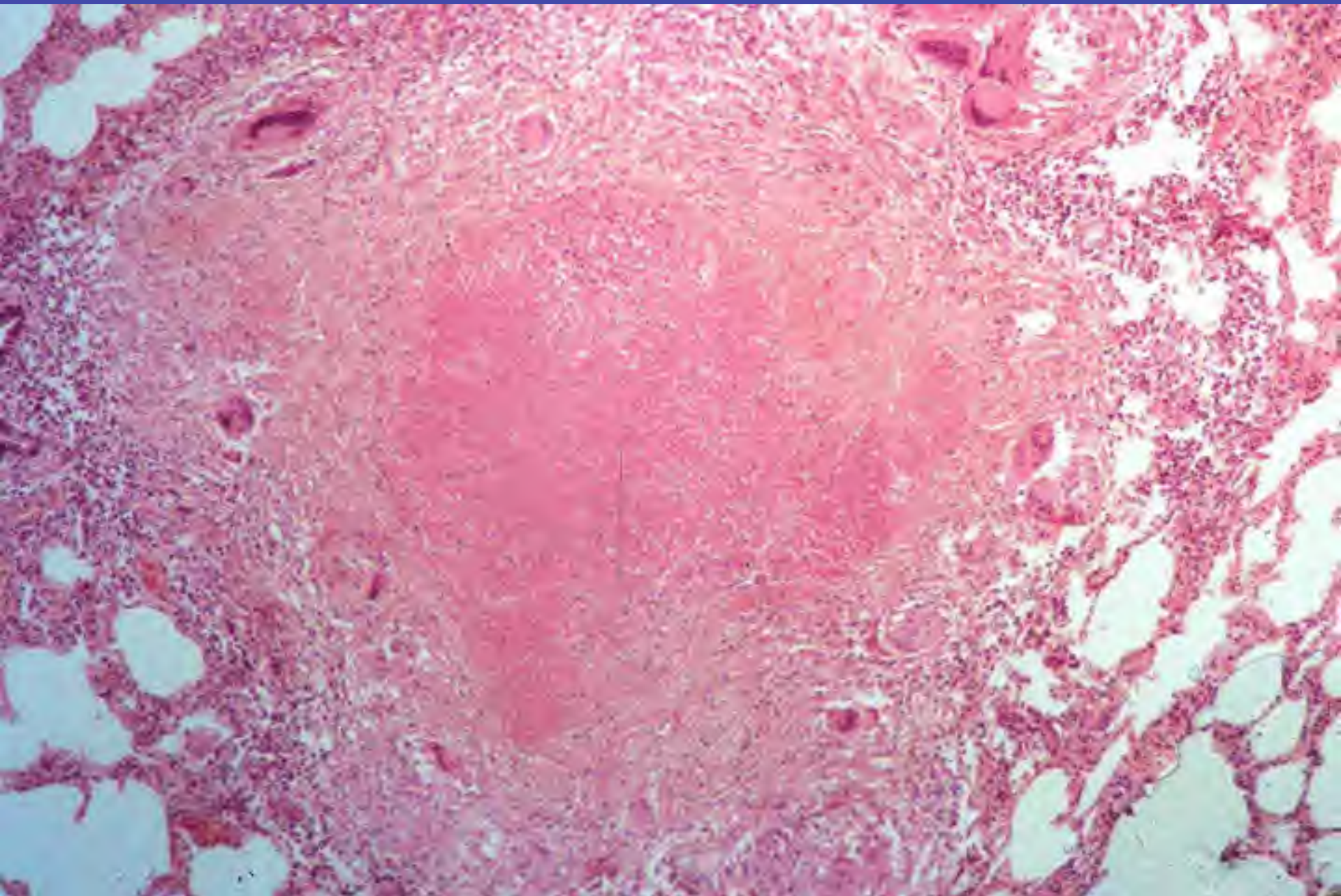


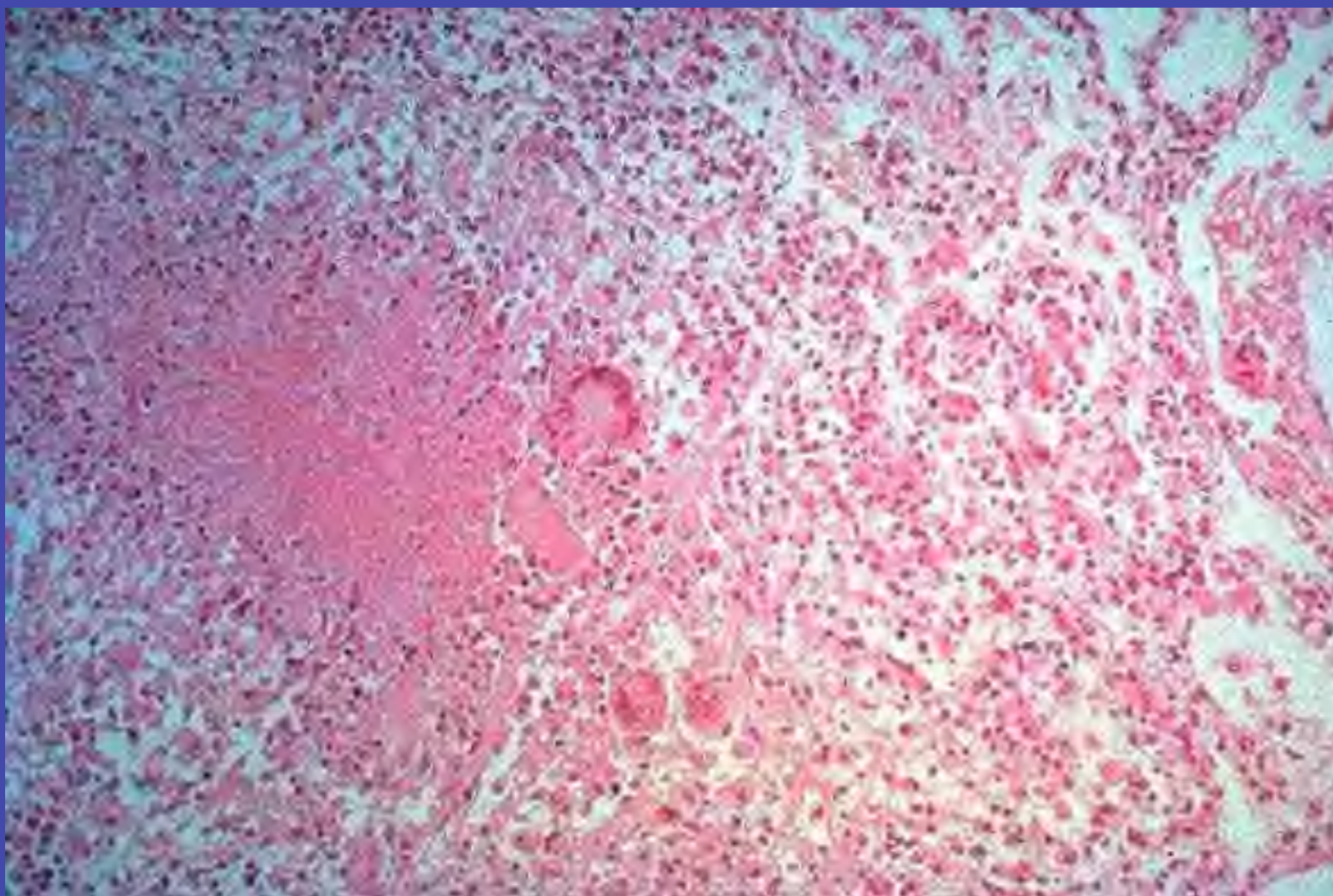


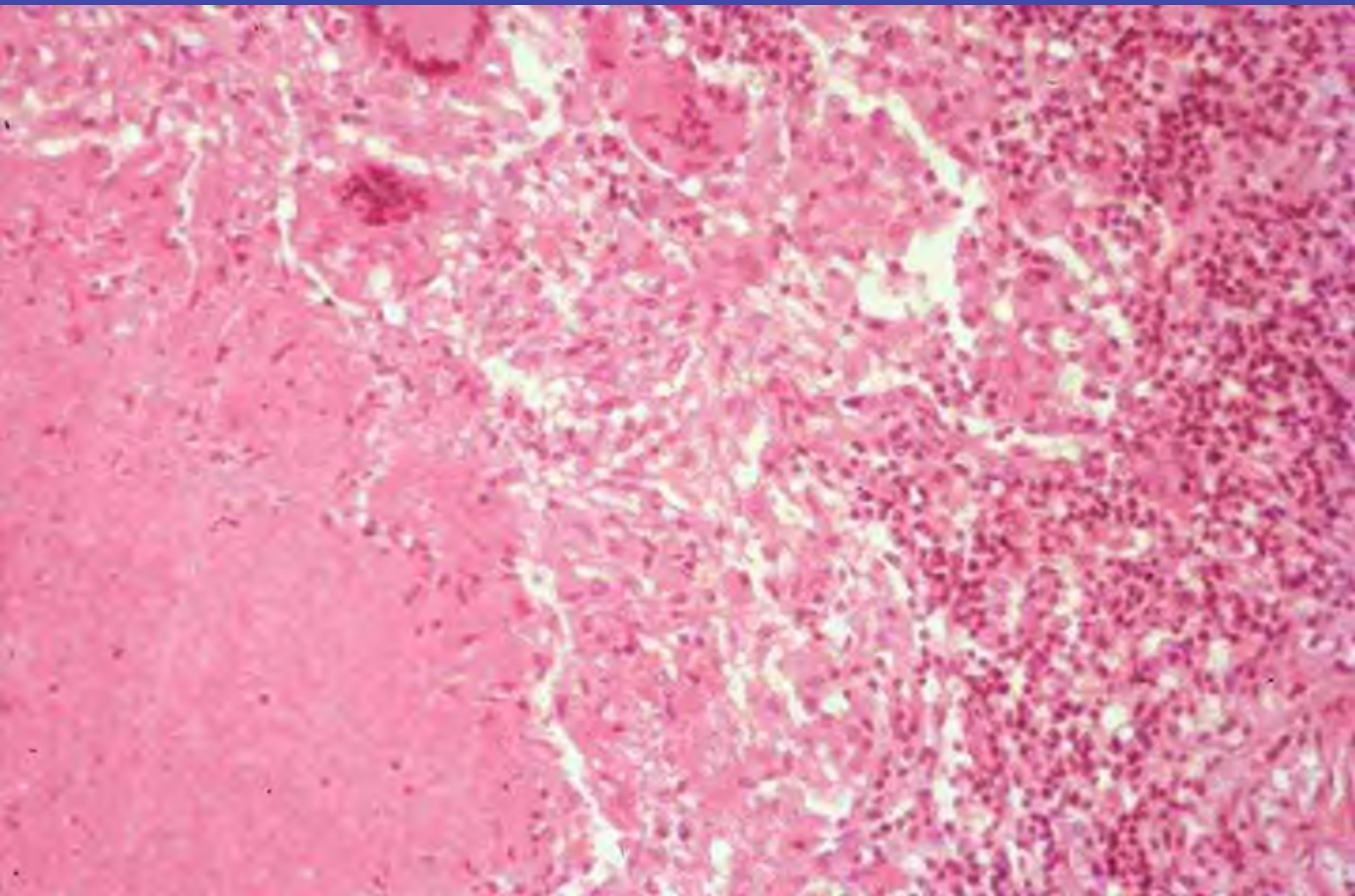


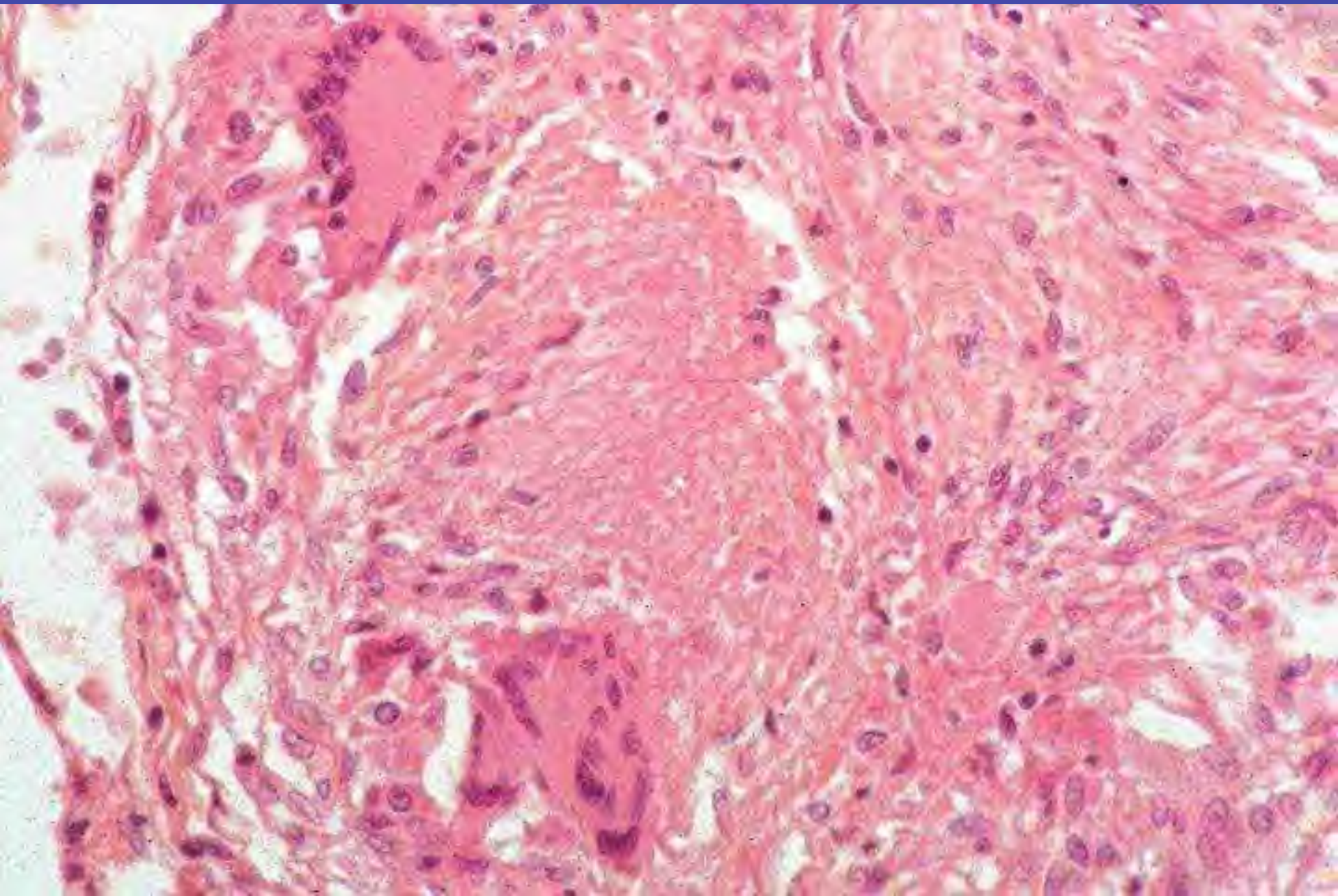


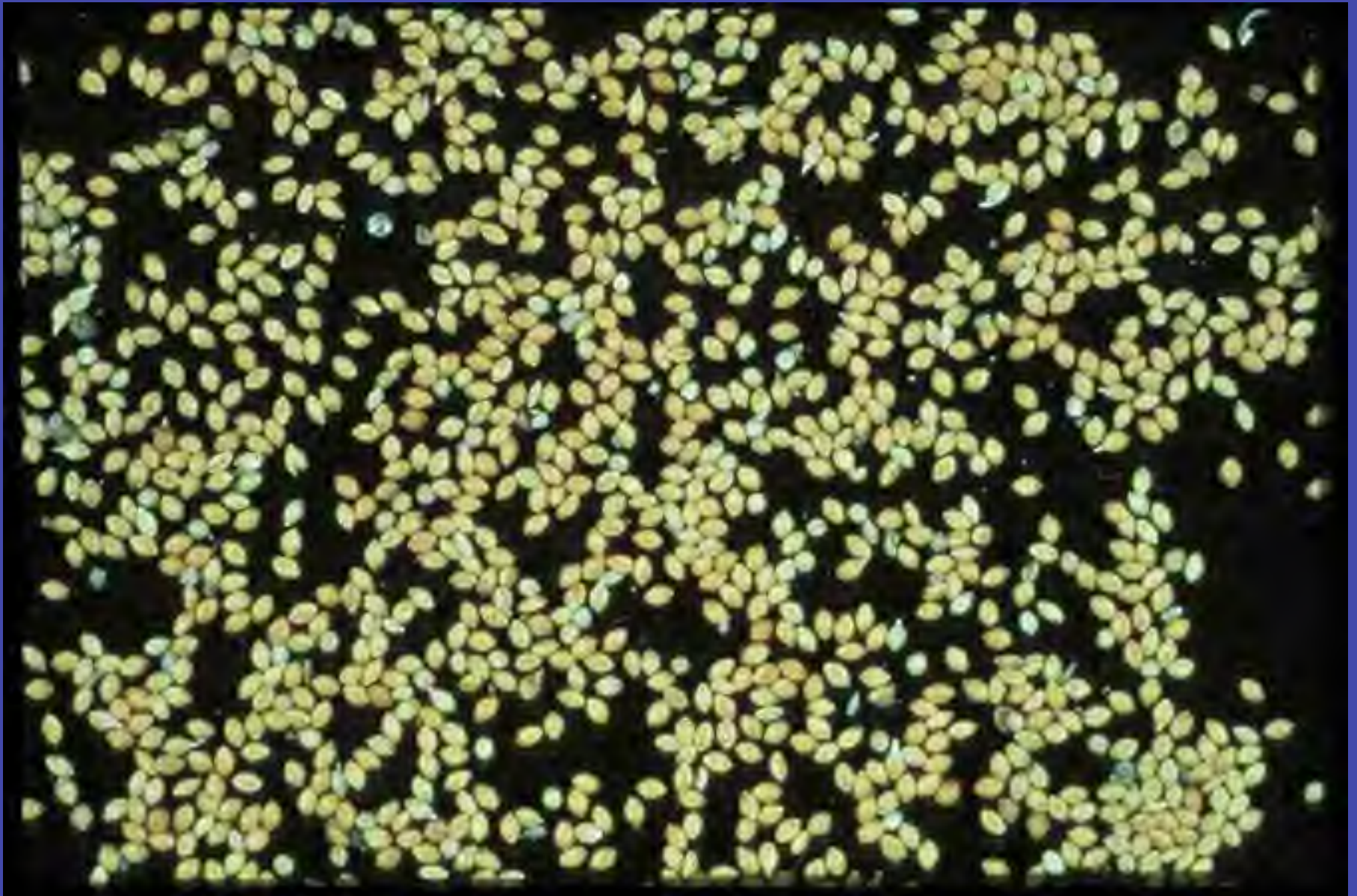


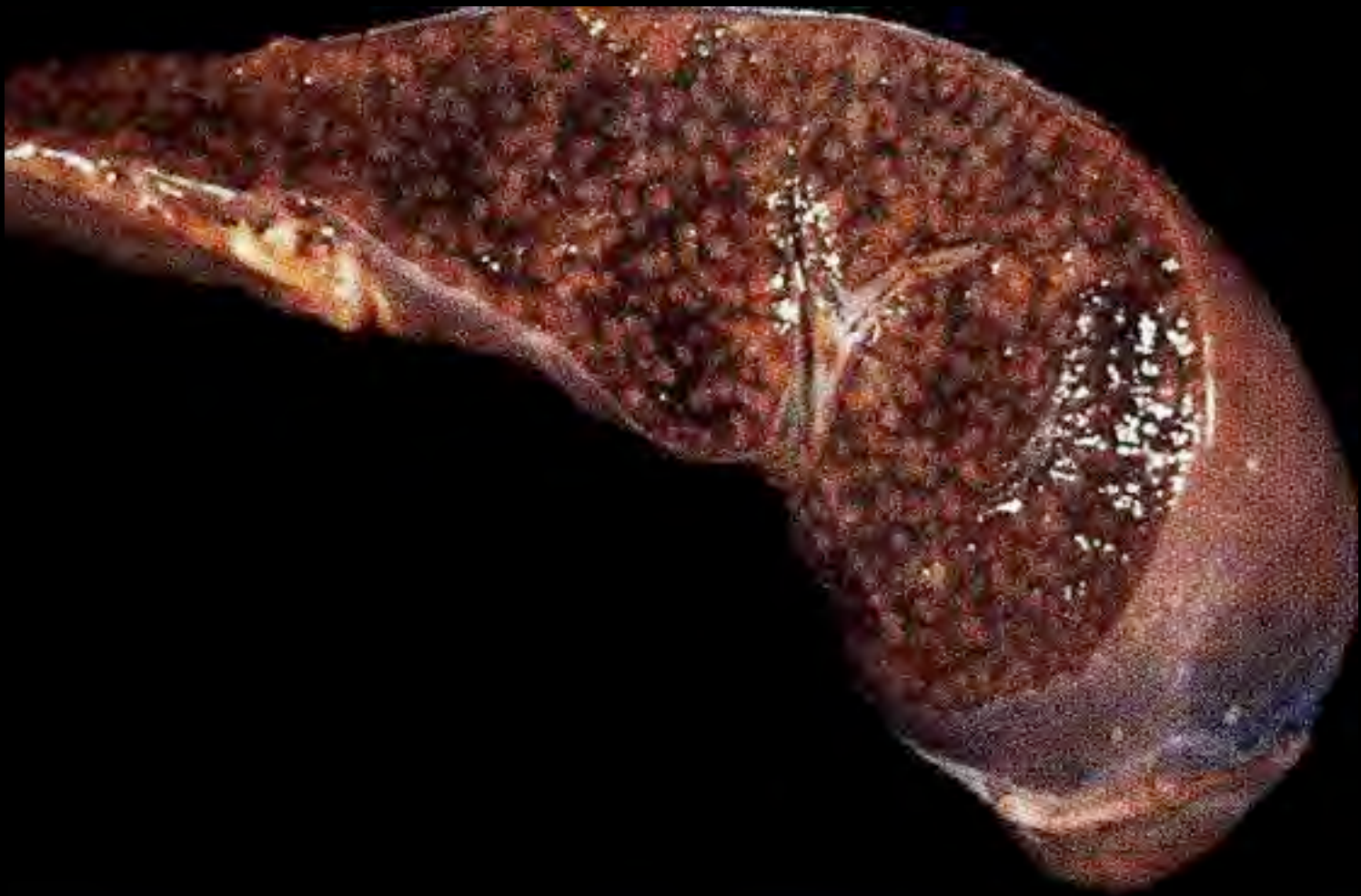








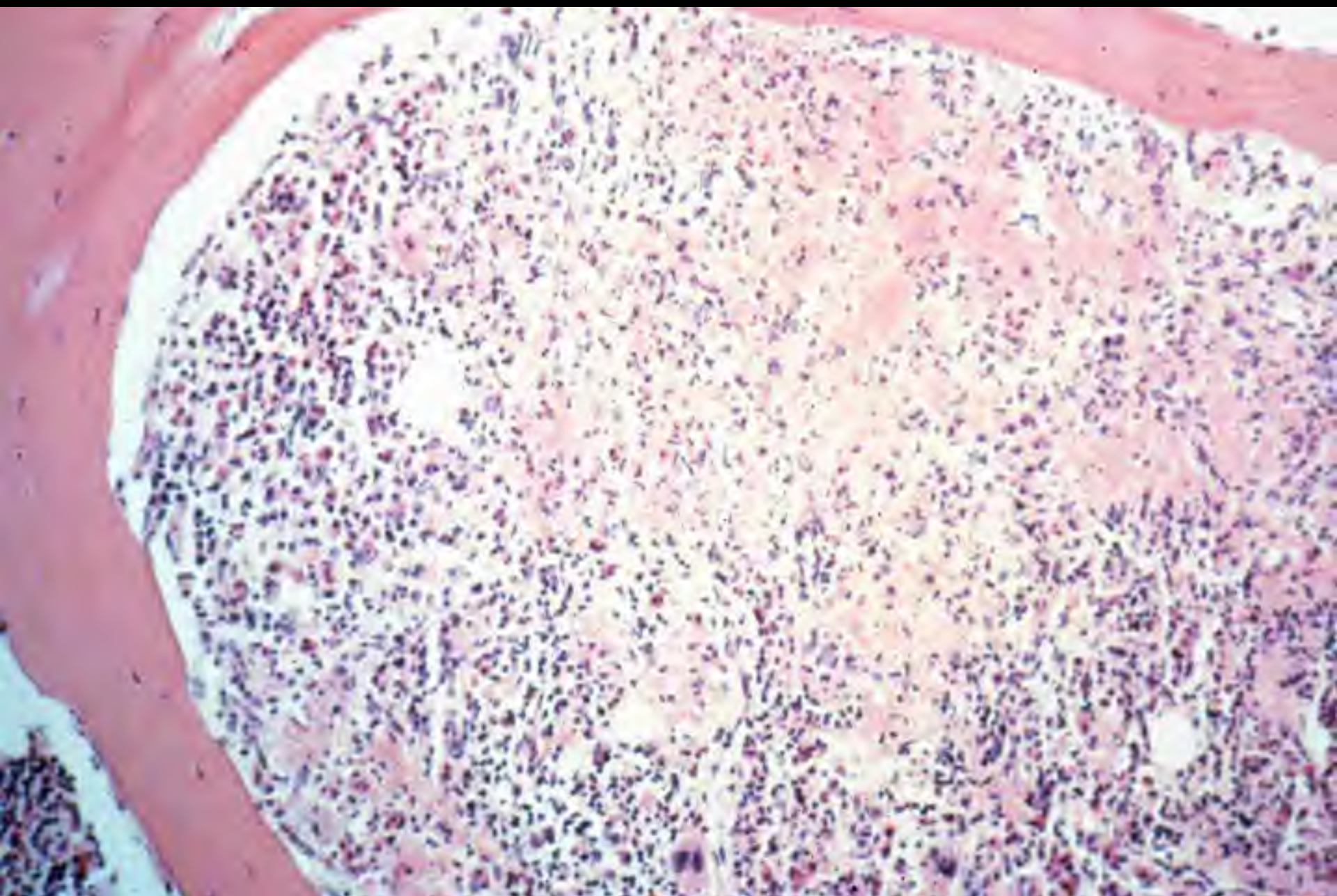






PD-INCL

Source Undetermined



M-2 Respiratory Laboratory - 1

63 Aspiration pneumonia

26 Tuberculosis

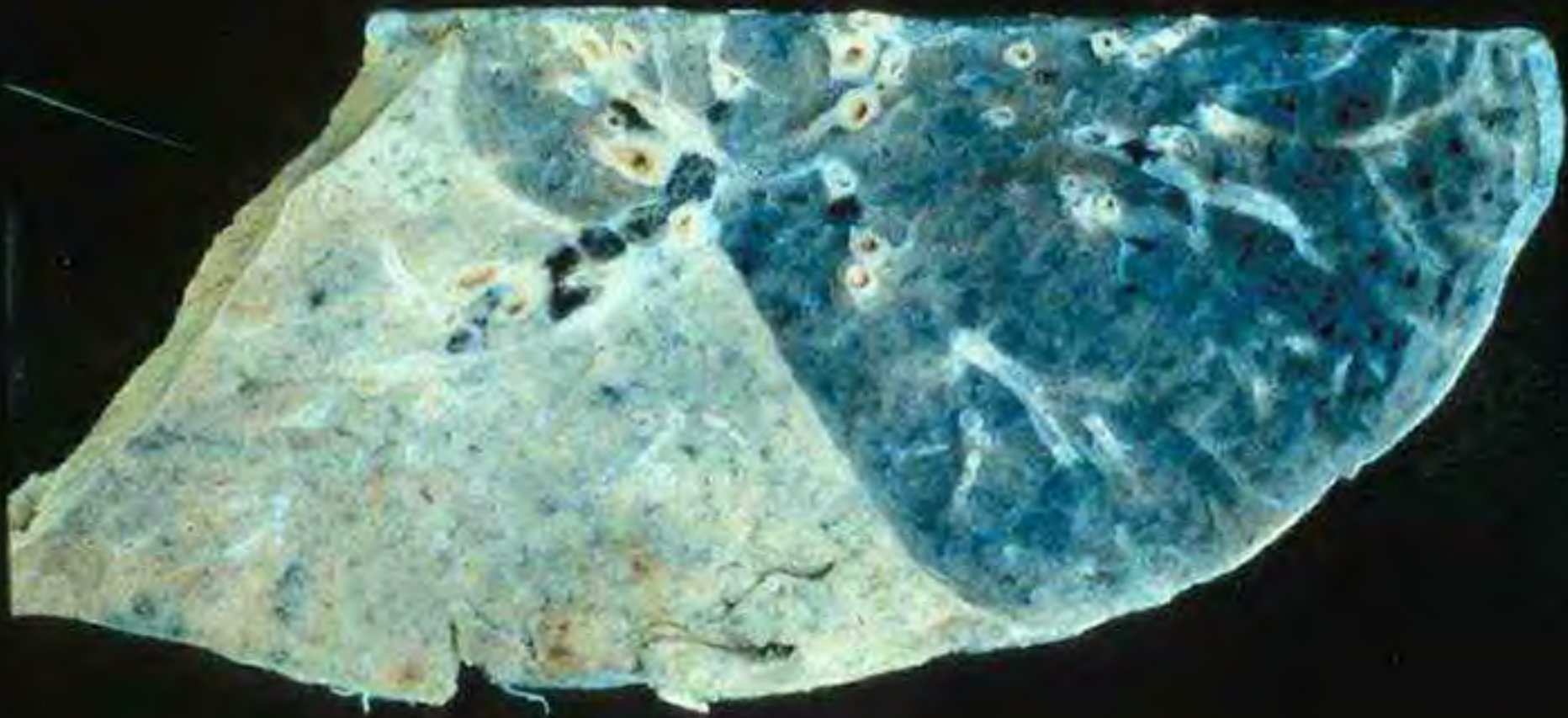
64 Pneumonia

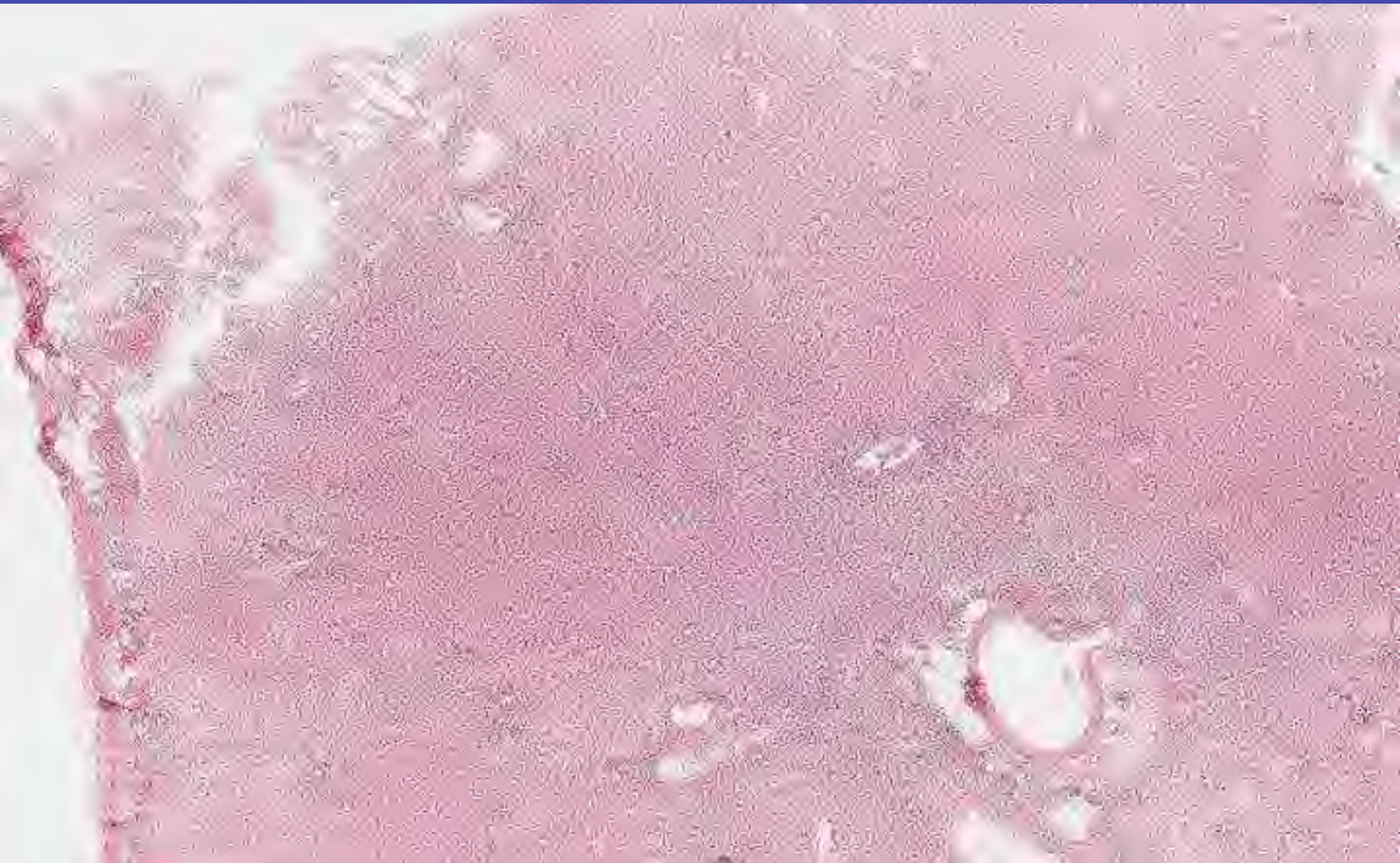
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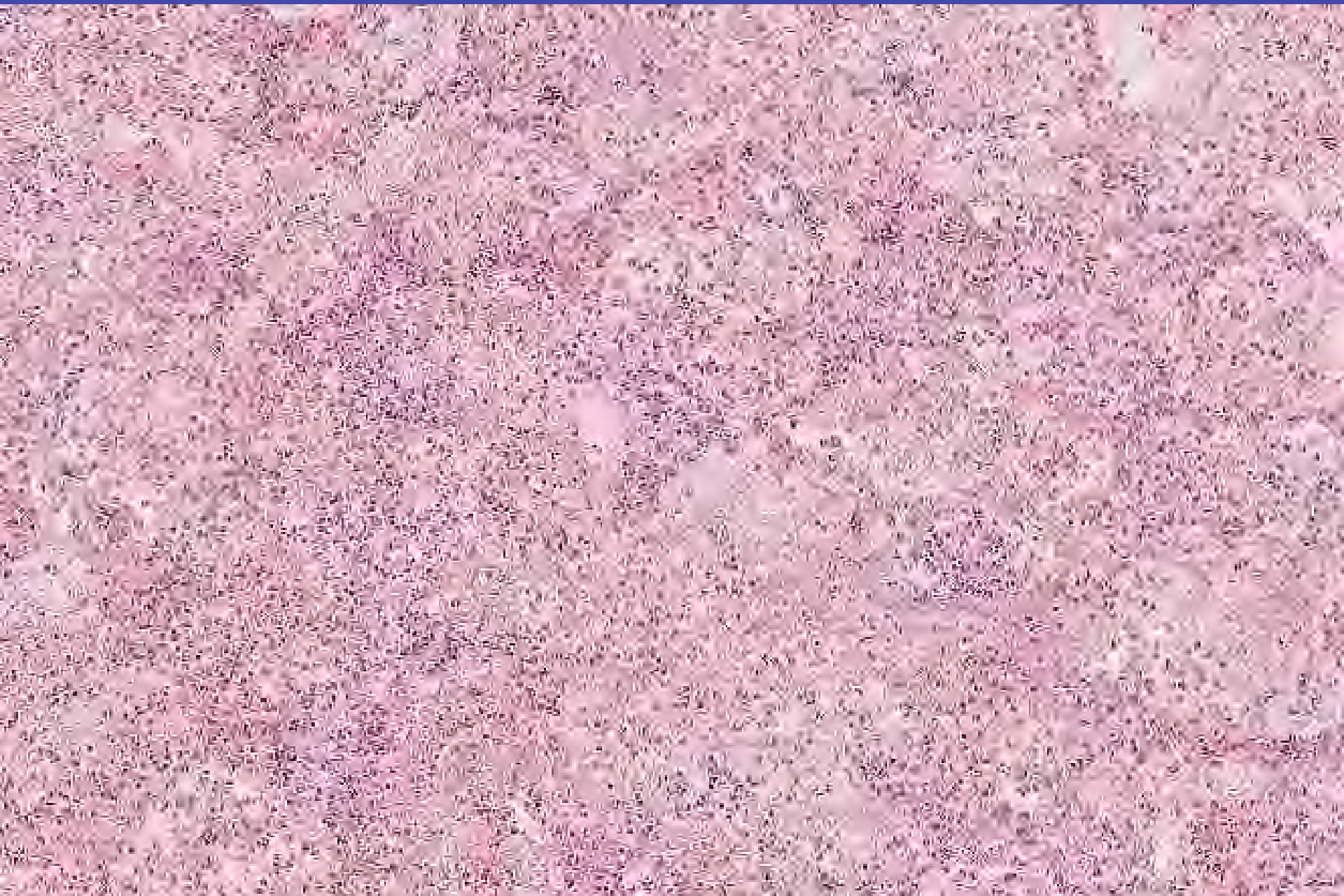
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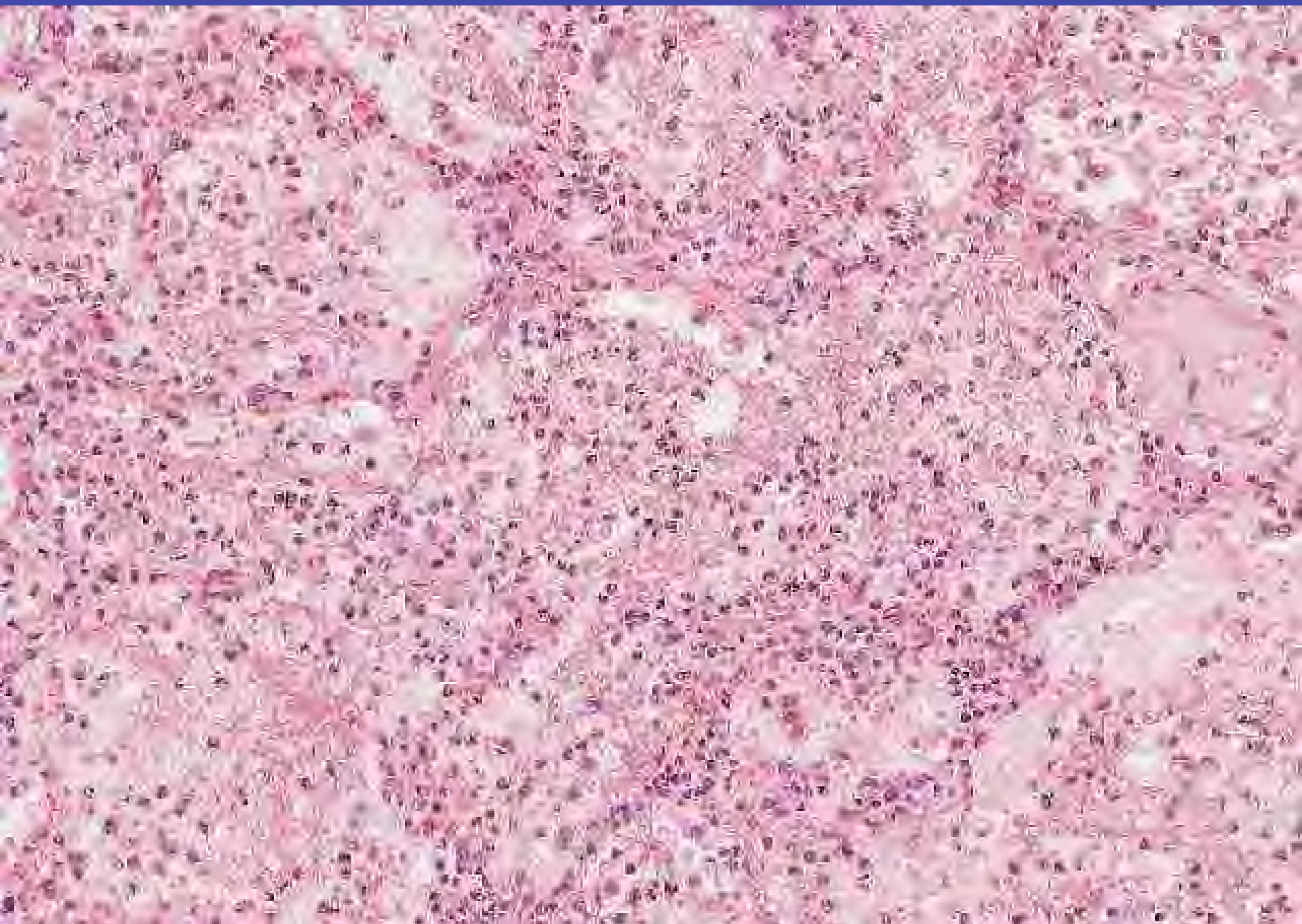


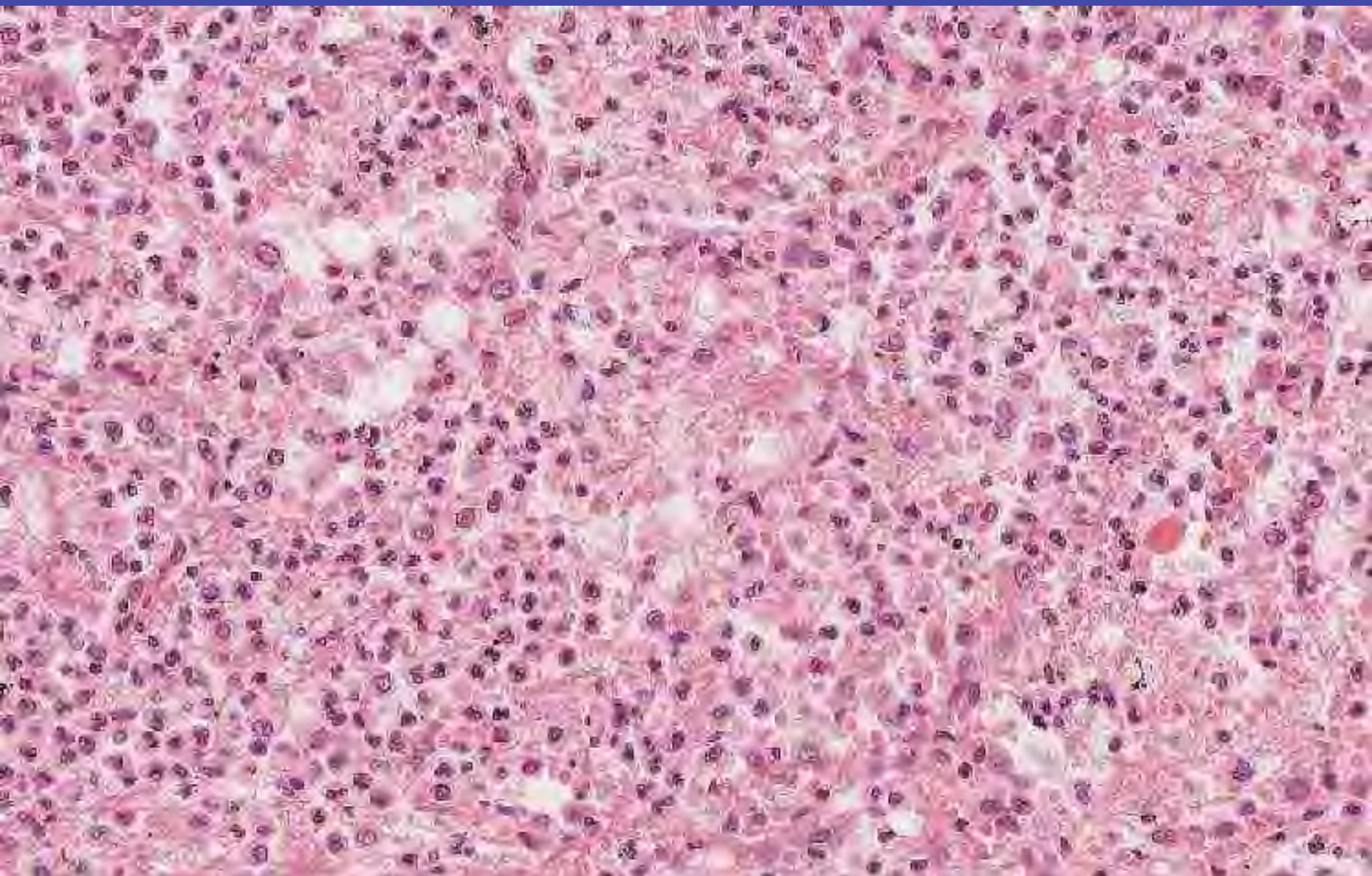


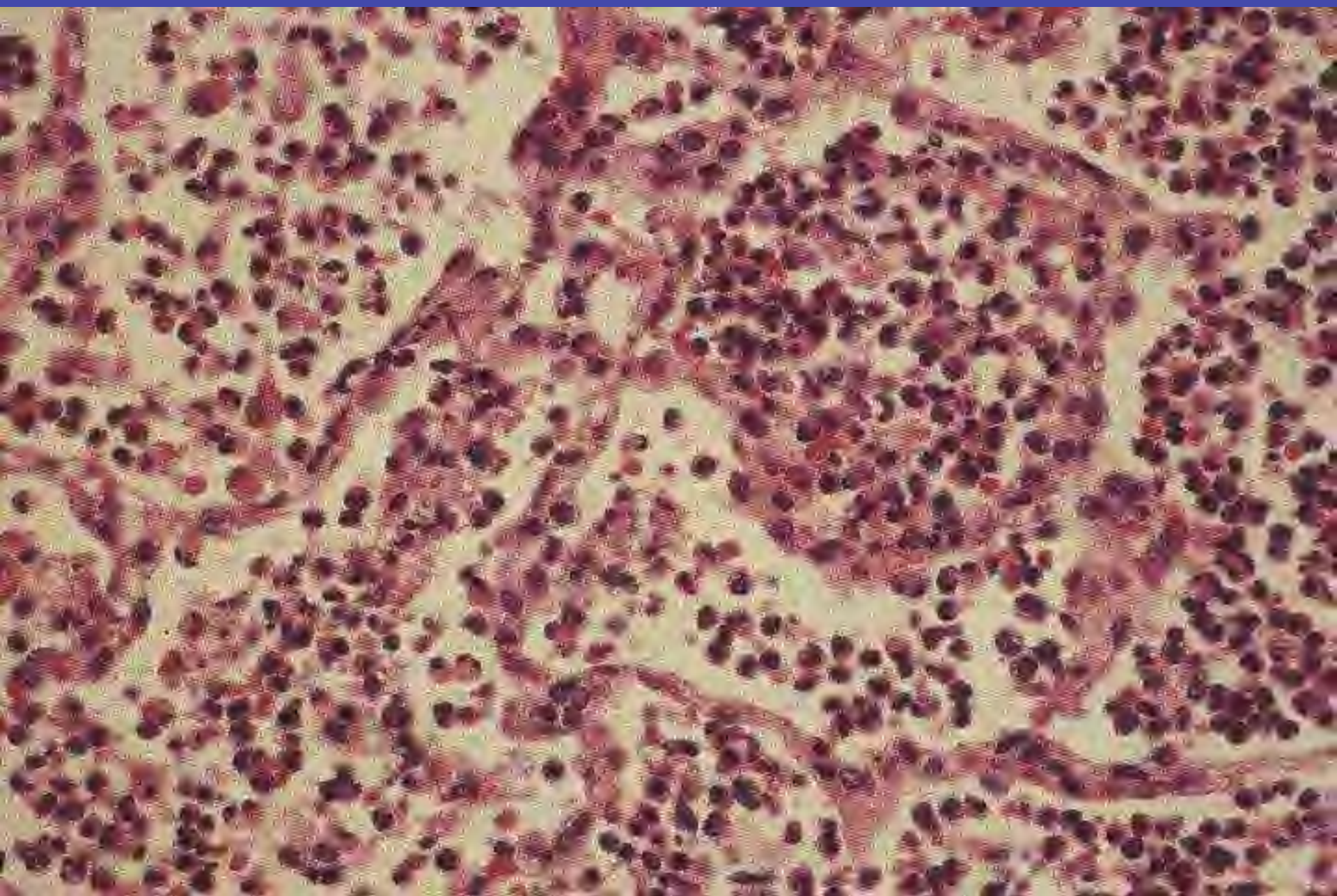


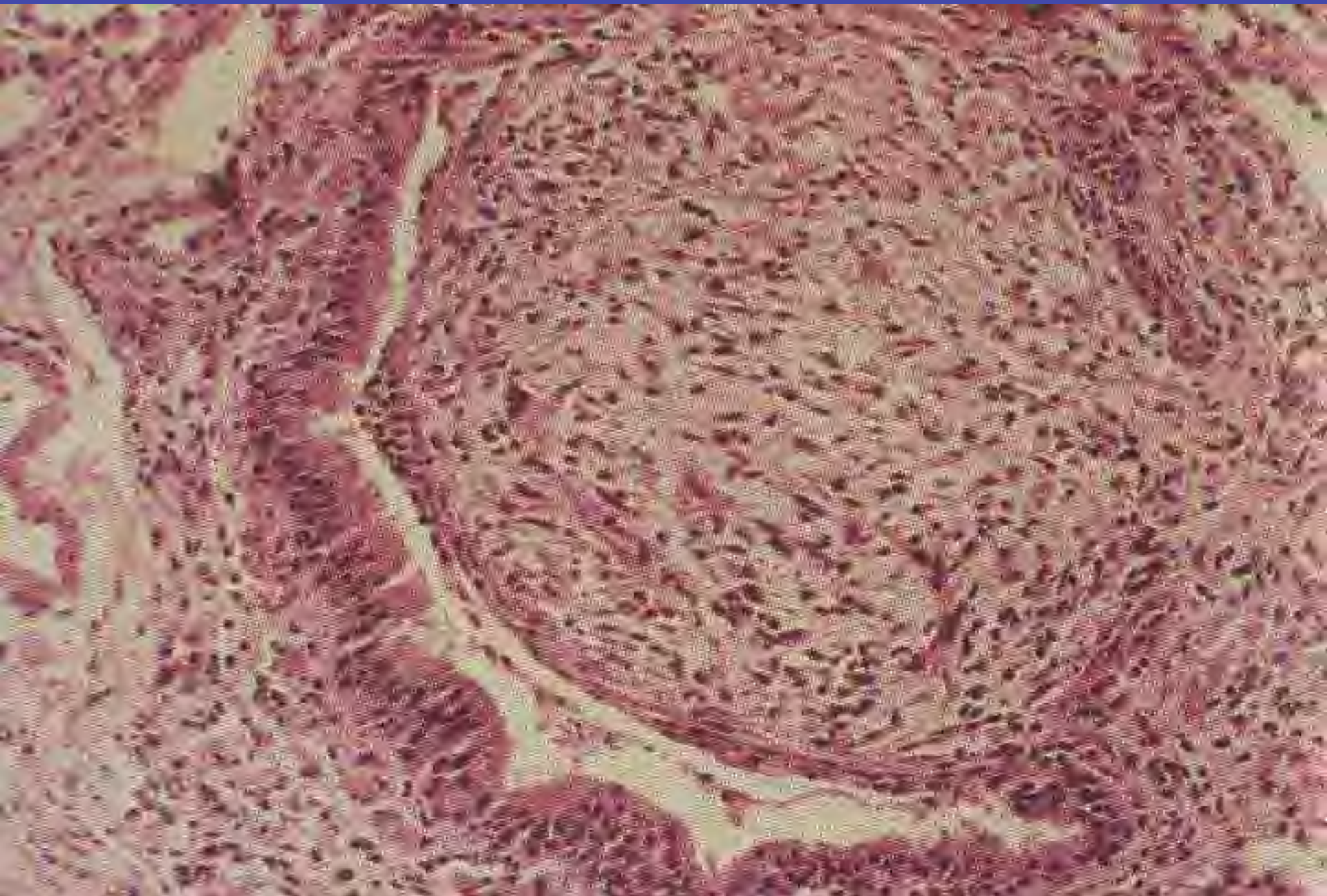


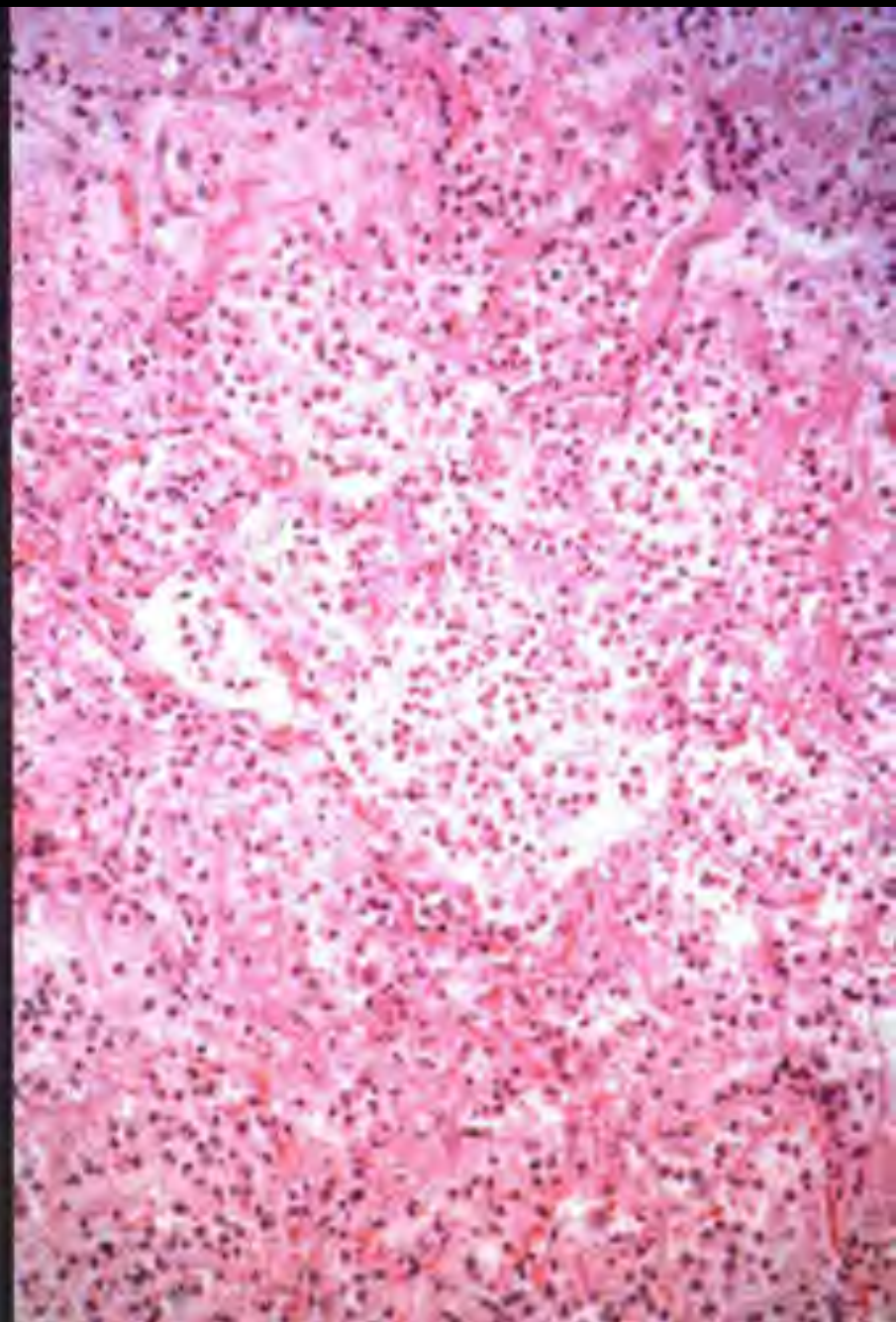
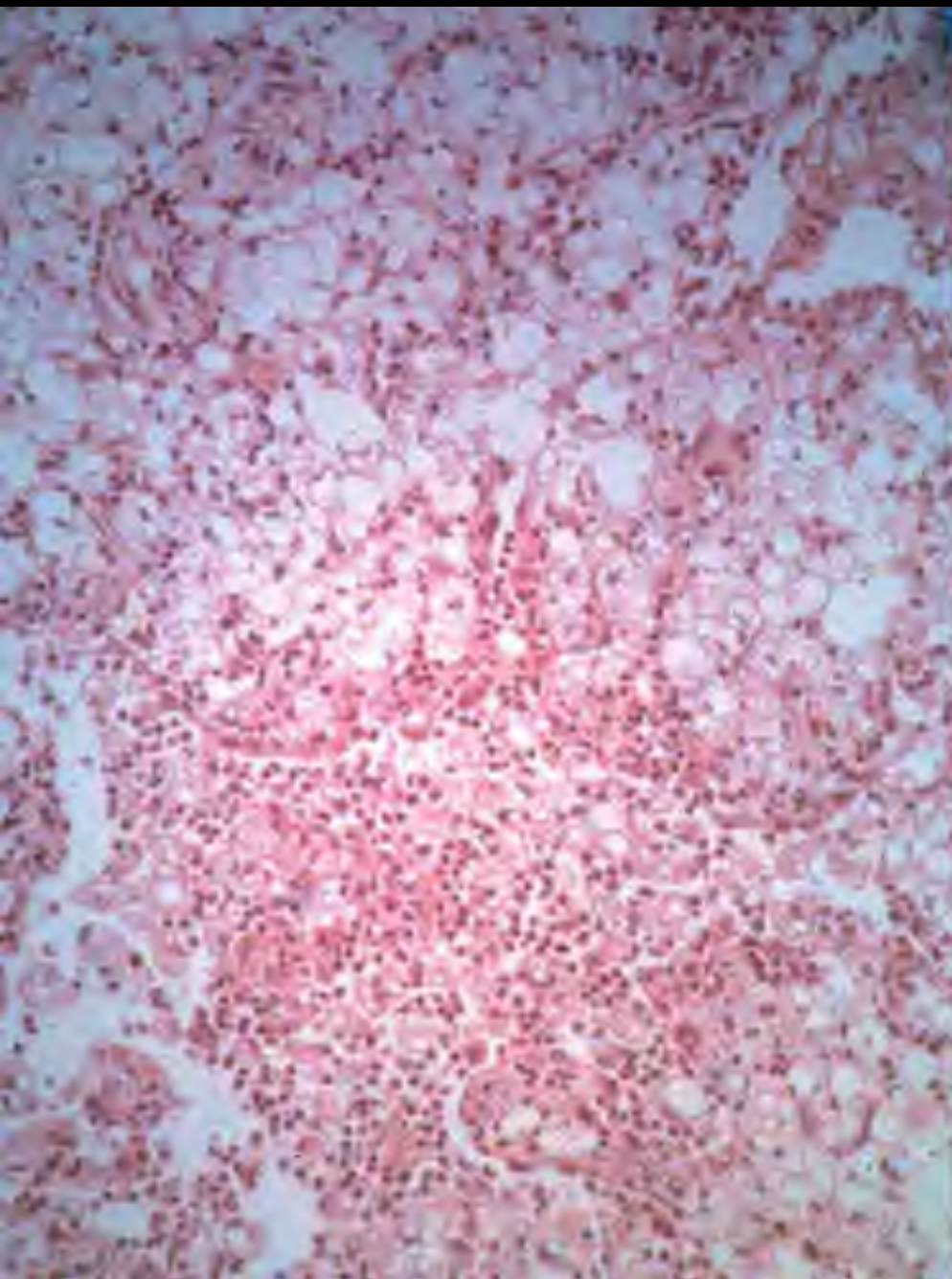












M-2 Respiratory Laboratory - 1

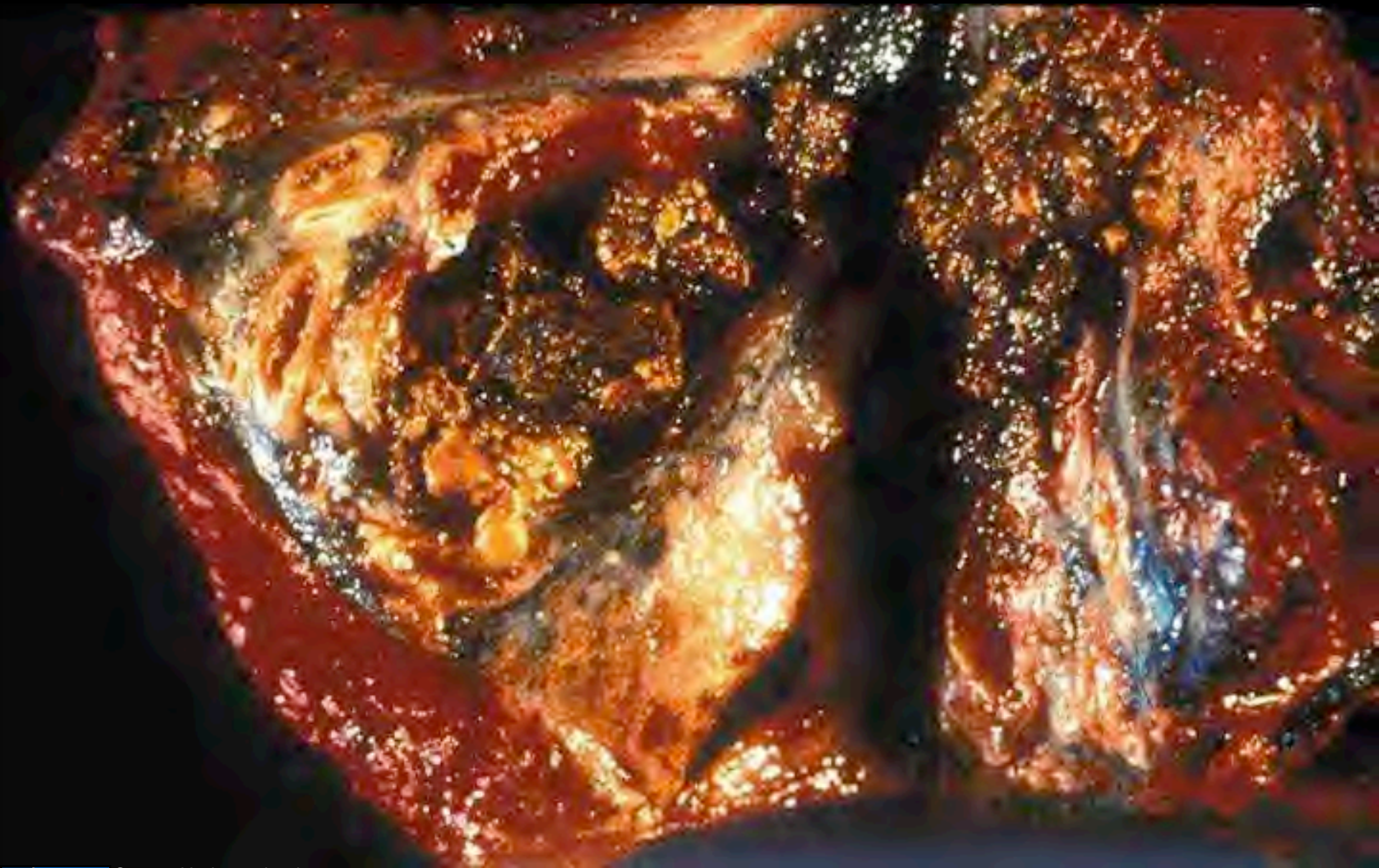
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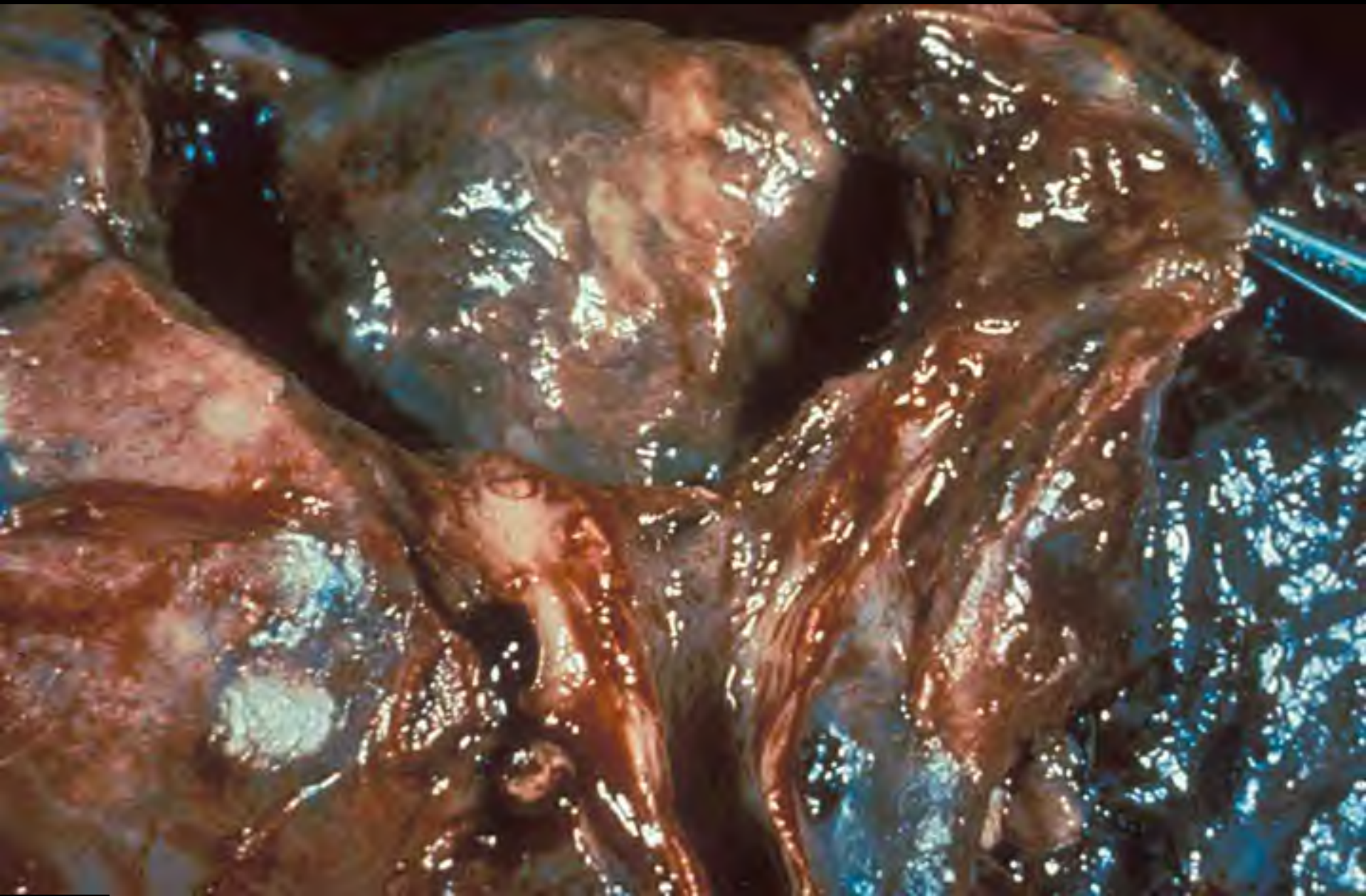
26 Tuberculosis

64 Pneumonia

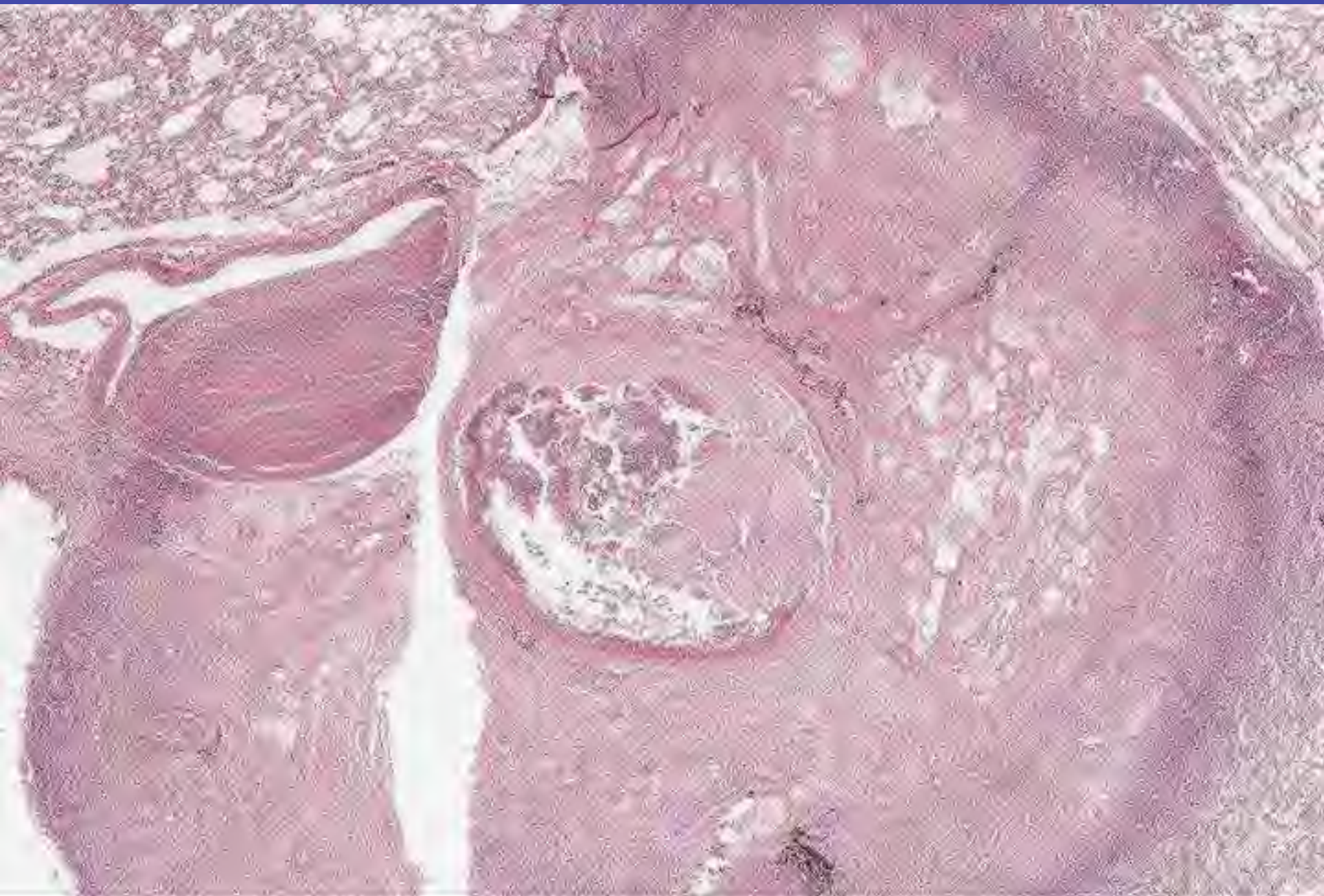
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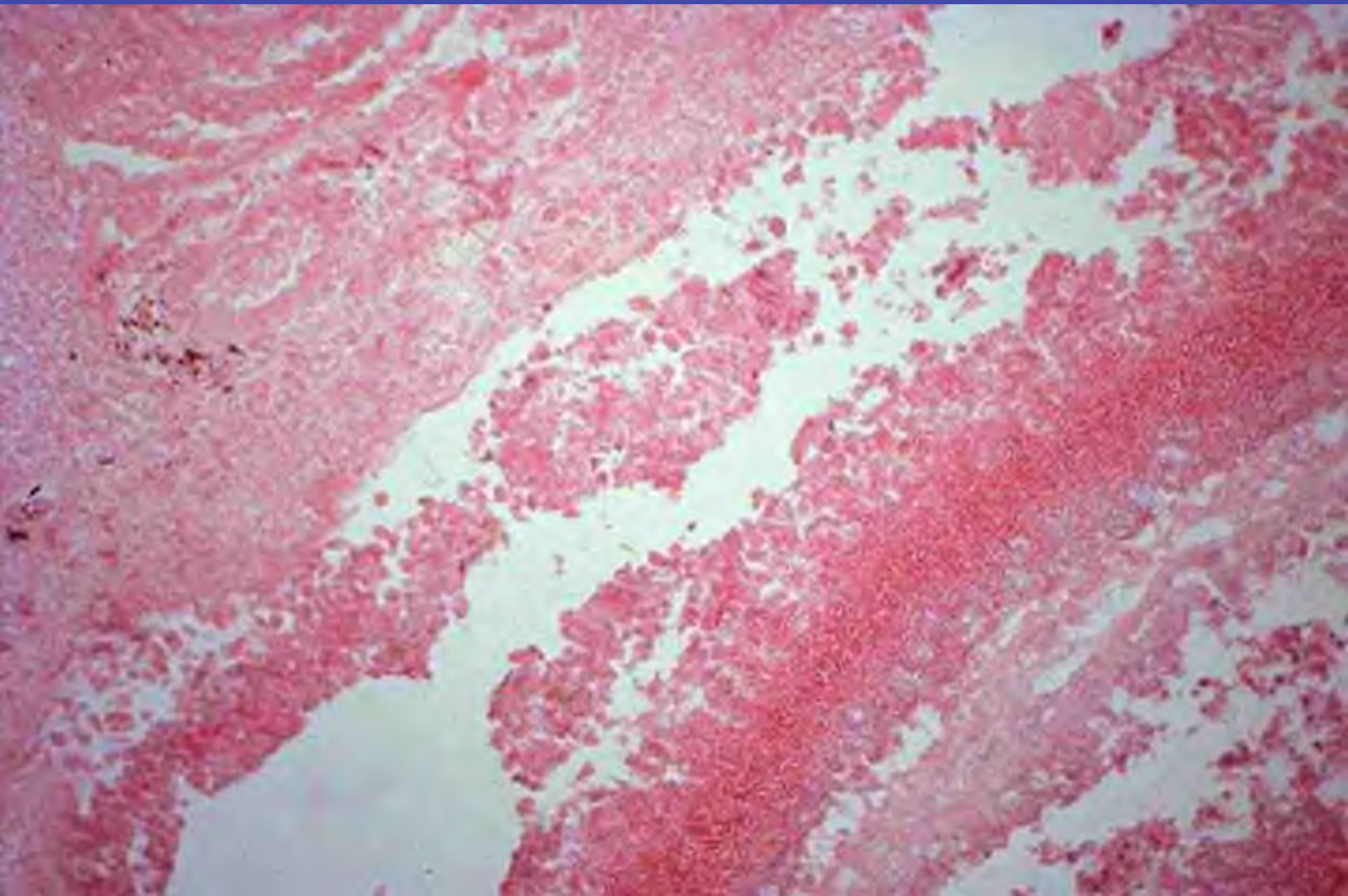
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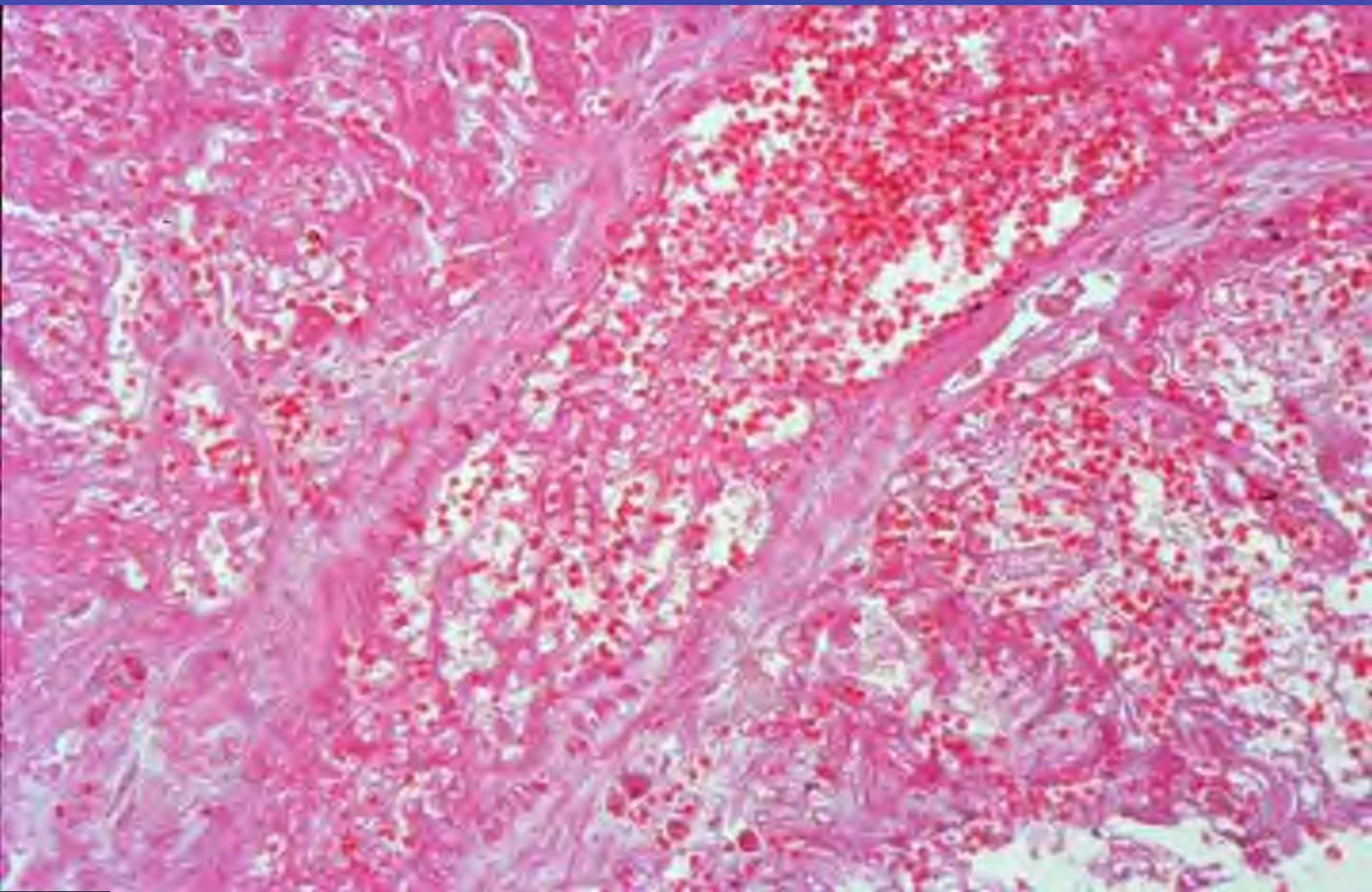


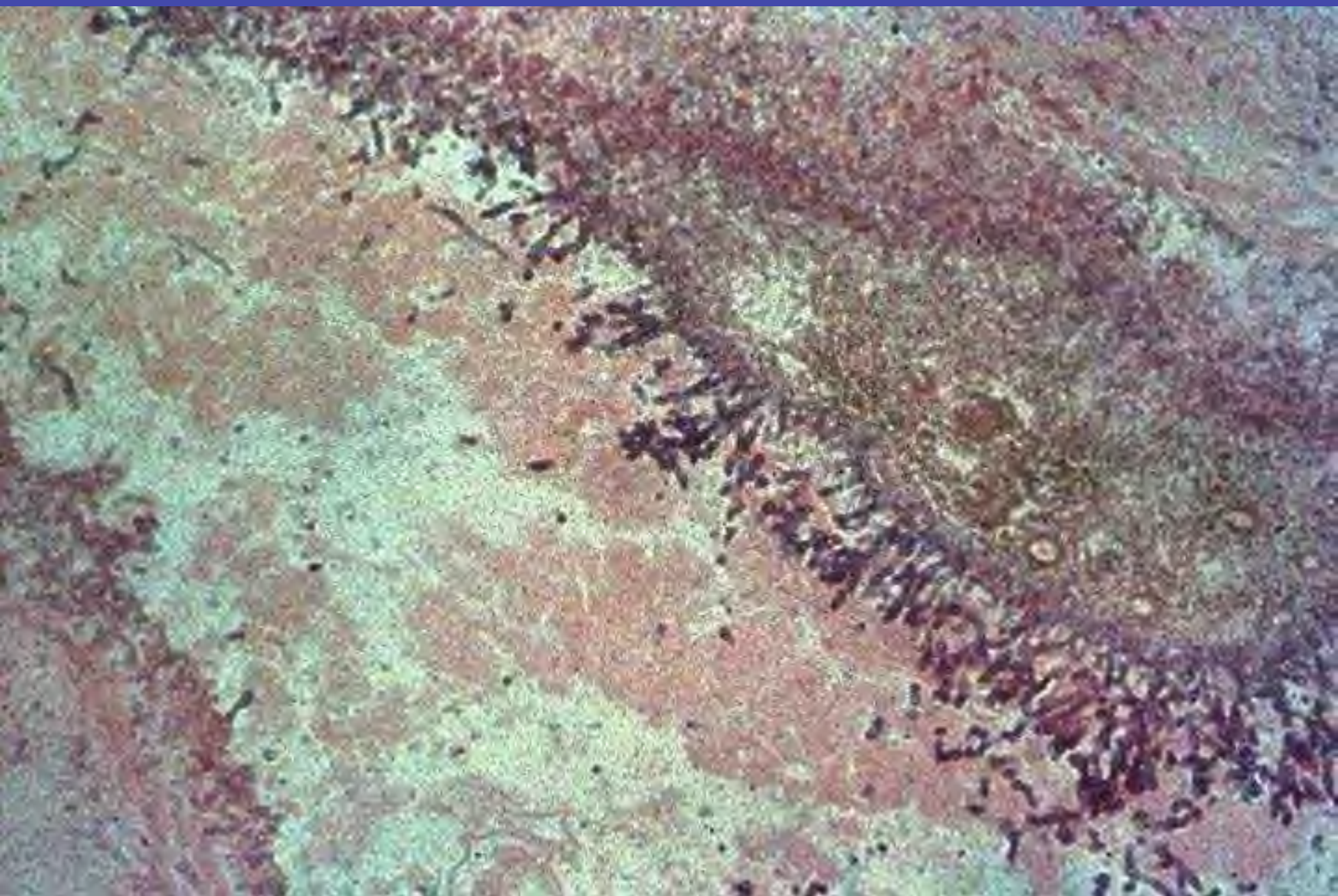


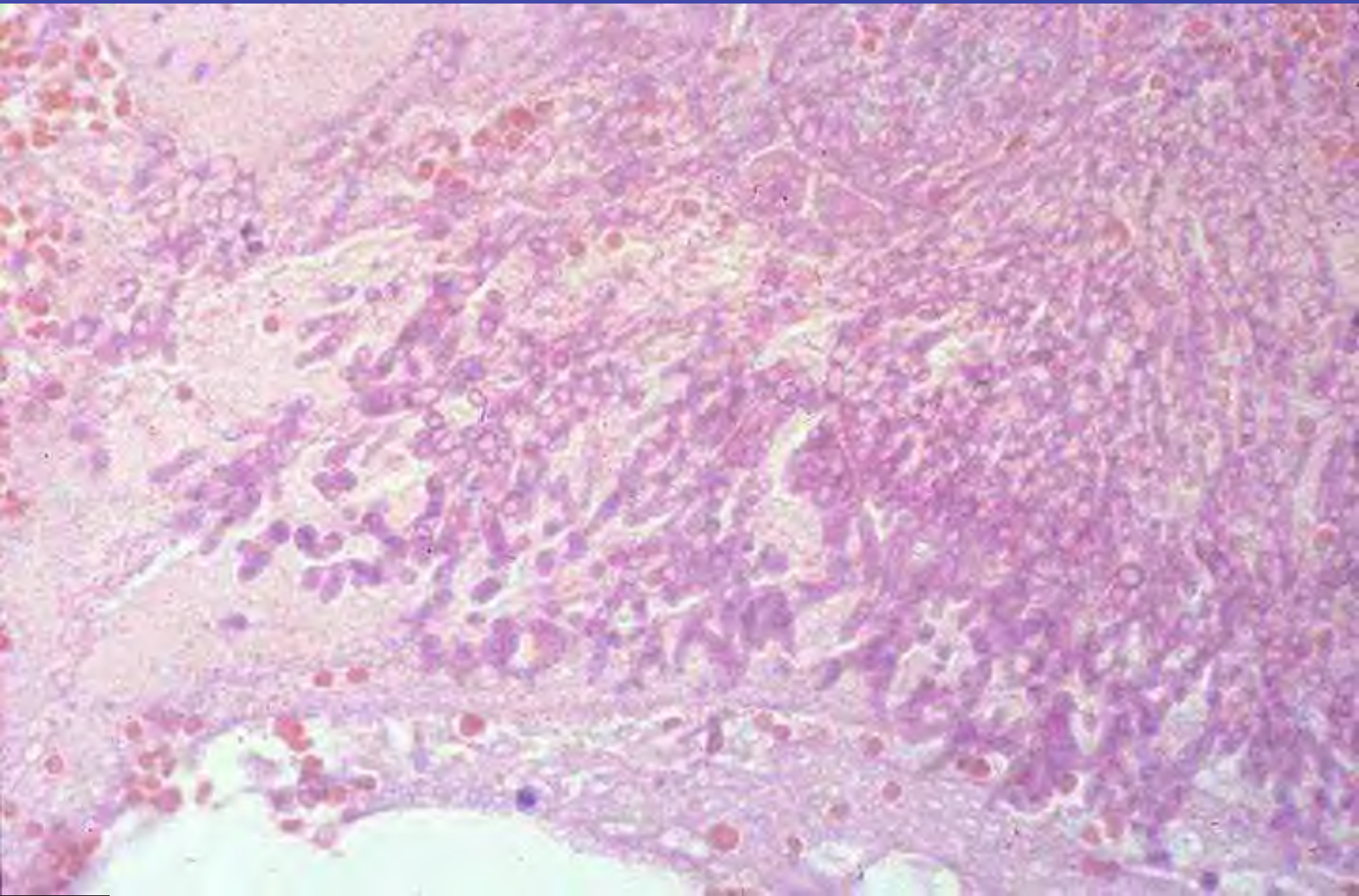


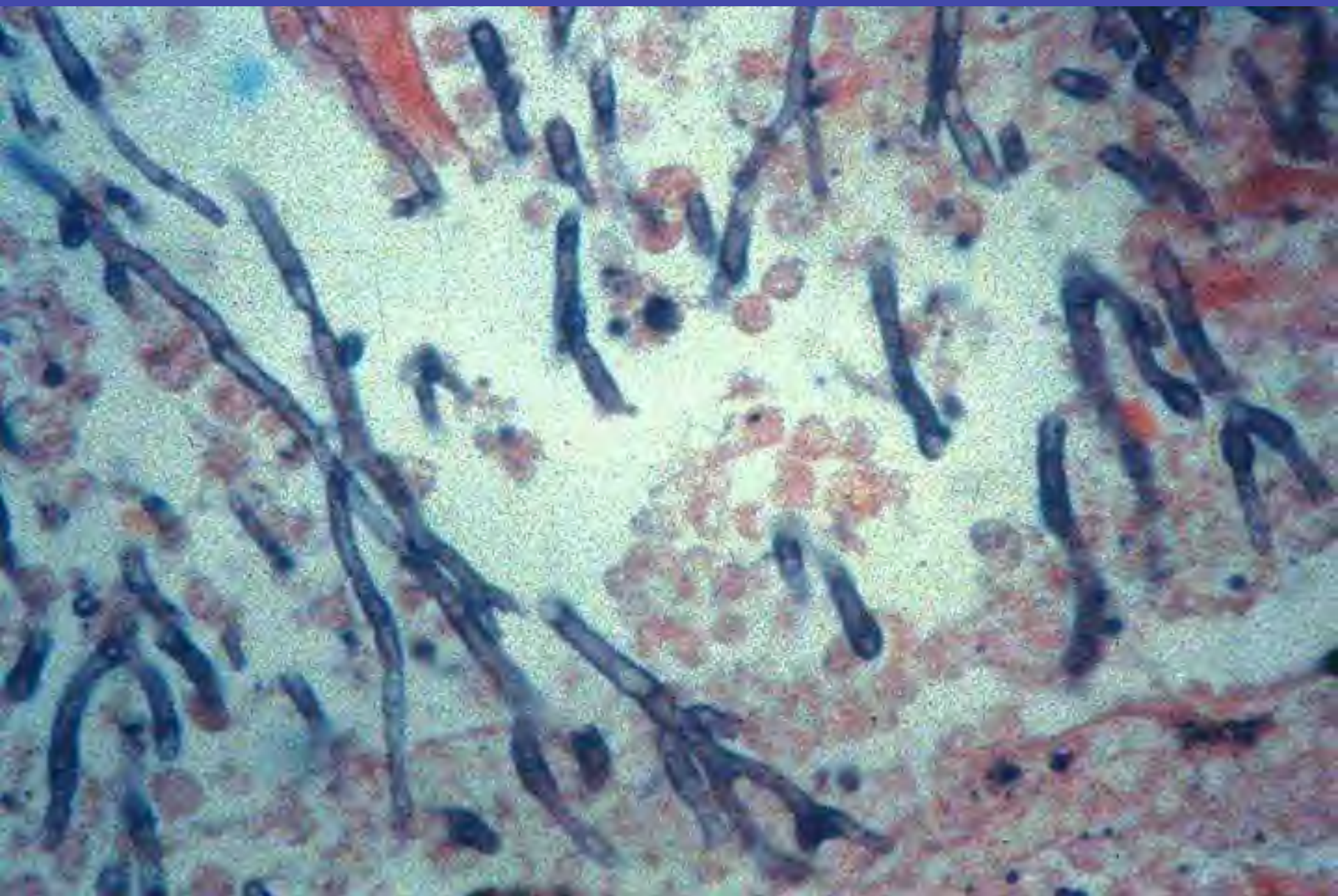


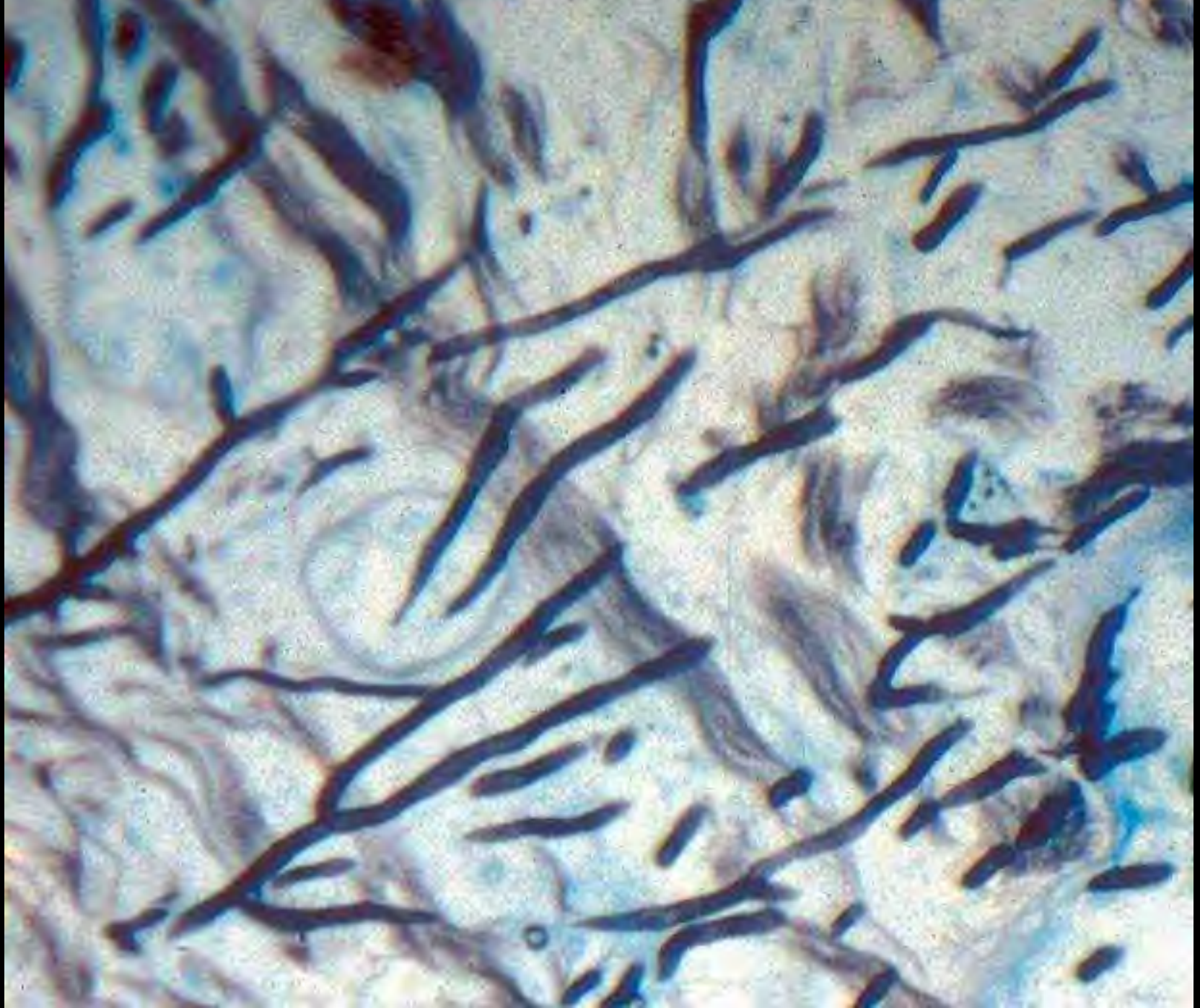














M-2 Respiratory Laboratory - 1

63 Aspiration pneumonia

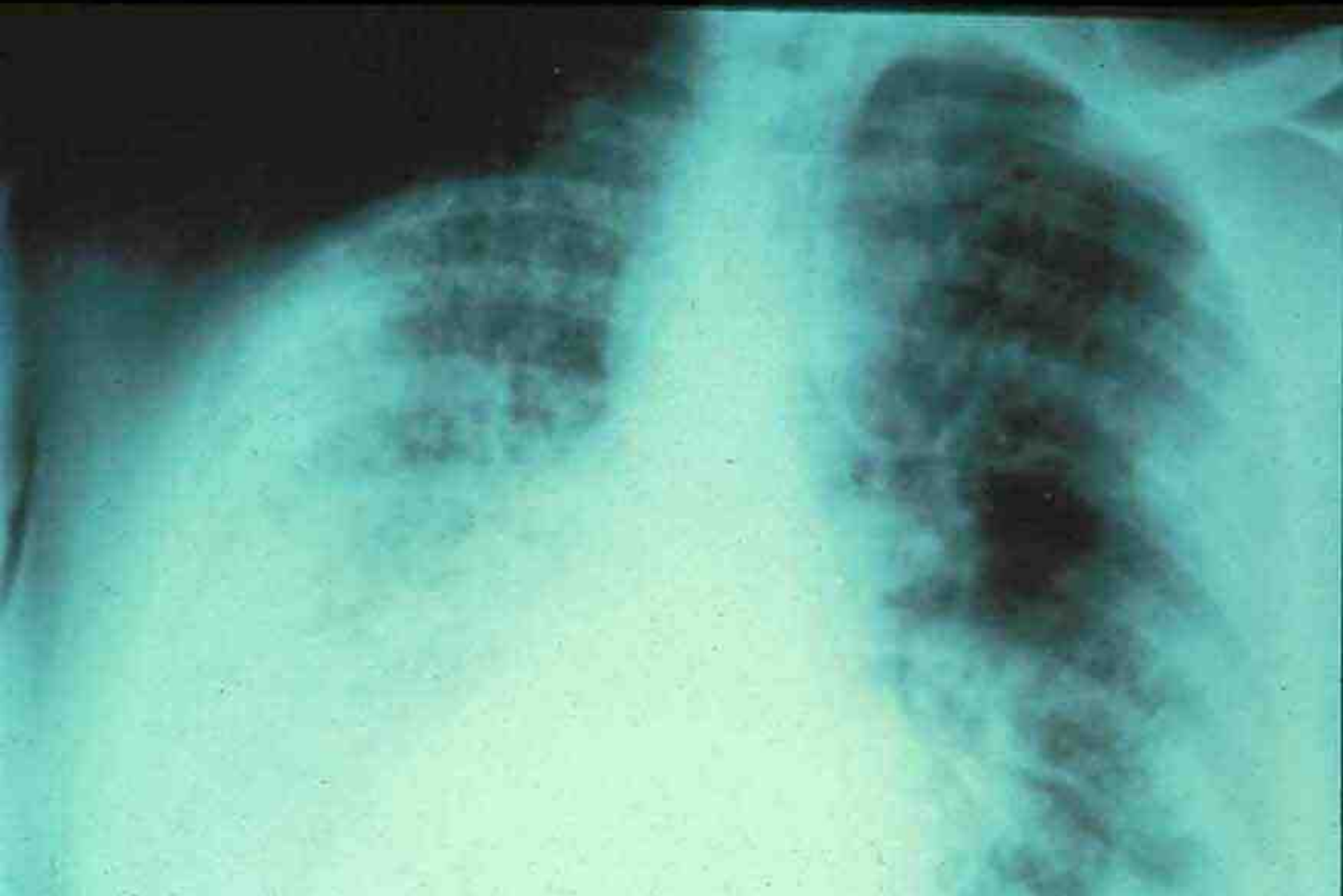
26 Tuberculosis

64 Pneumonia

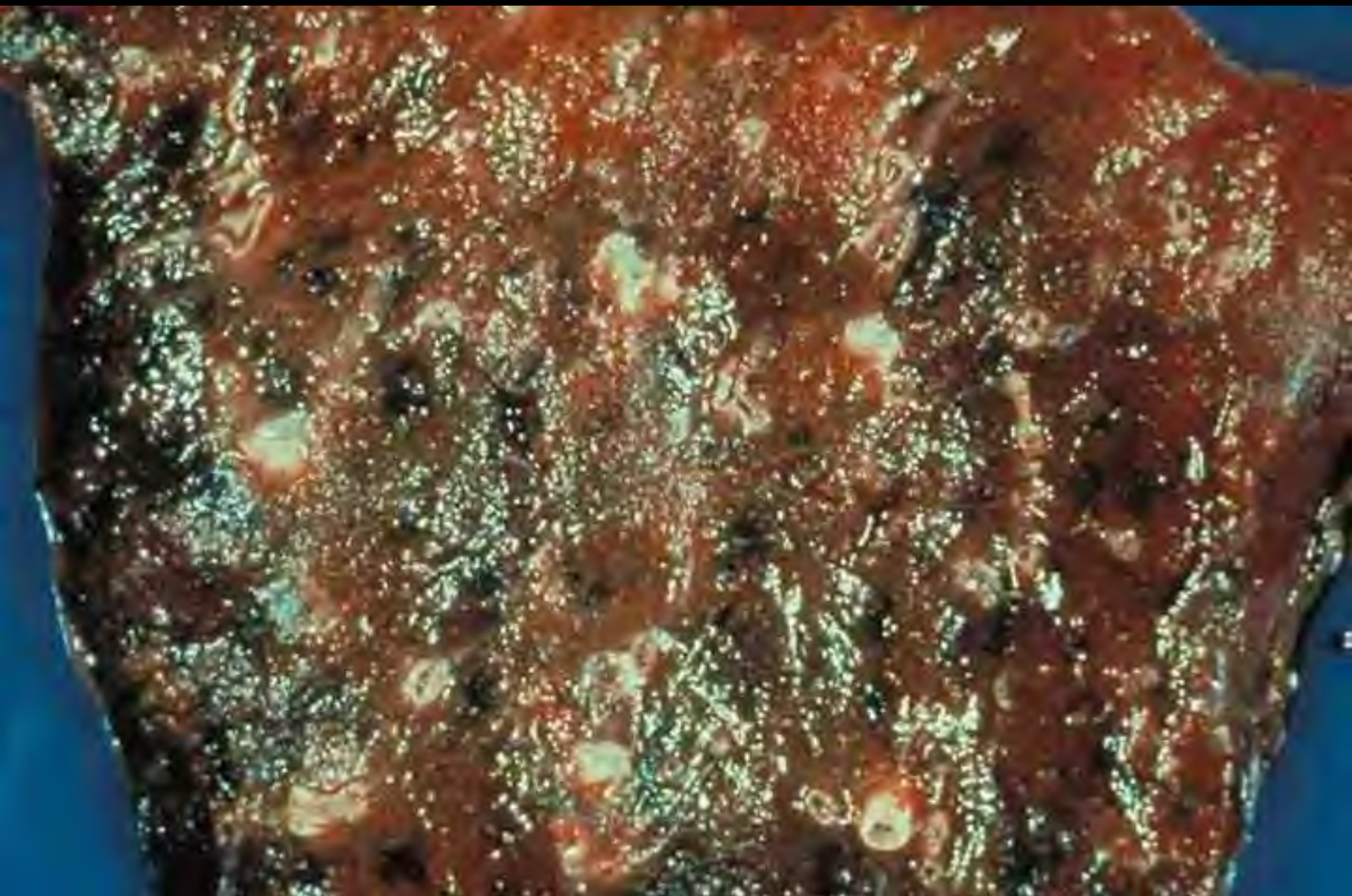
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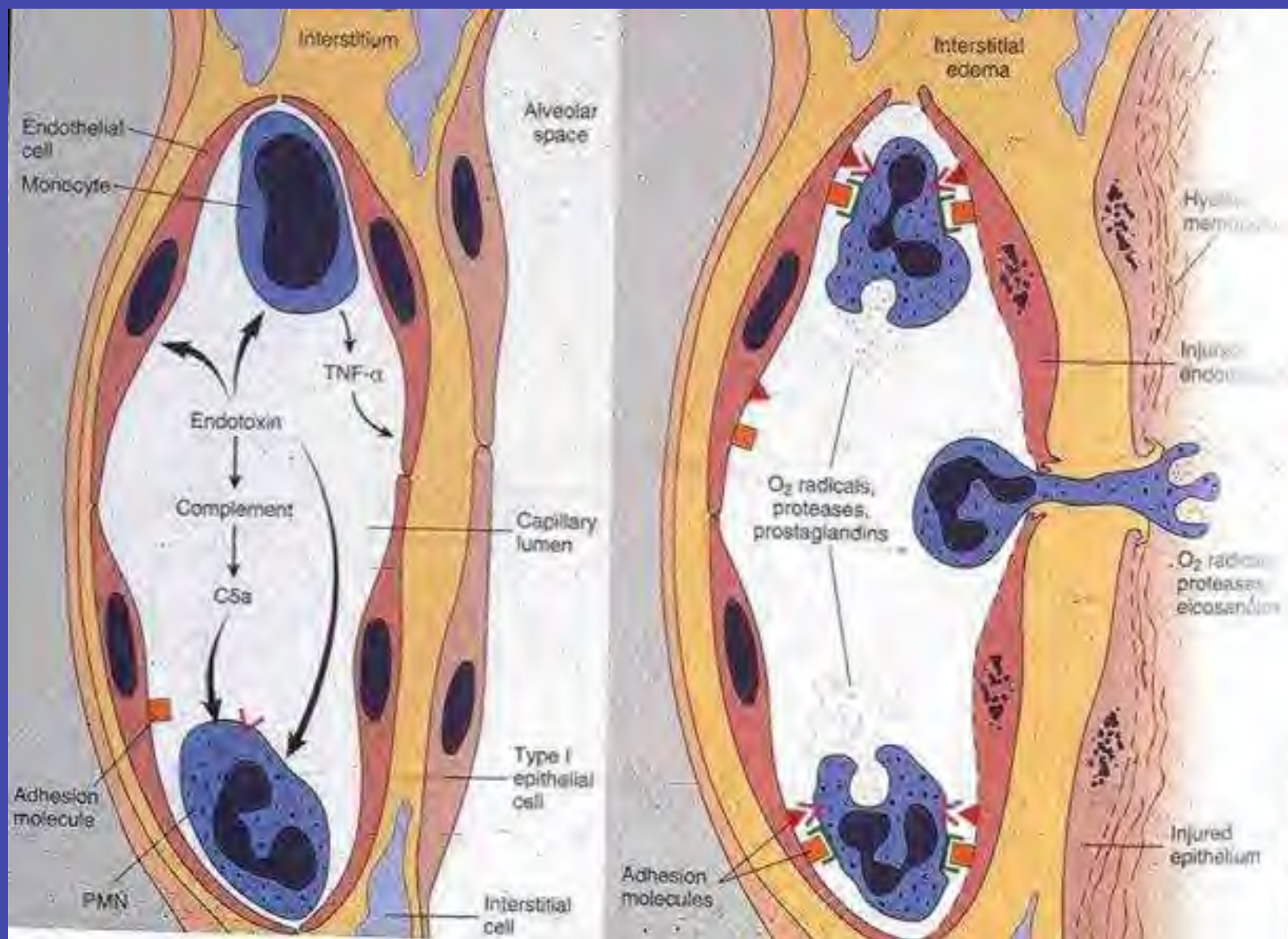
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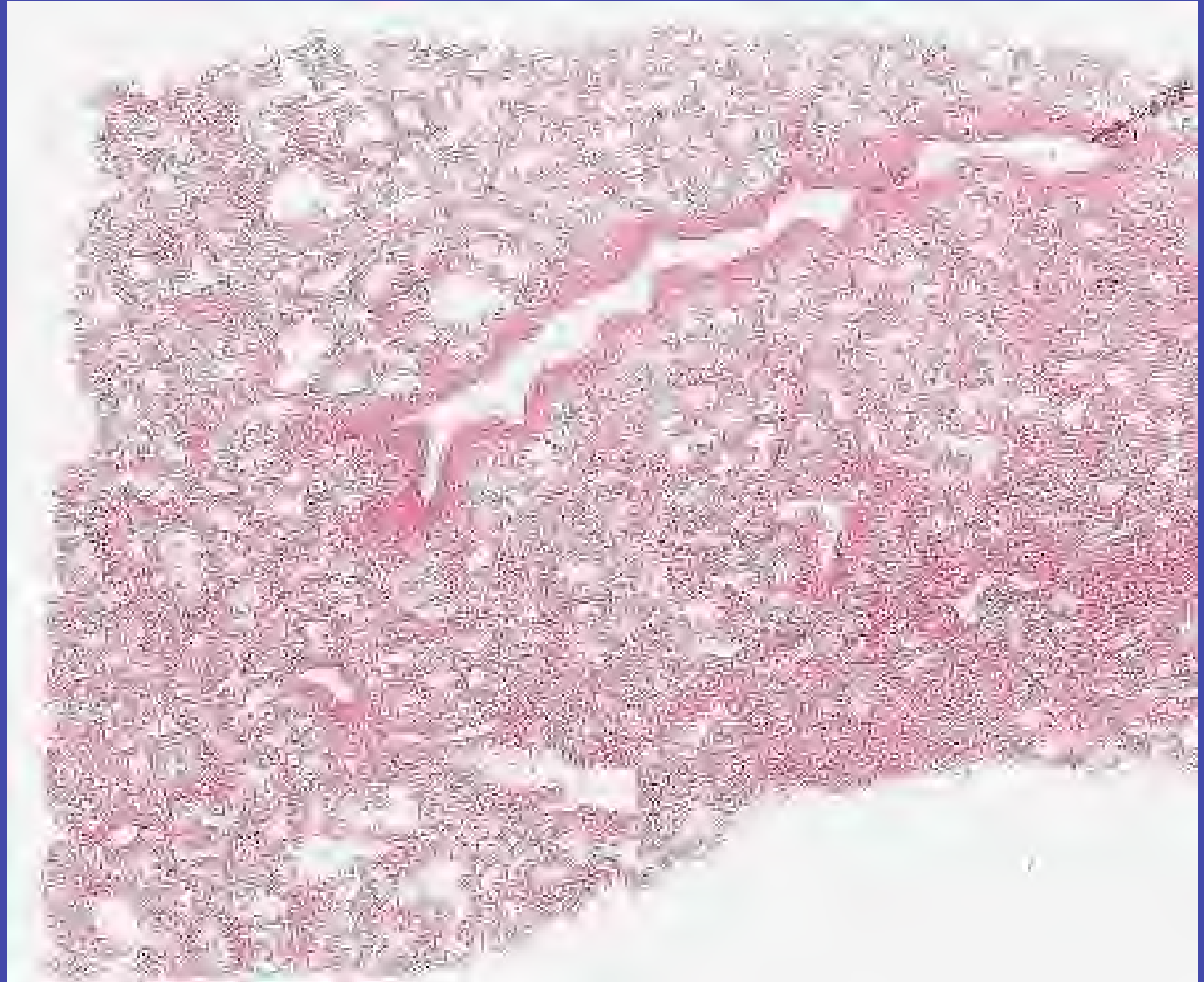
61 RDS in the newborn

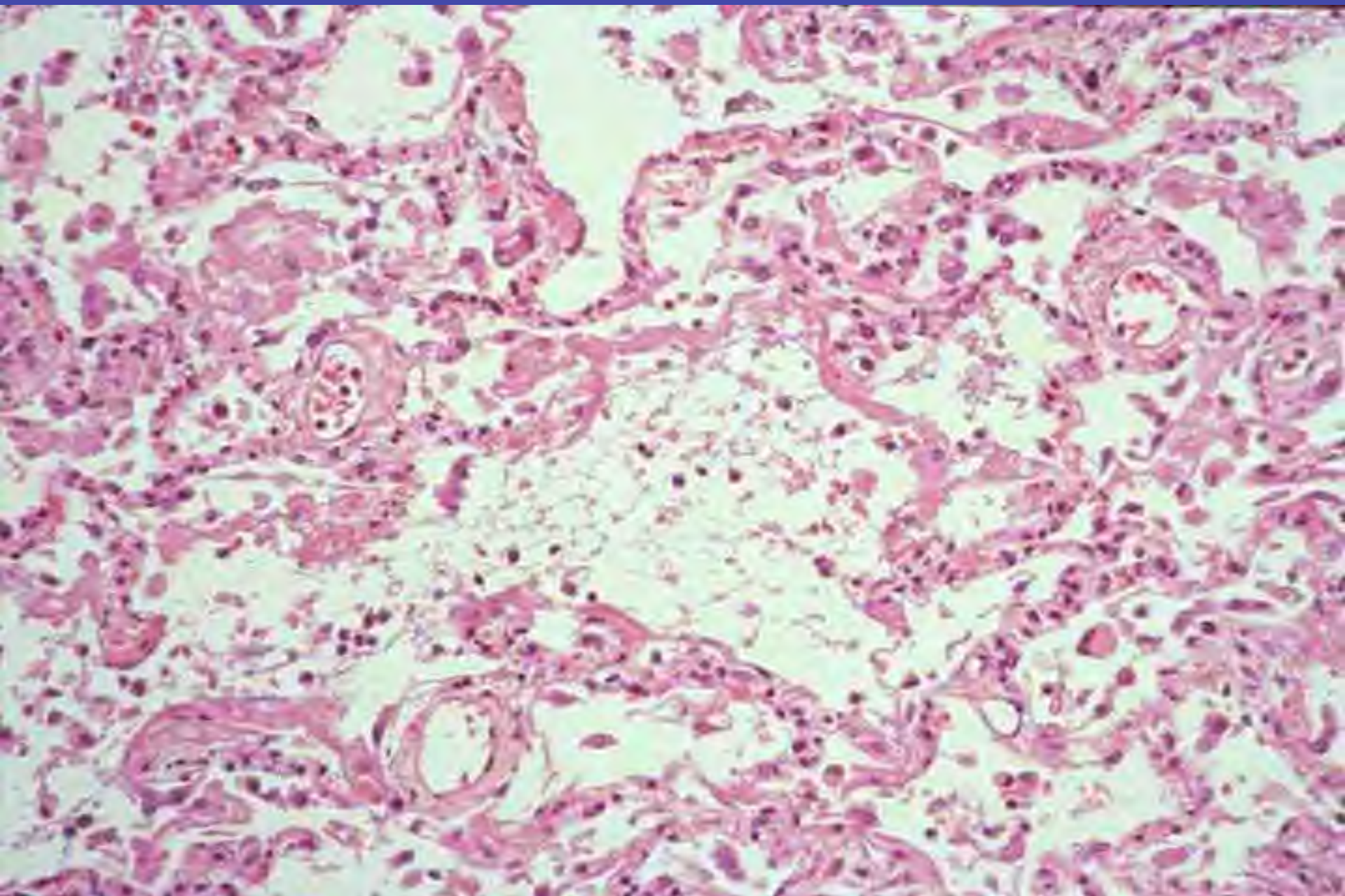


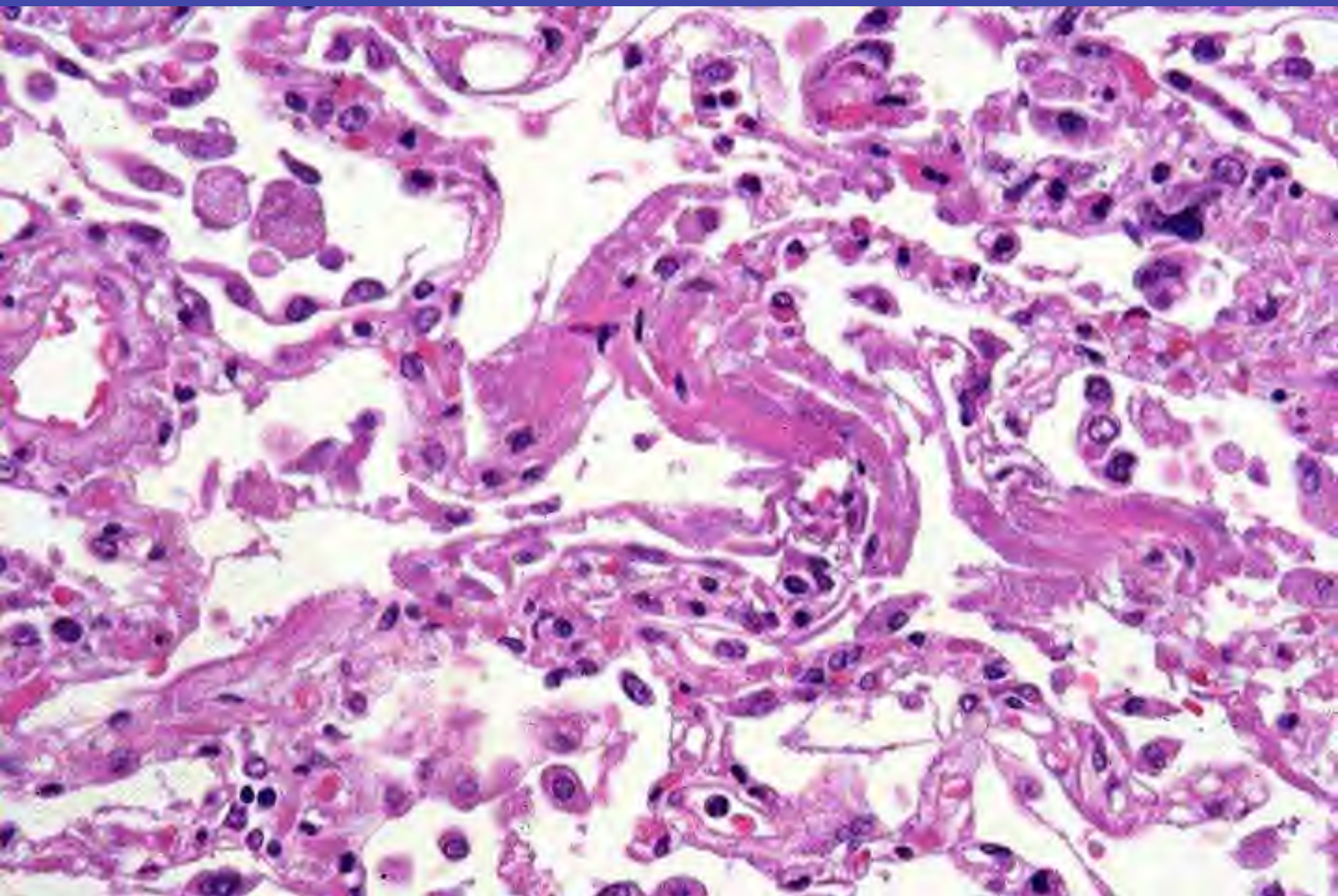


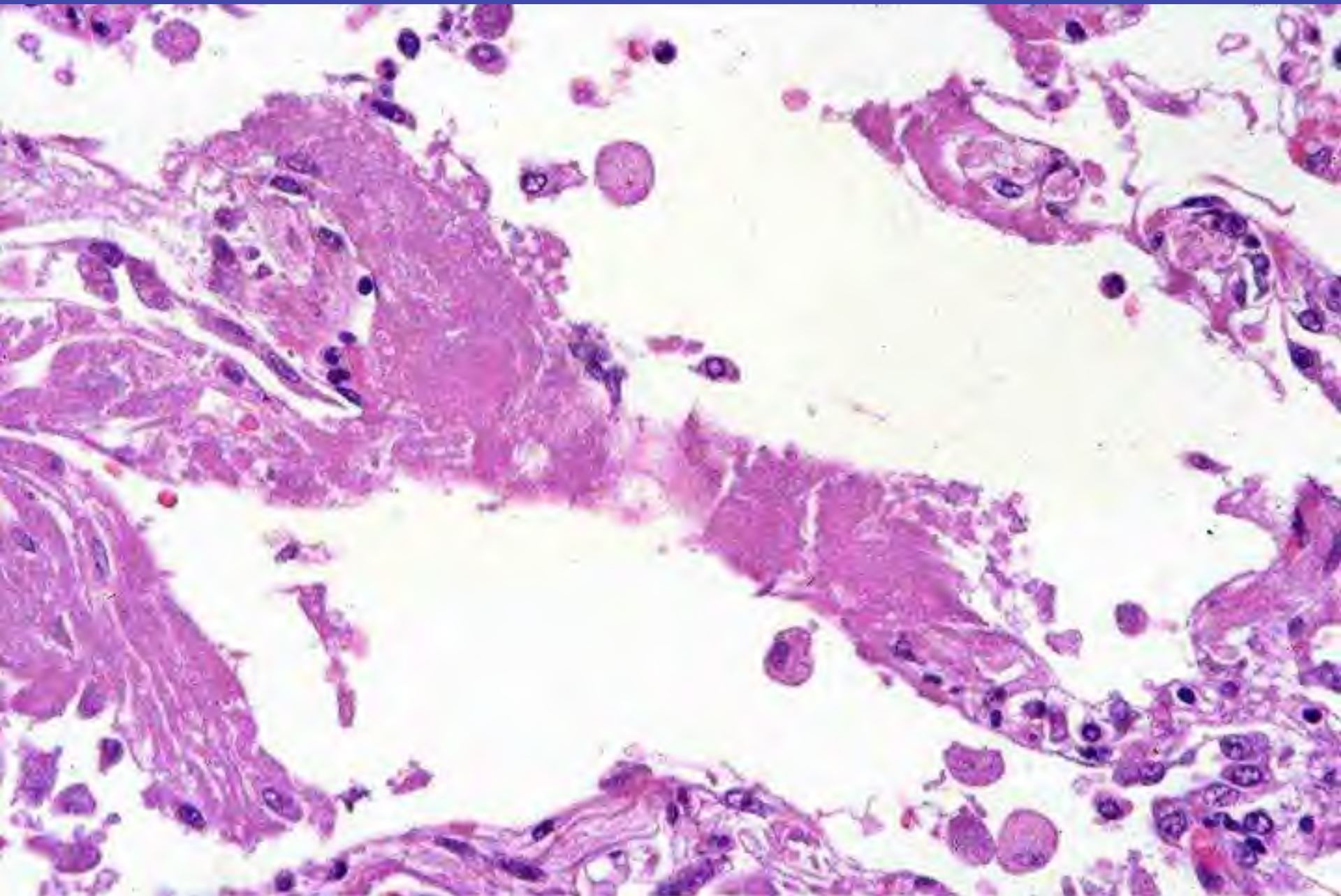


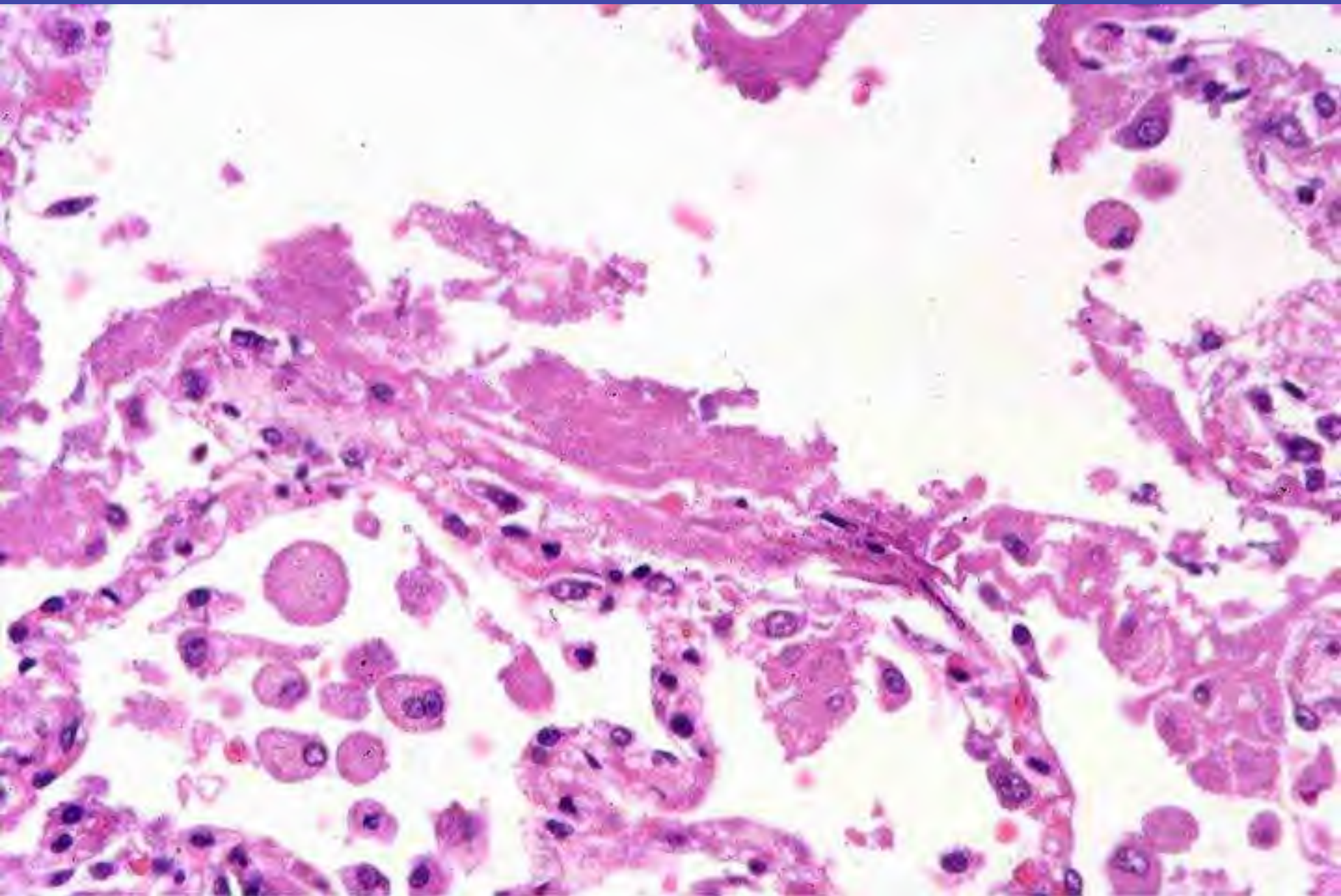


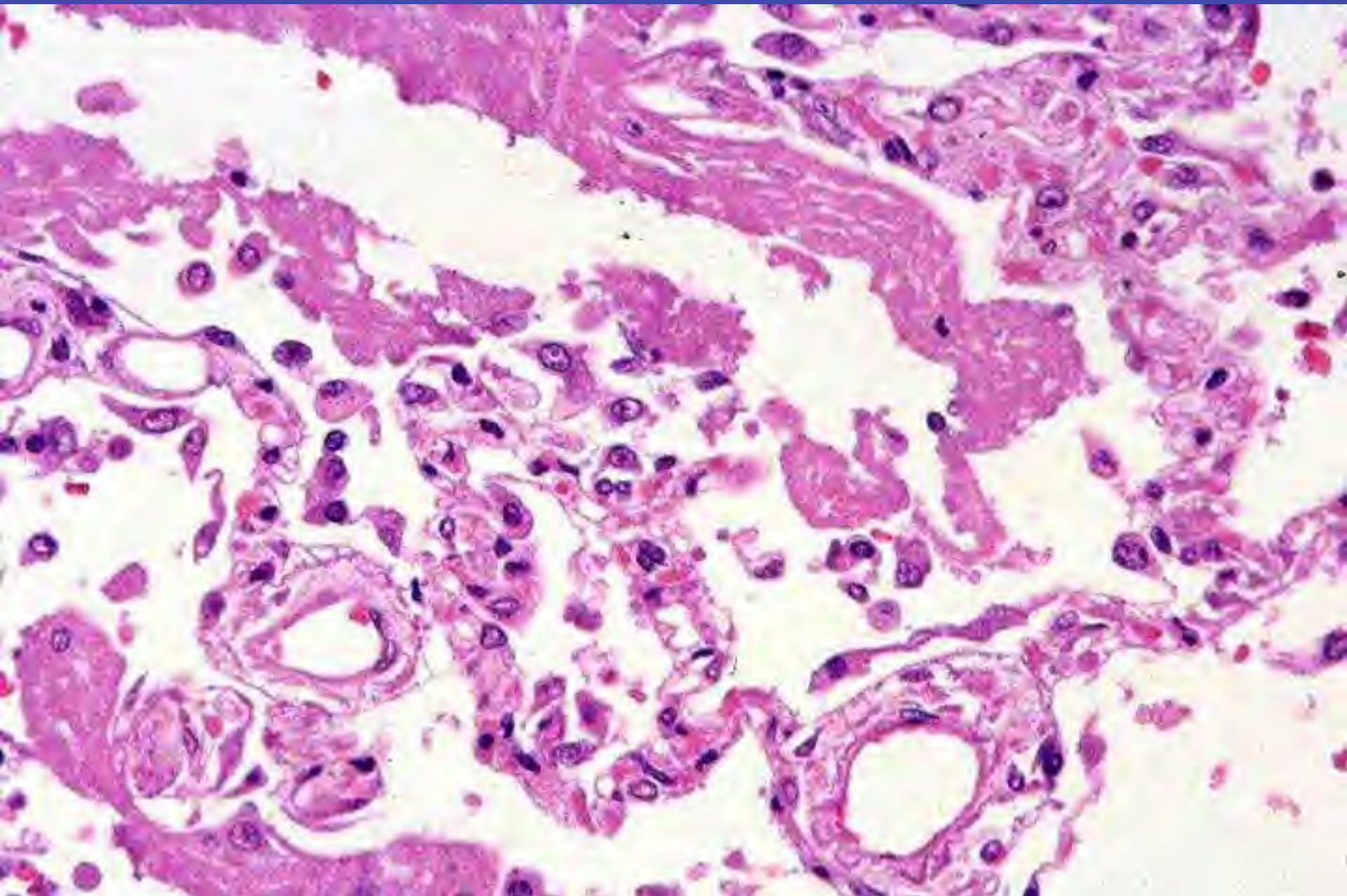


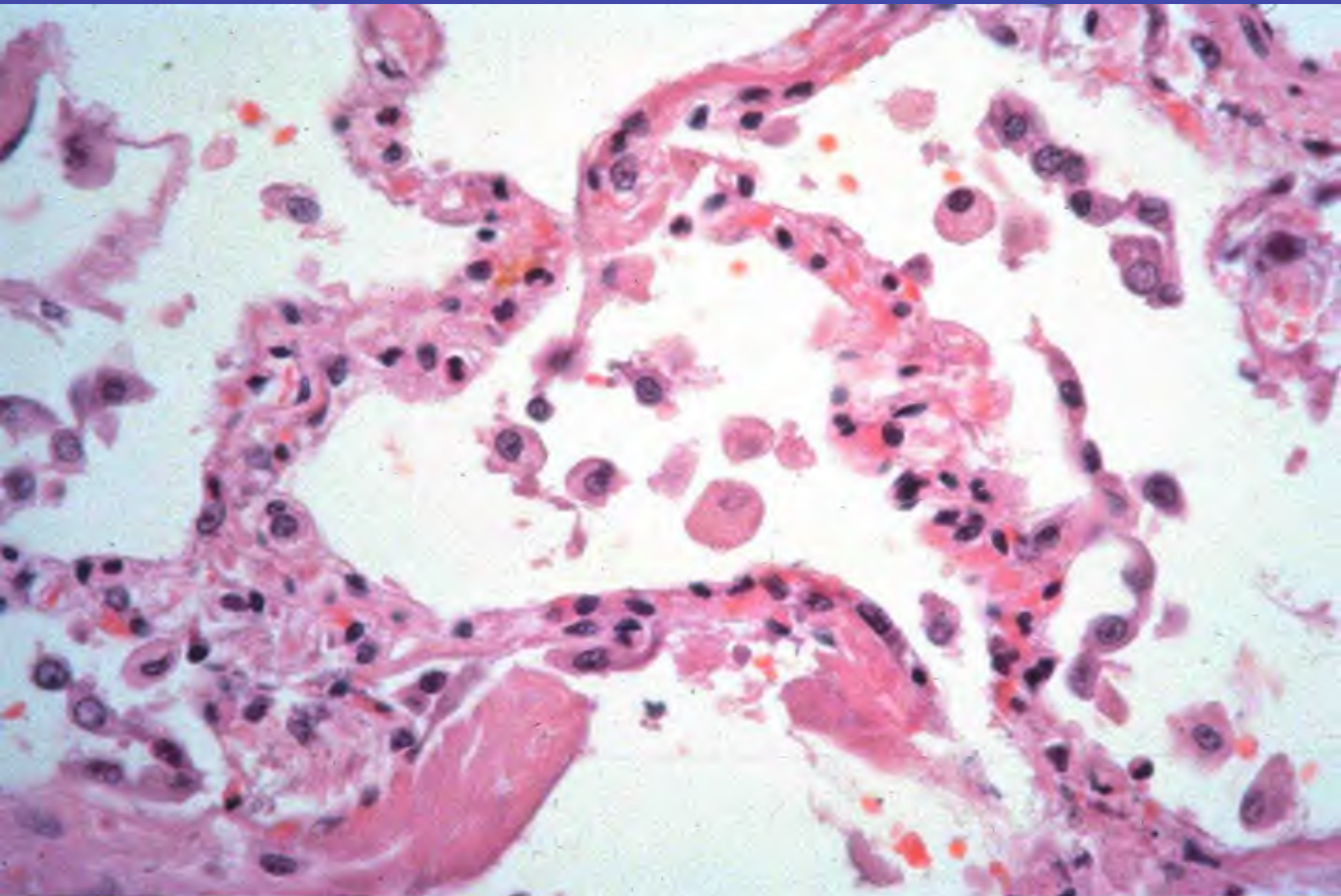












M-2 Respiratory Laboratory - 1

63 Aspiration pneumonia

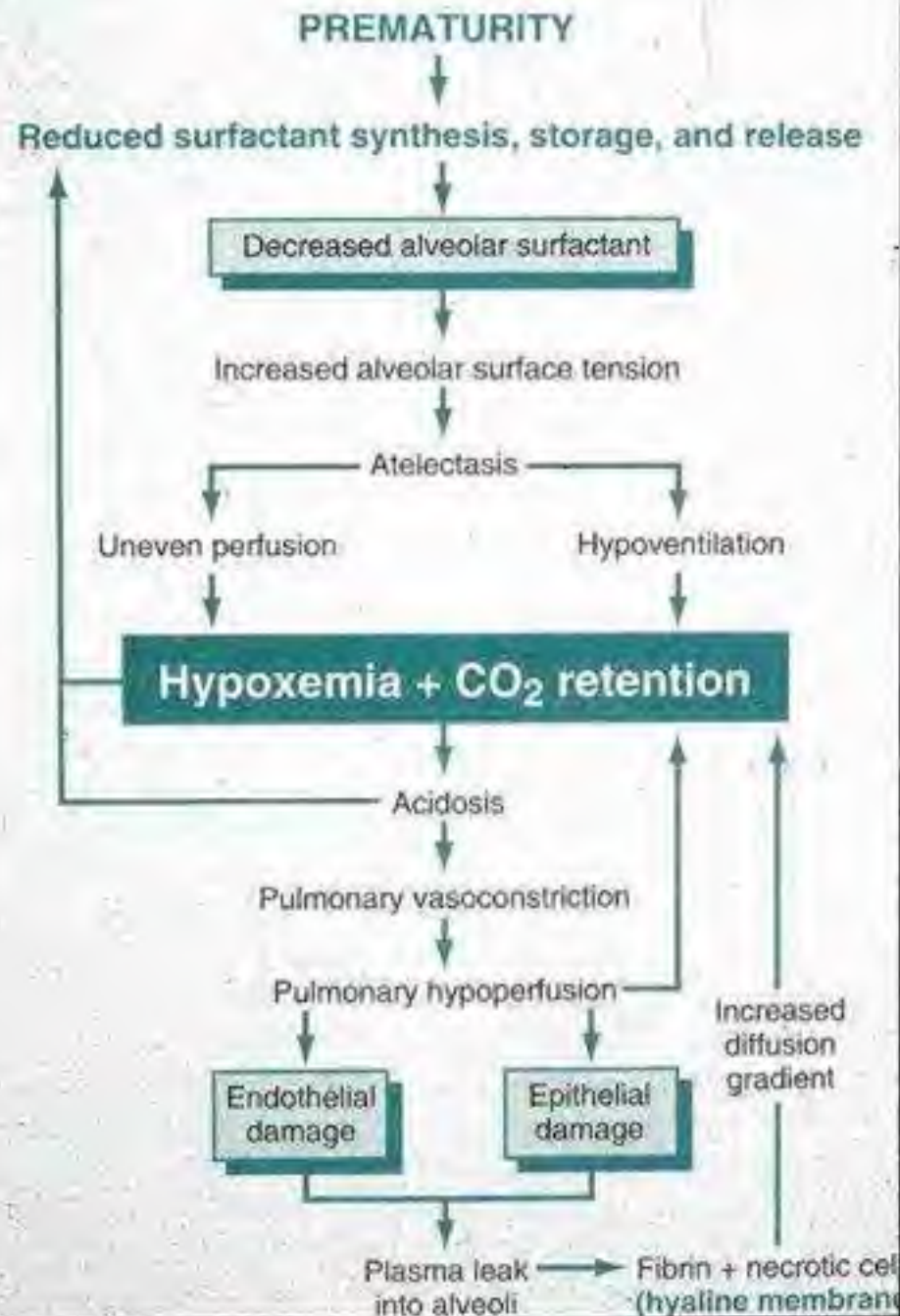
26 Tuberculosis

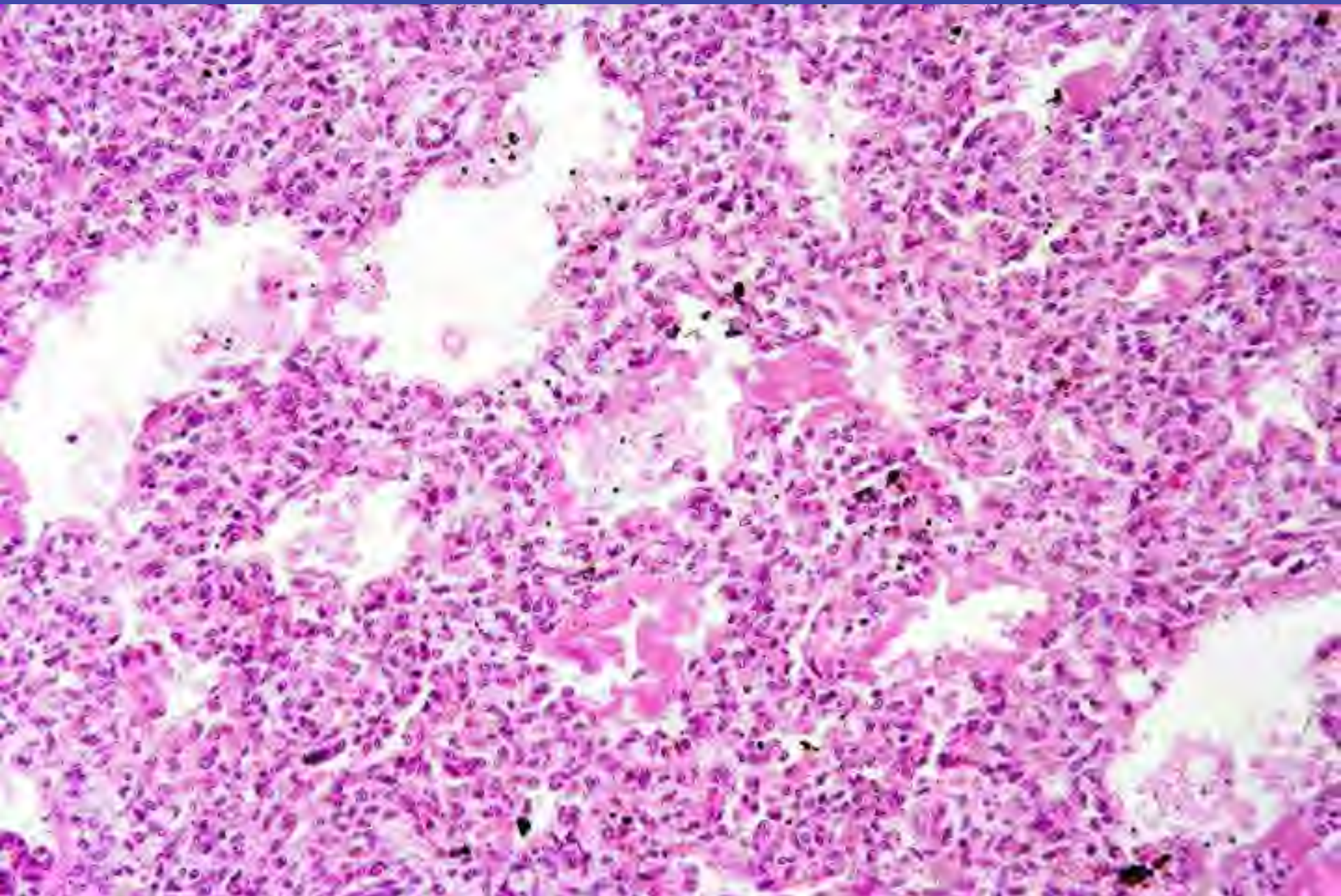
64 Pneumonia

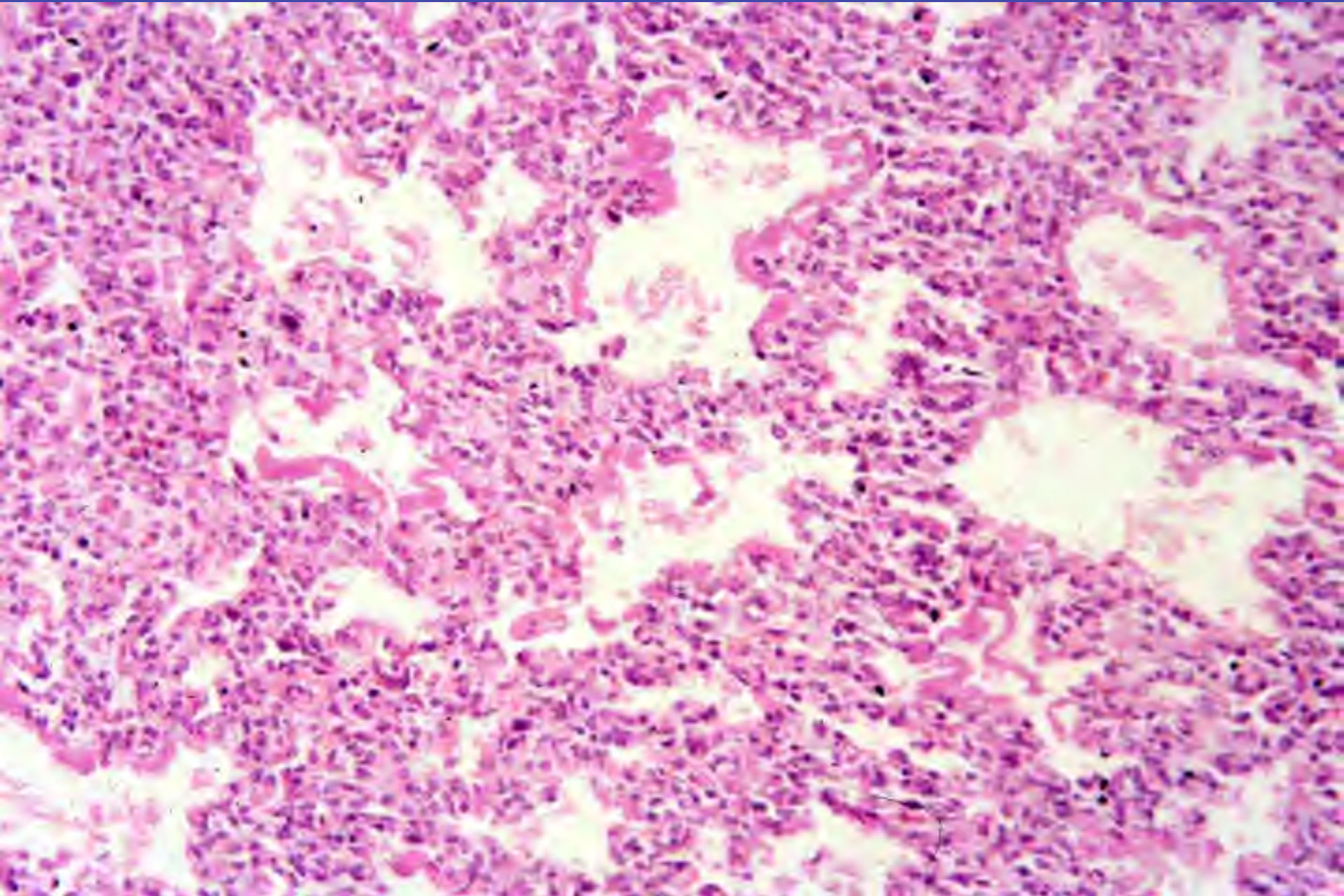
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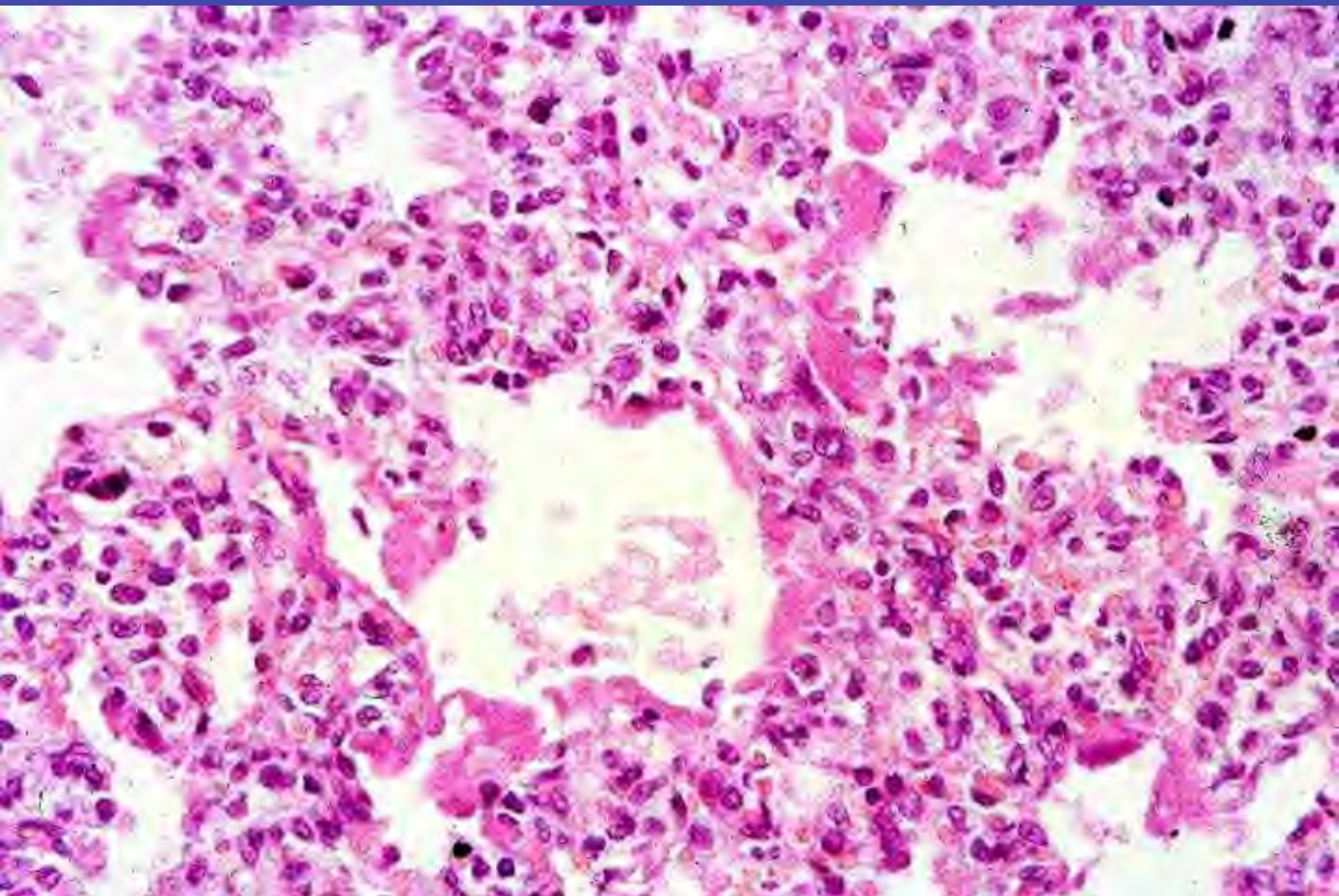
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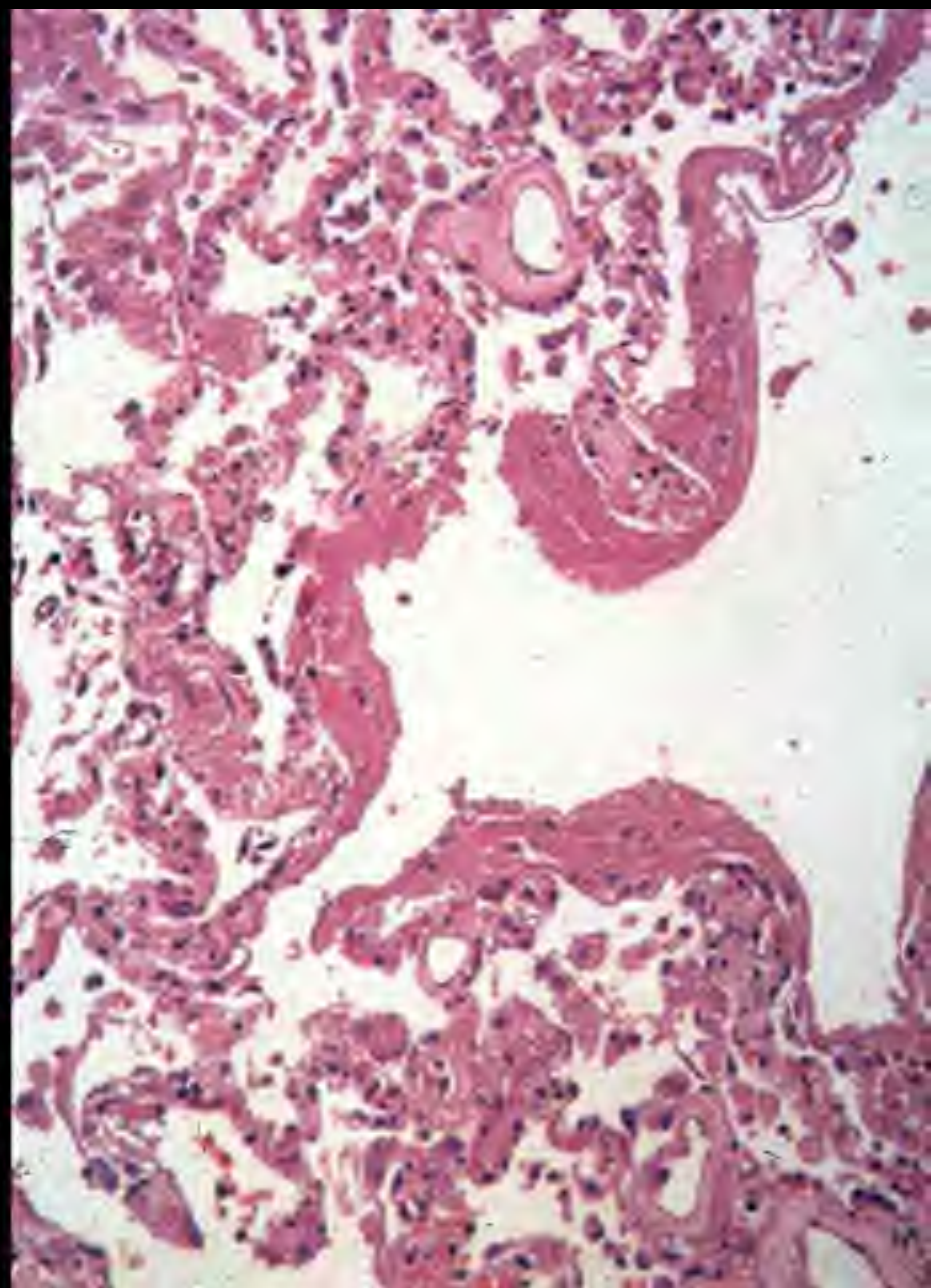
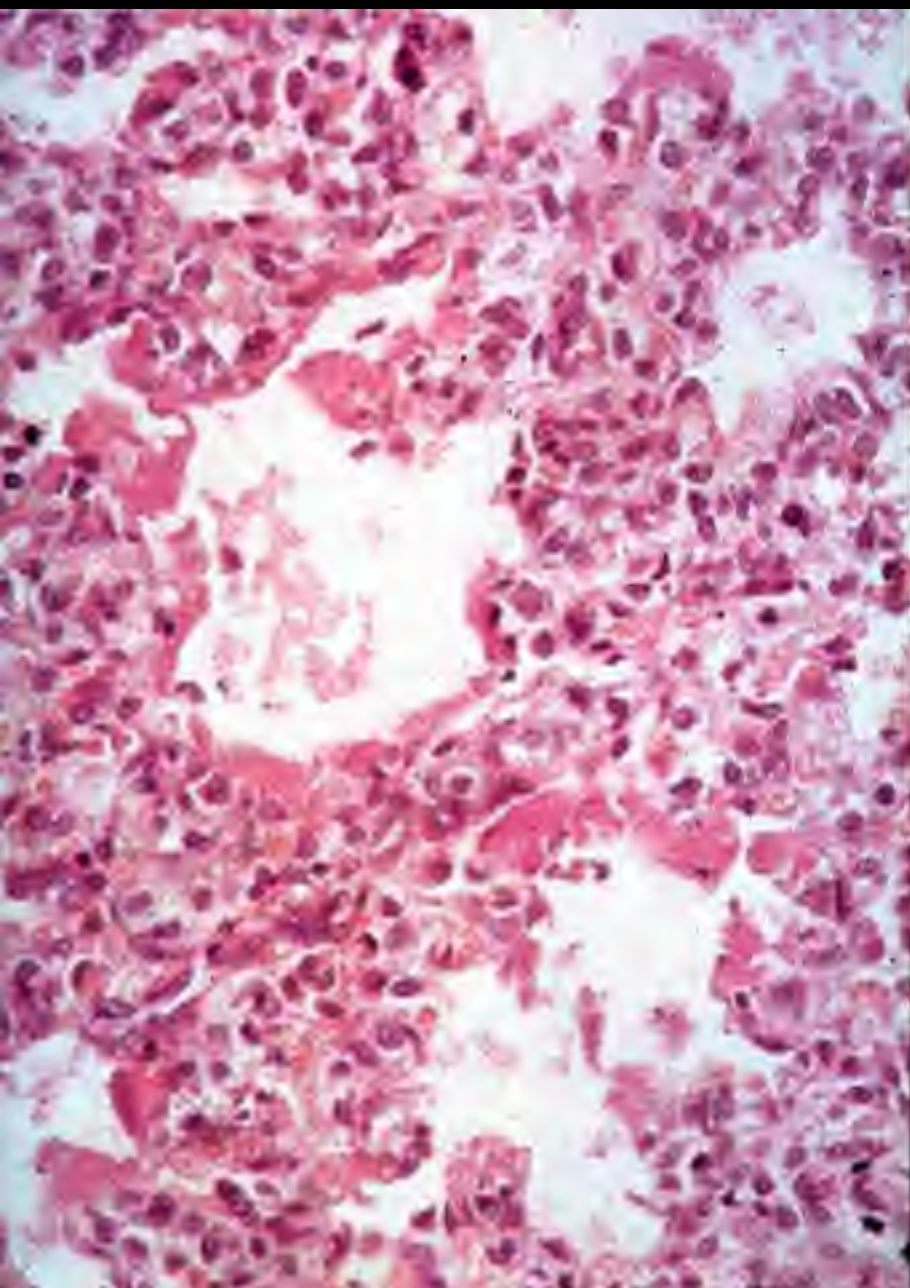
61 RDS in the newborn











M-2 Respiratory Laboratory - 2

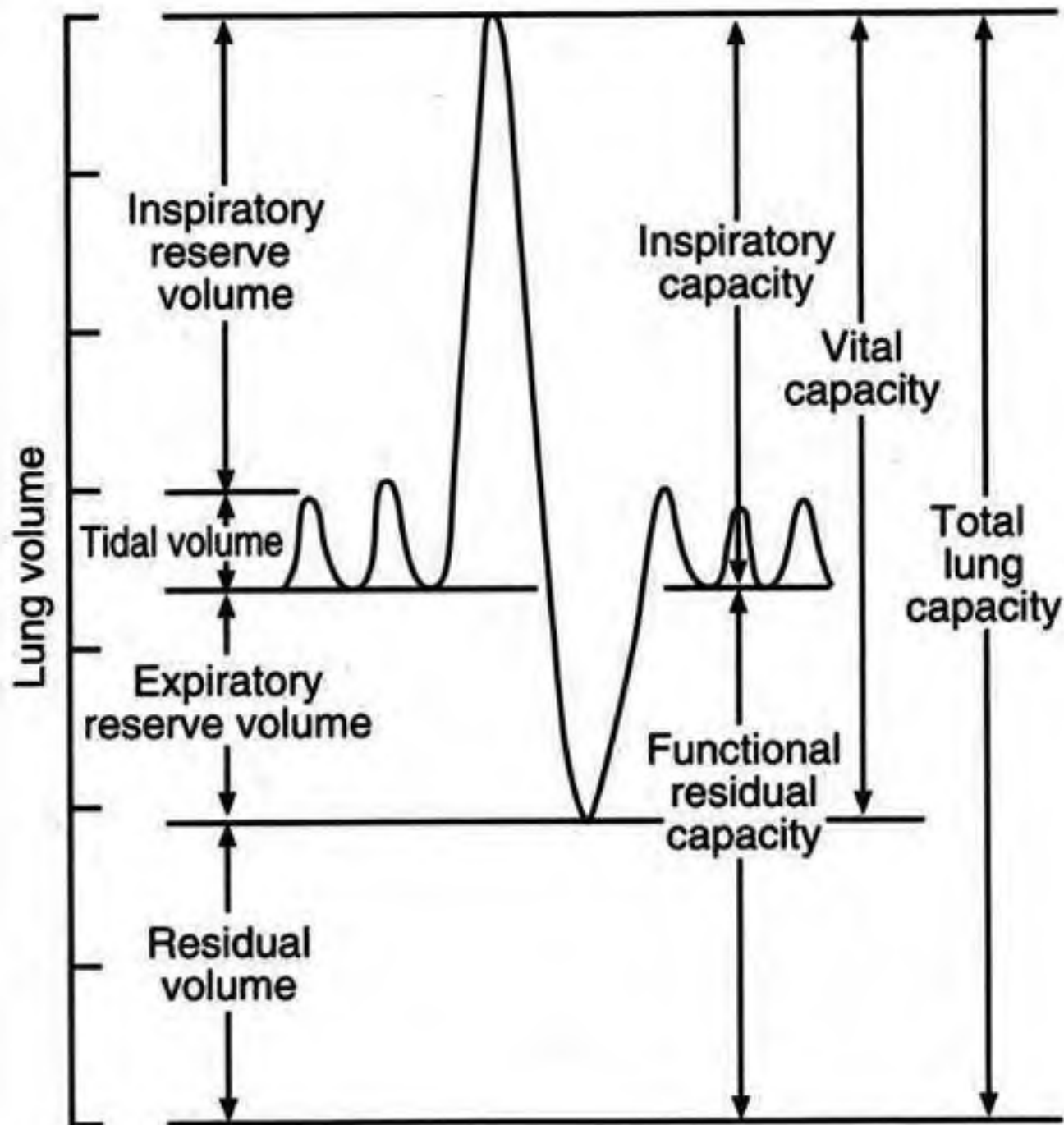
59 Emphysema

67 Bronchiectasis

68 Asthma

60 Asbestosis

CPC



Obstructive Pulmonary Disorders

Pathophysiologically characterized by:
Increased resistance to air flow
at any level

Pathologic processes include:

Emphysema

Chronic bronchitis

Bronchiectasis

Asthma

Cystic fibrosis

Restrictive Pulmonary Disorders

Pathophysiologically characterized by:

- Limited lung expansion**

- Reduced lung volume**

- Decreased in driving force for expiration**

Pathologic processes include:

- Neuromuscular**

- Chest wall**

- Pleural space**

- Lung parenchyma (ILD)**

Pulmonary Function Abnormalities

Restrictive Disorders

FVC	↓ ↓
FEV ₁	↓ ↓
FRC	↓
RV	↓
TLC	↓

Obstructive Disorders

	<i>Mild</i>	<i>Severe</i>
FVC	N	↓
FEV ₁	↓	↓ ↓
FRC	N	↑
RV	N	↑
TLC	N	↑

Gas Exchange in the Lung

Diffusing capacity (DL_{CO})

Factors that affect DL_{CO} :

Increase DL_{CO}

Increase body size, lung volume, alveolar P_{CO_2}

Male sex

Supine position

Exercise

Increasing age to 20 years

Decrease DL_{CO}

Increase in alveolar P_{O_2}

Most lung diseases

Increasing age after 20 years

M-2 Respiratory Laboratory - 2

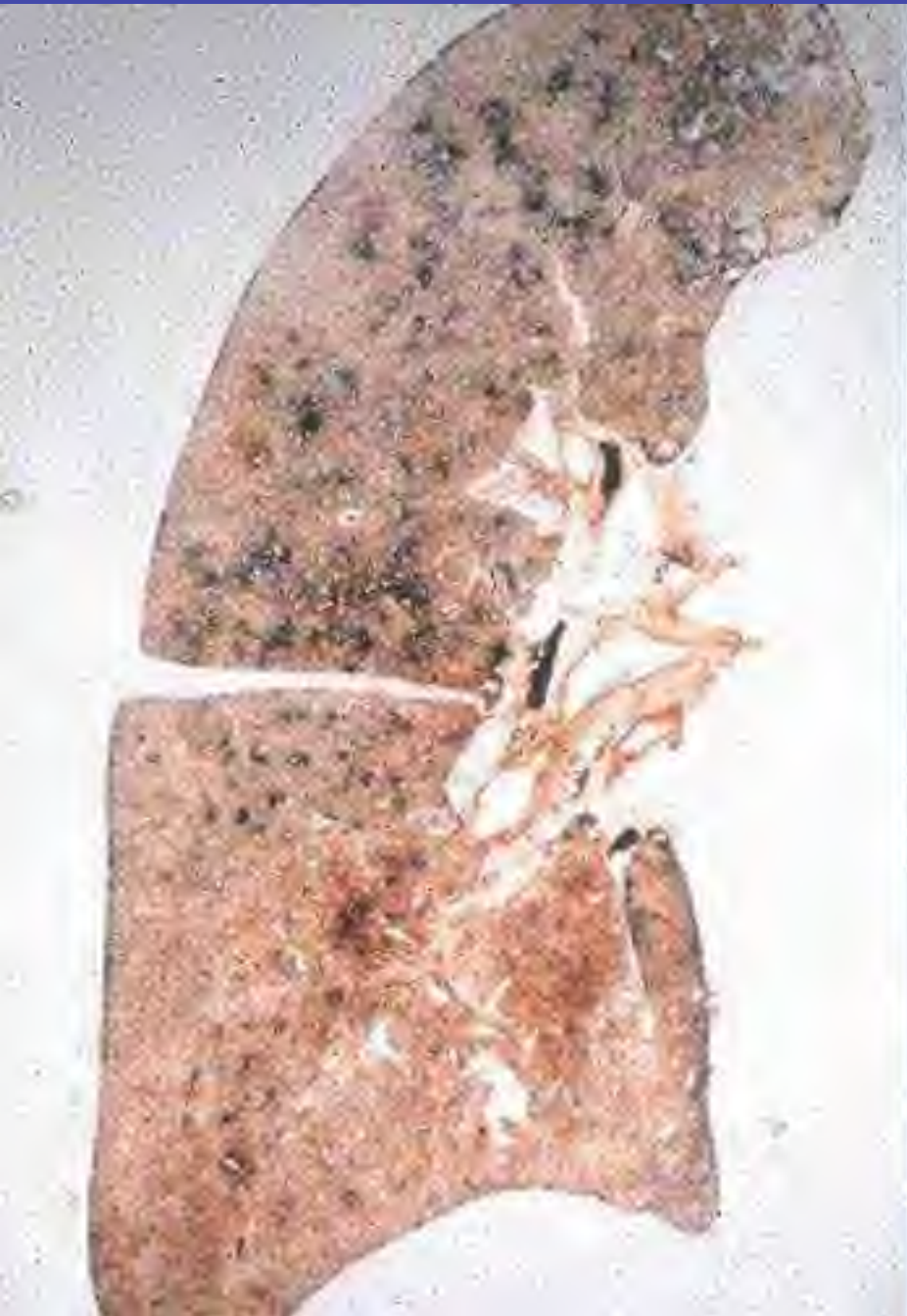
59 Emphysema

67 Bronchiectasis

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CPC



Protease inhibitor

(antielastase)



α_1 -AT deficiency

Protease

(elastase)



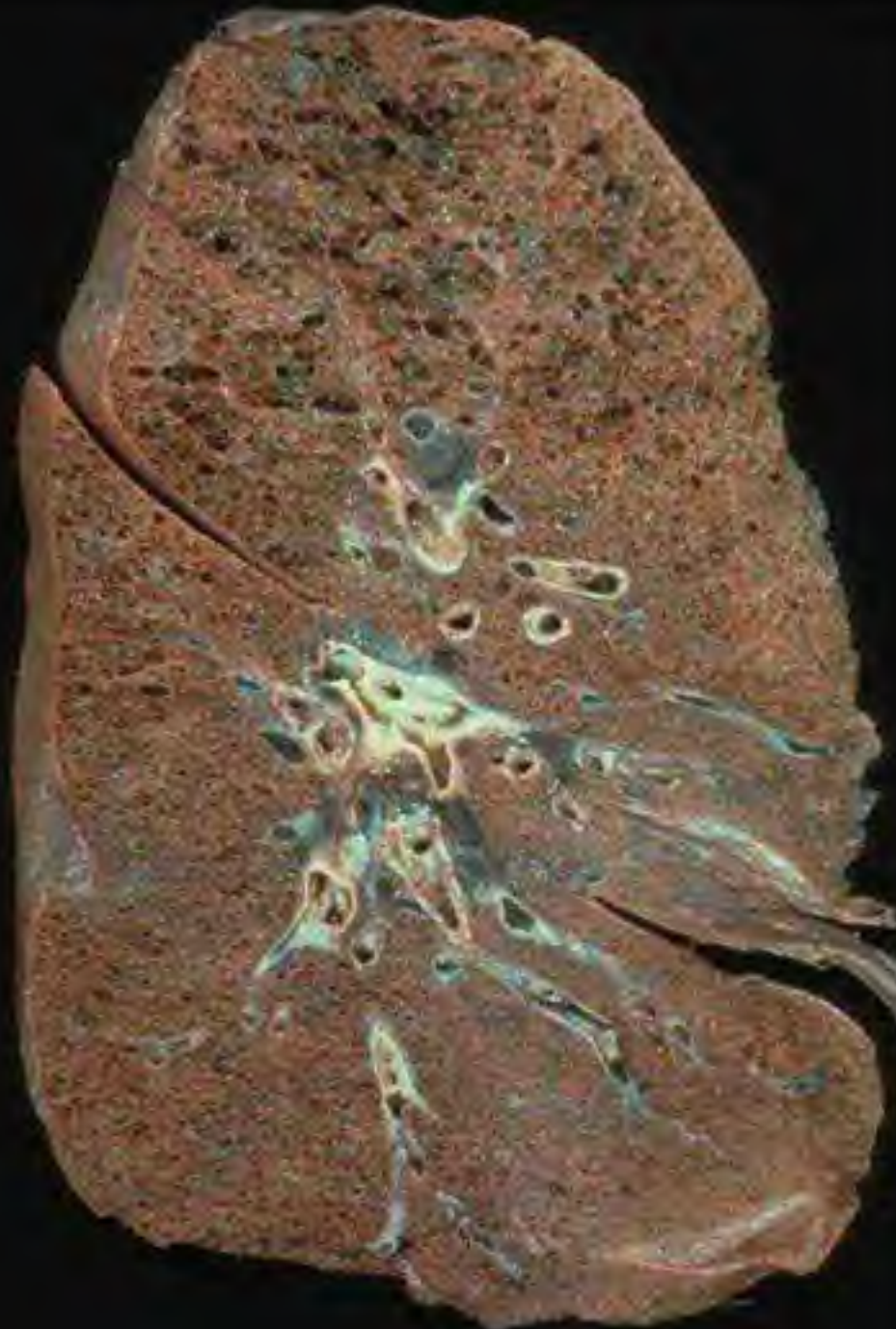
smoking



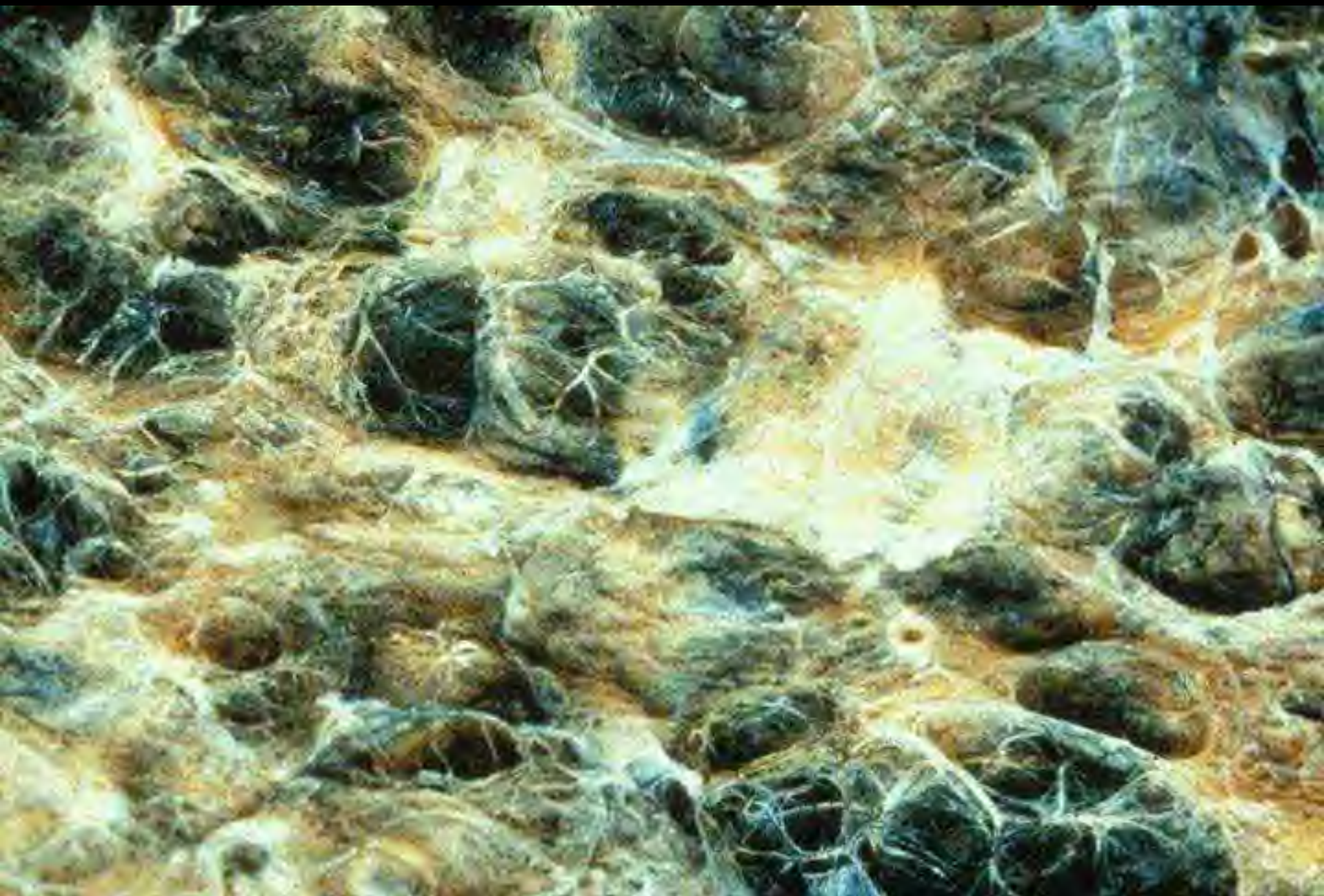
Elastase

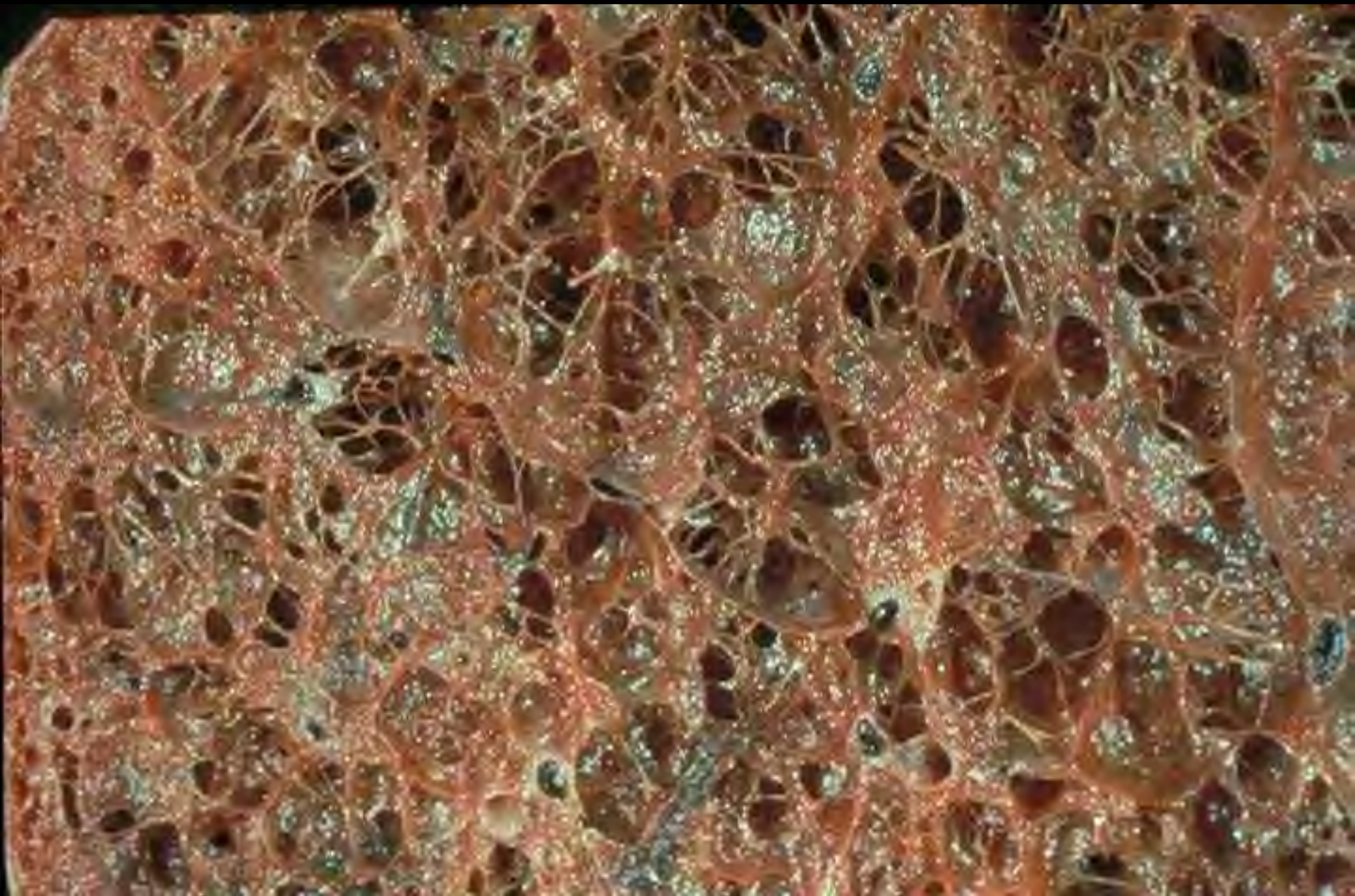
Collagen and elastin destruction

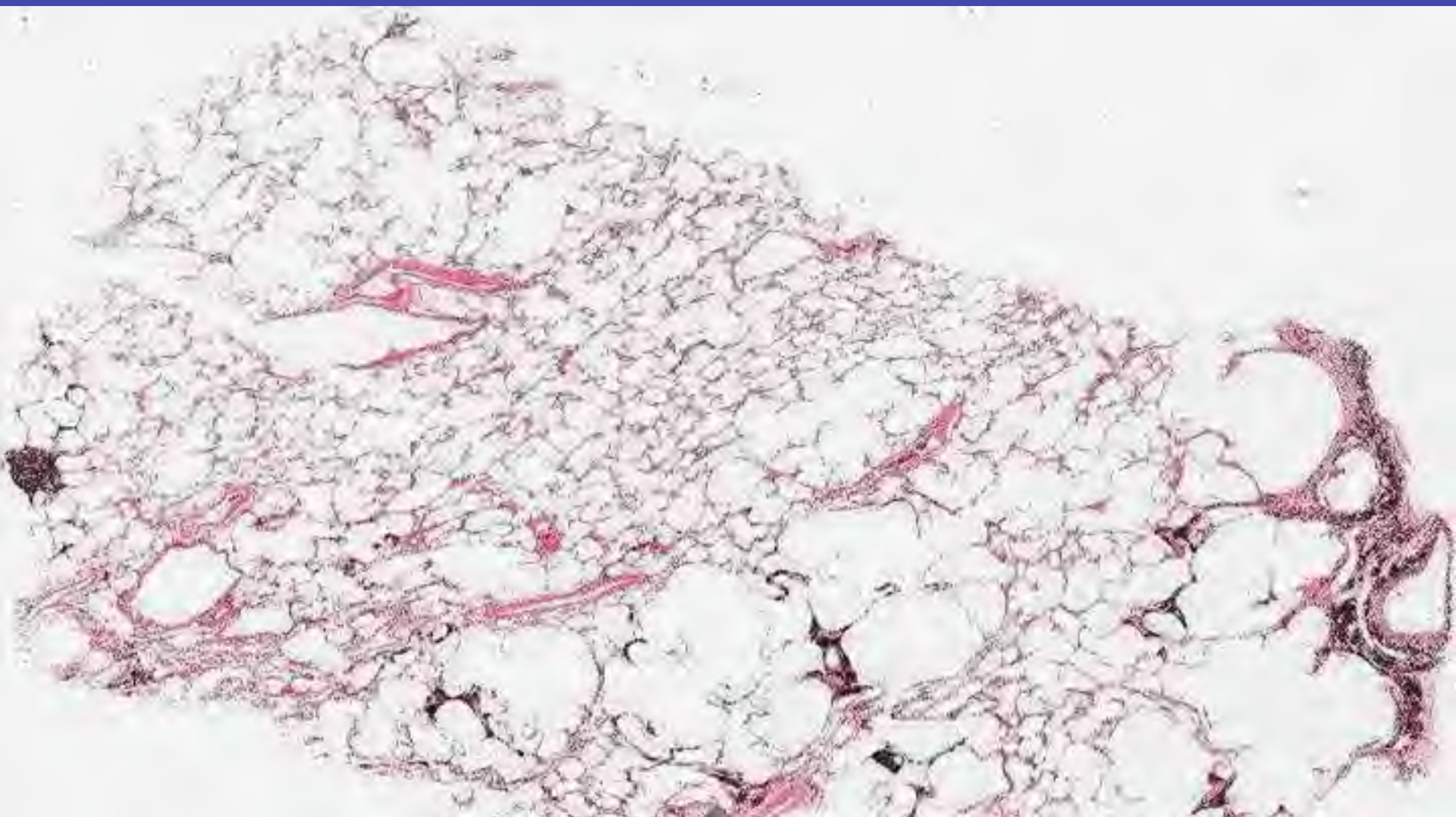
Emphysema

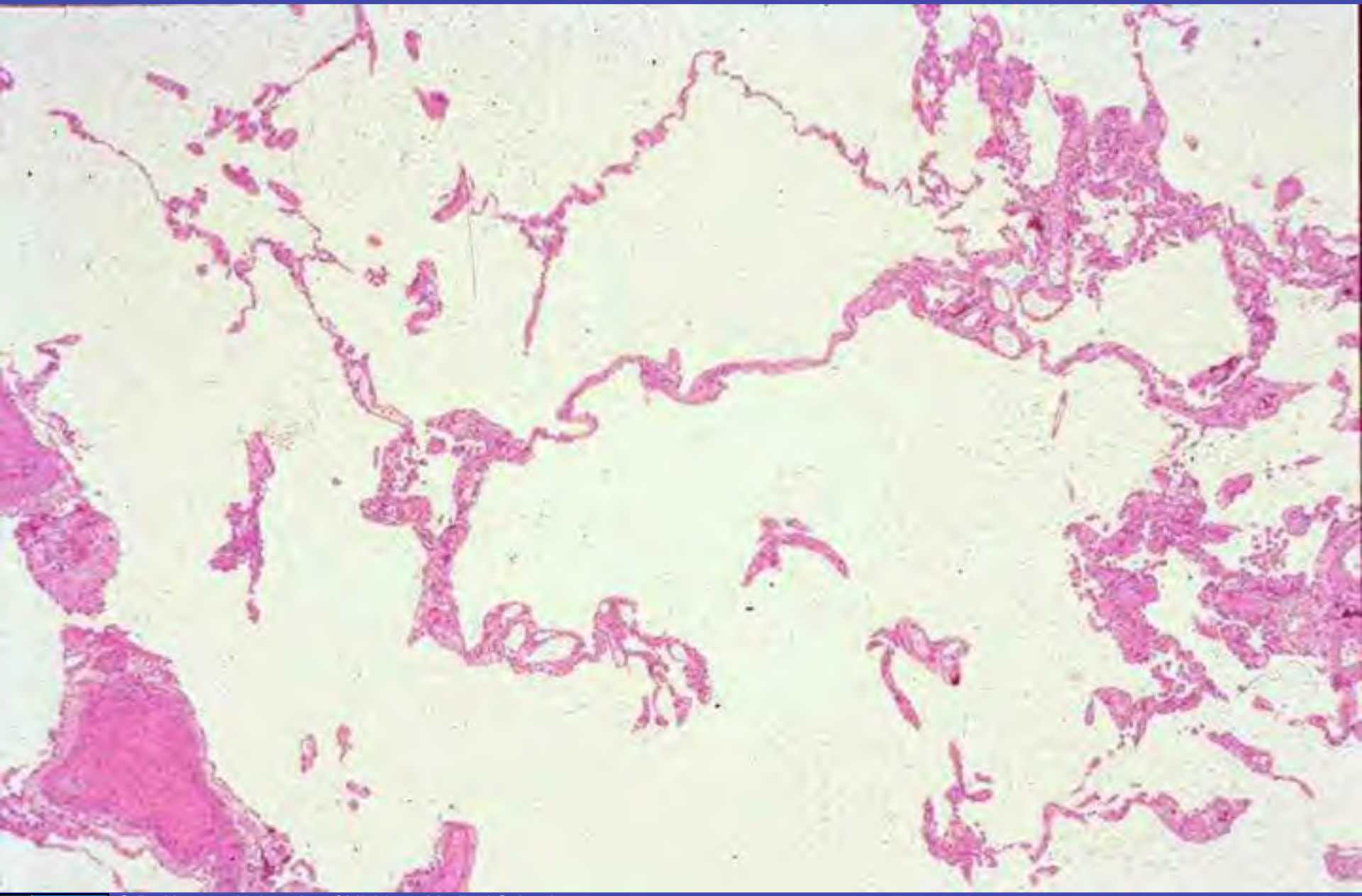


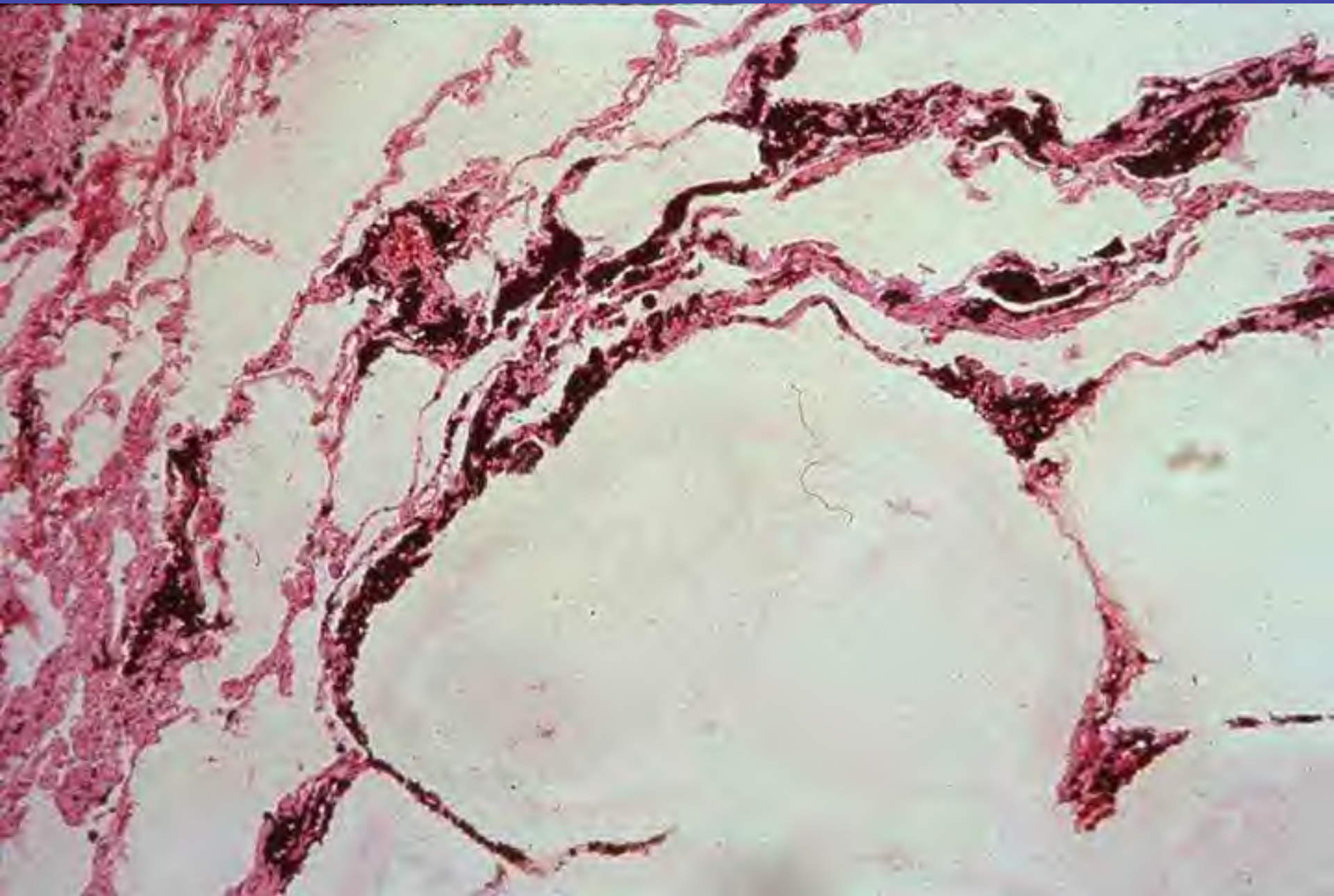


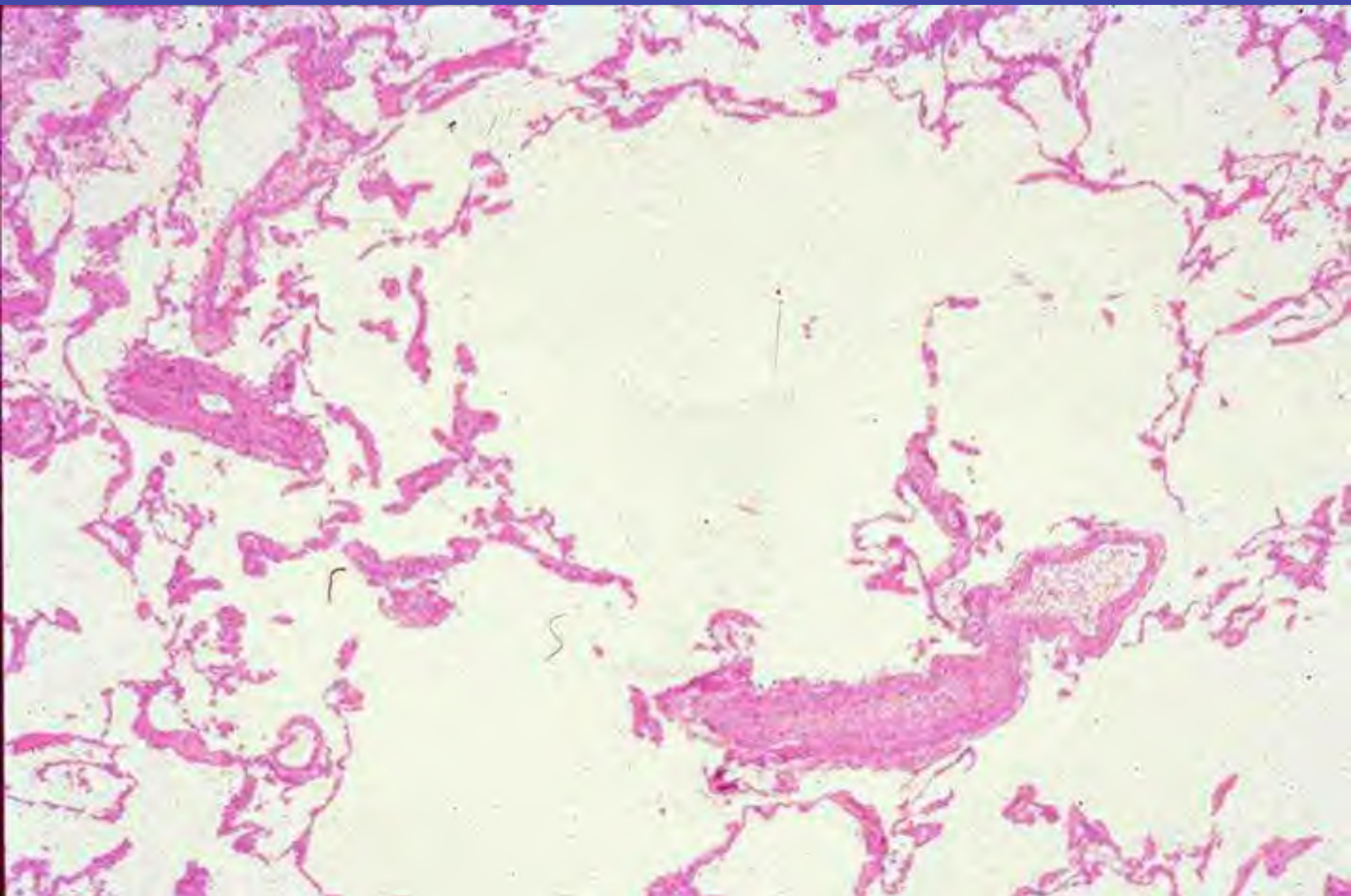


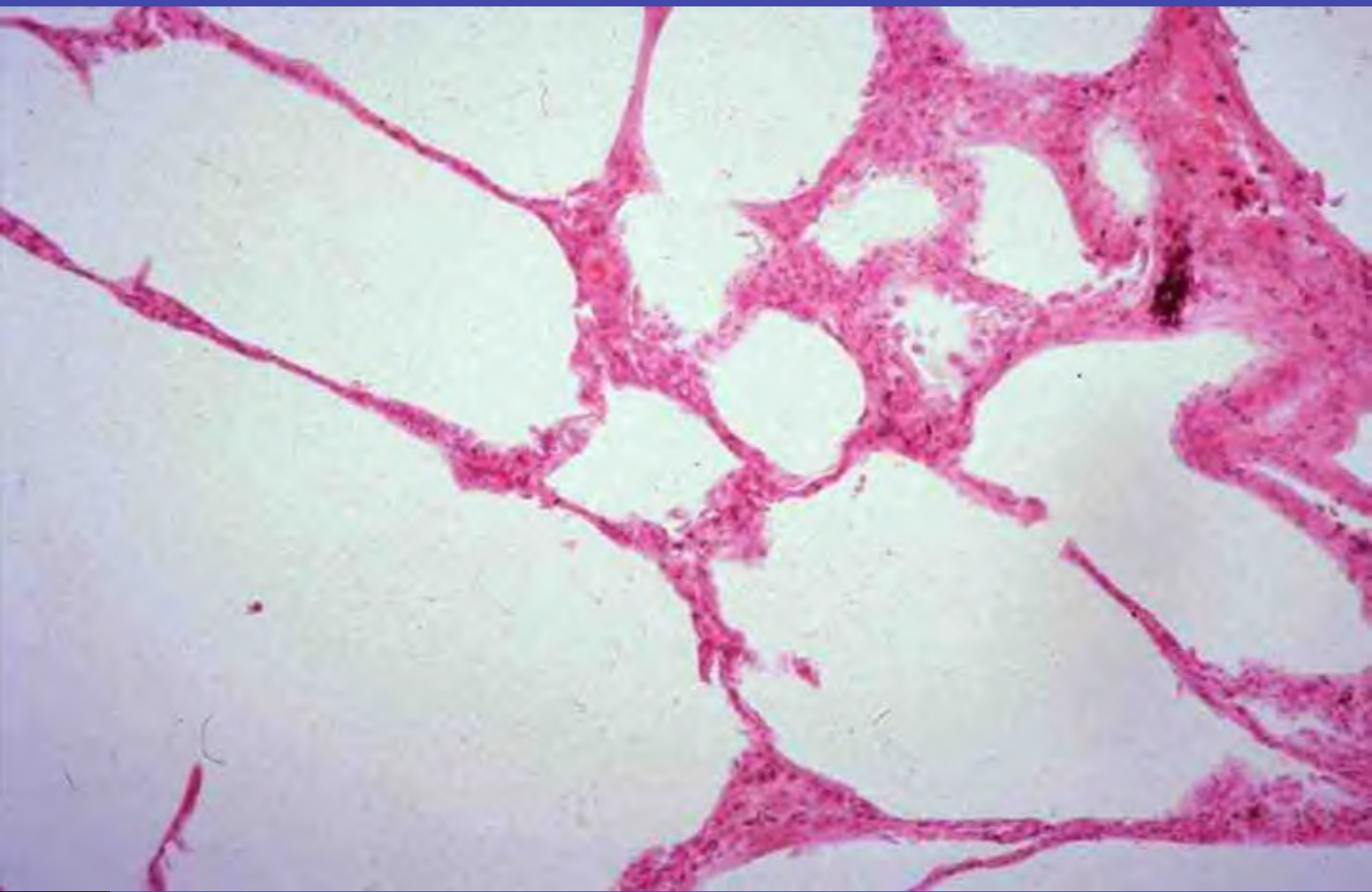




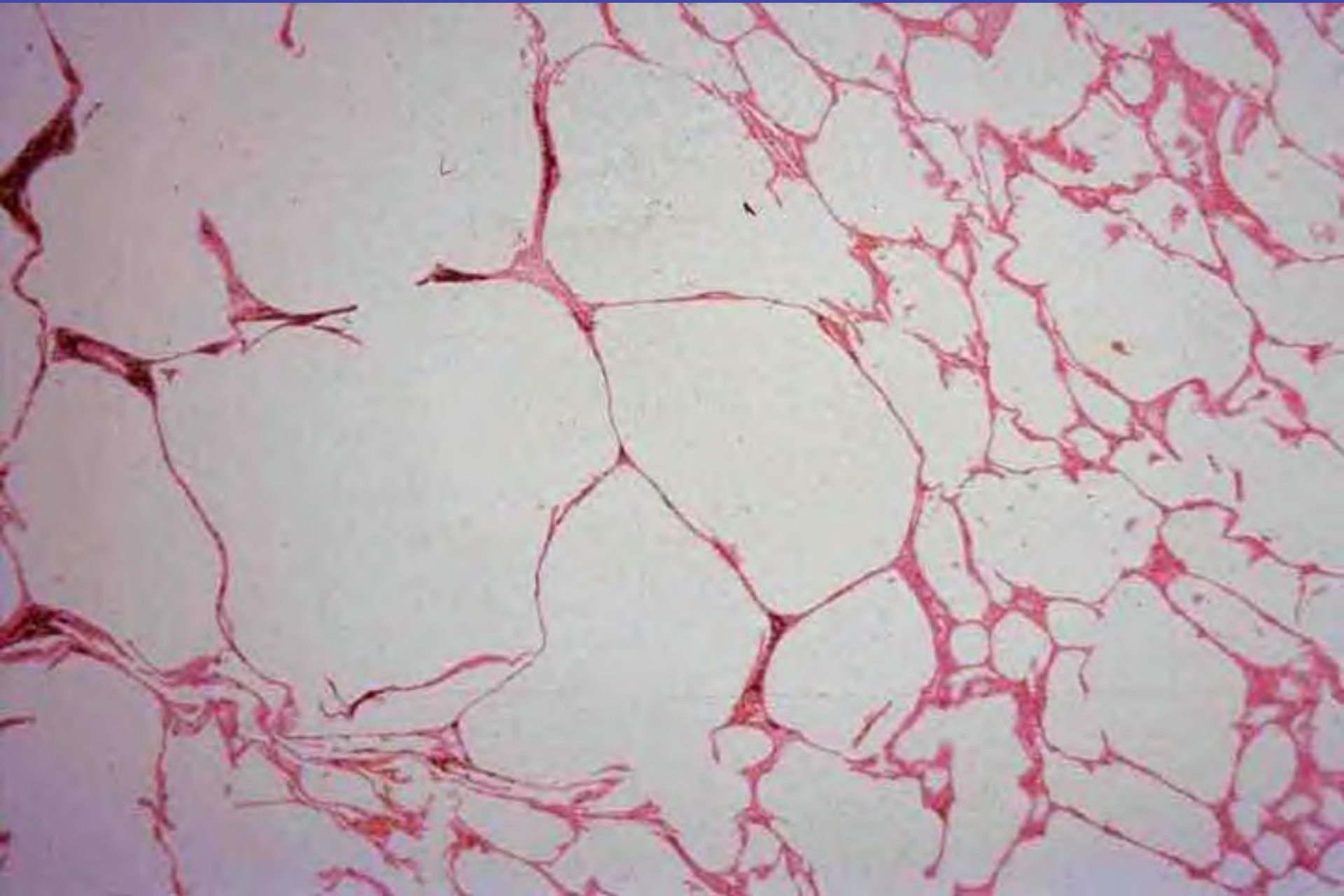


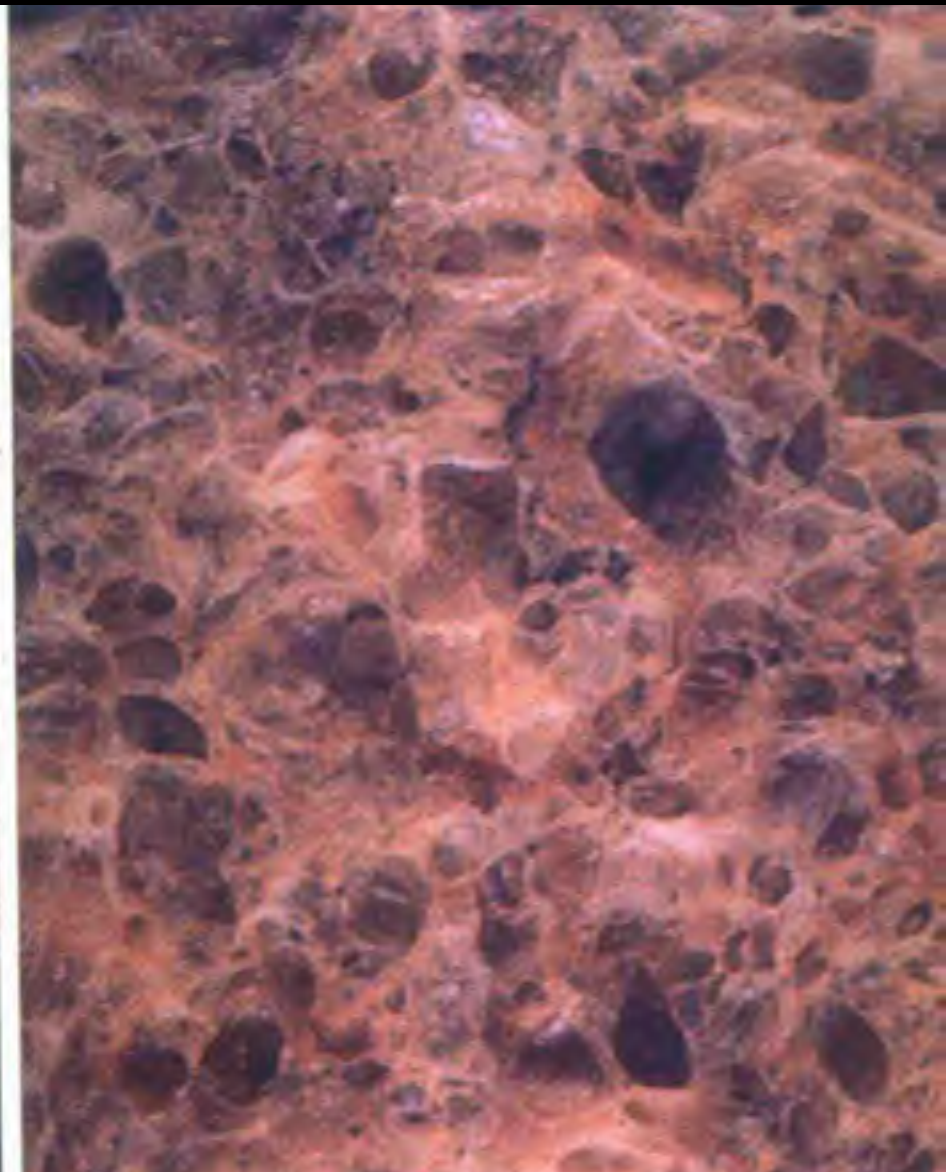
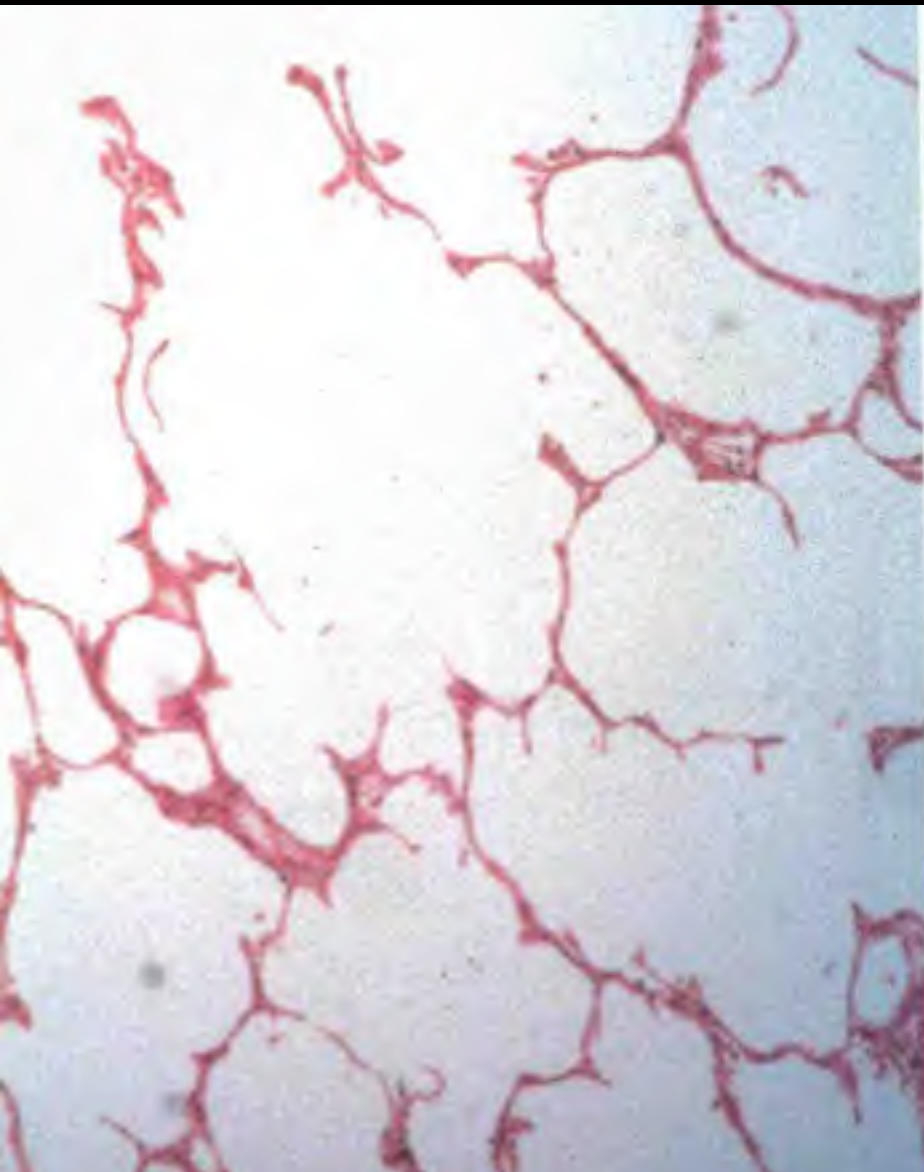












M-2 Respiratory Laboratory - 2

59 Emphysema

67 Bronchiectasis

68 Asthma

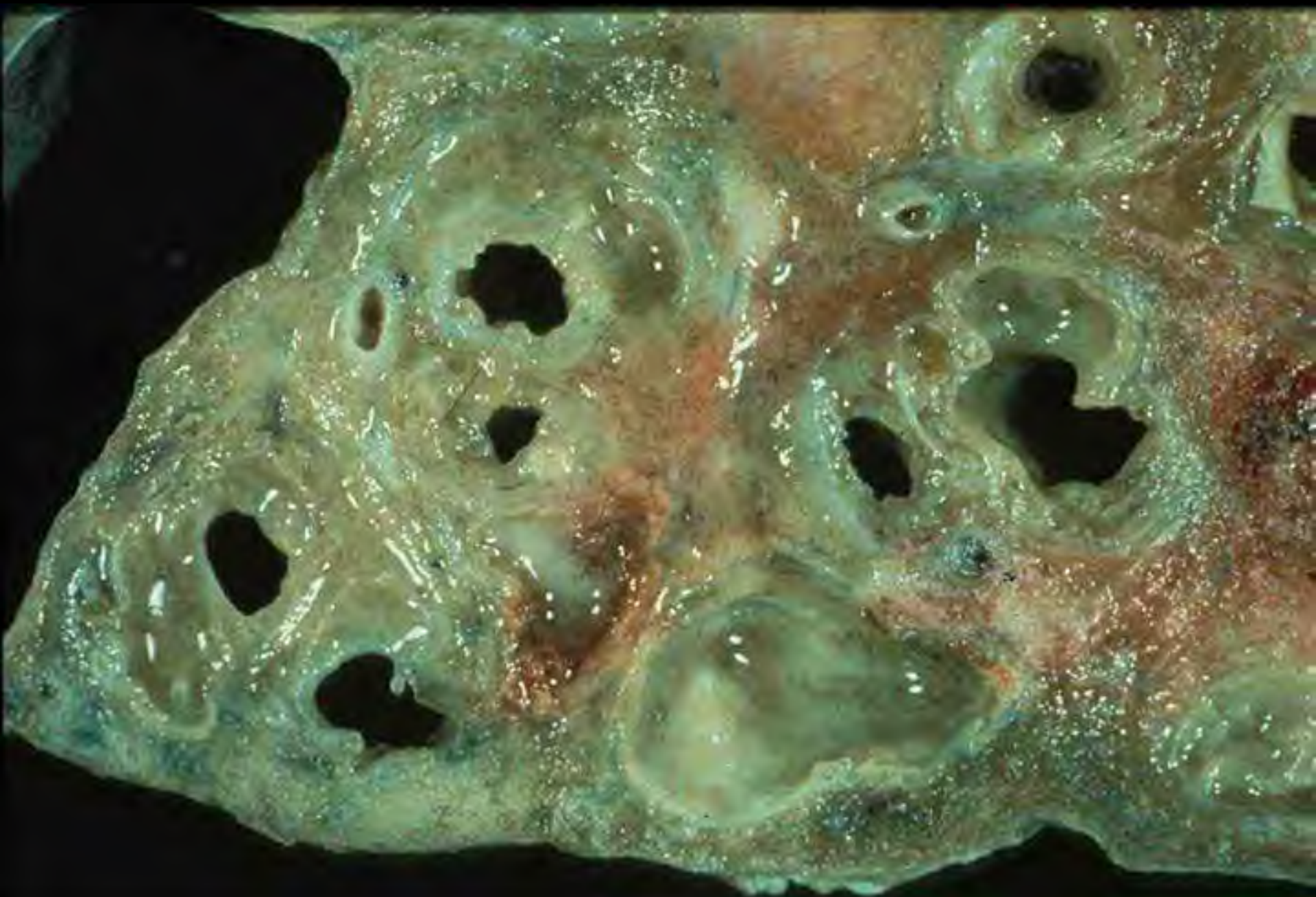
60 Asbestosis

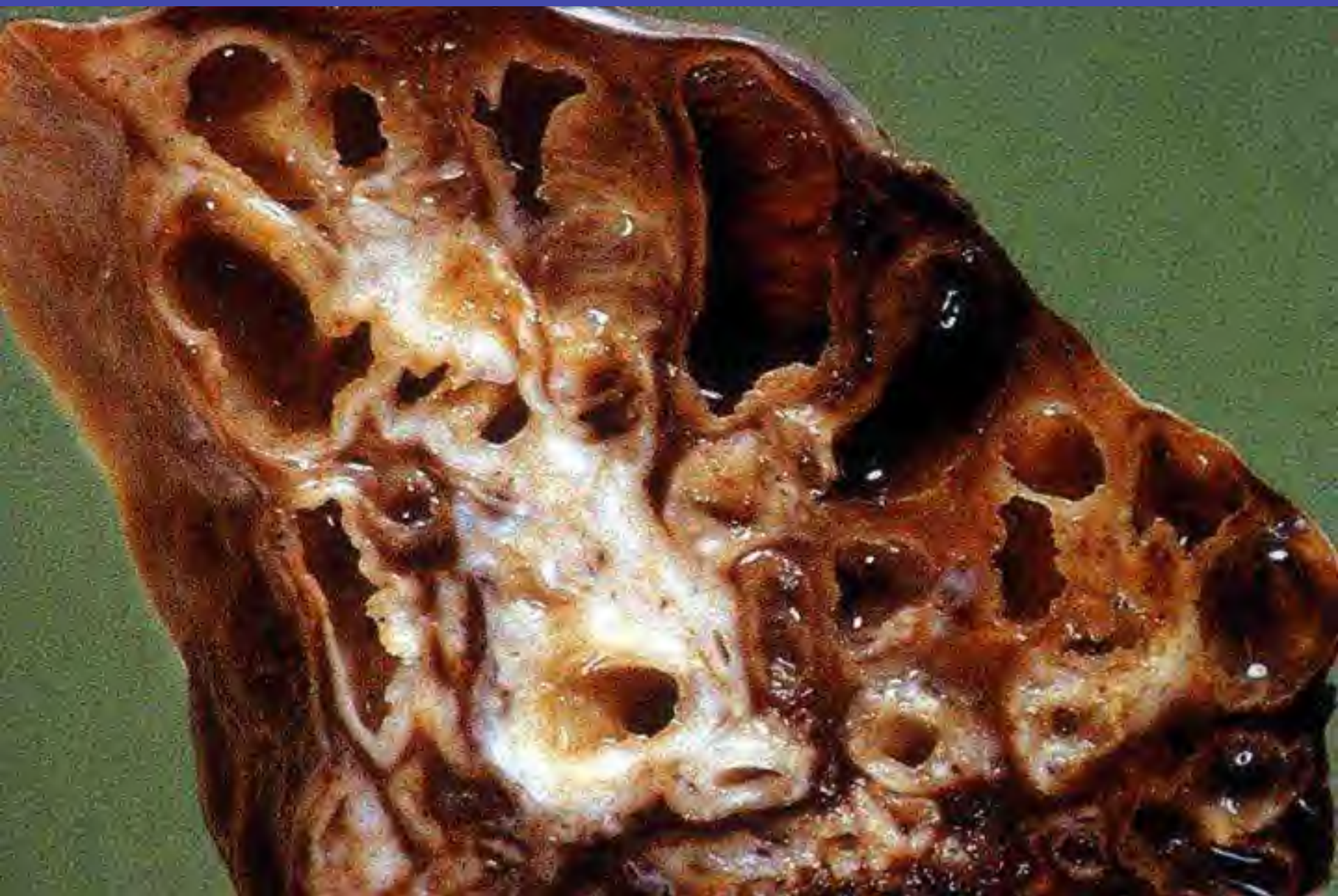
CPC



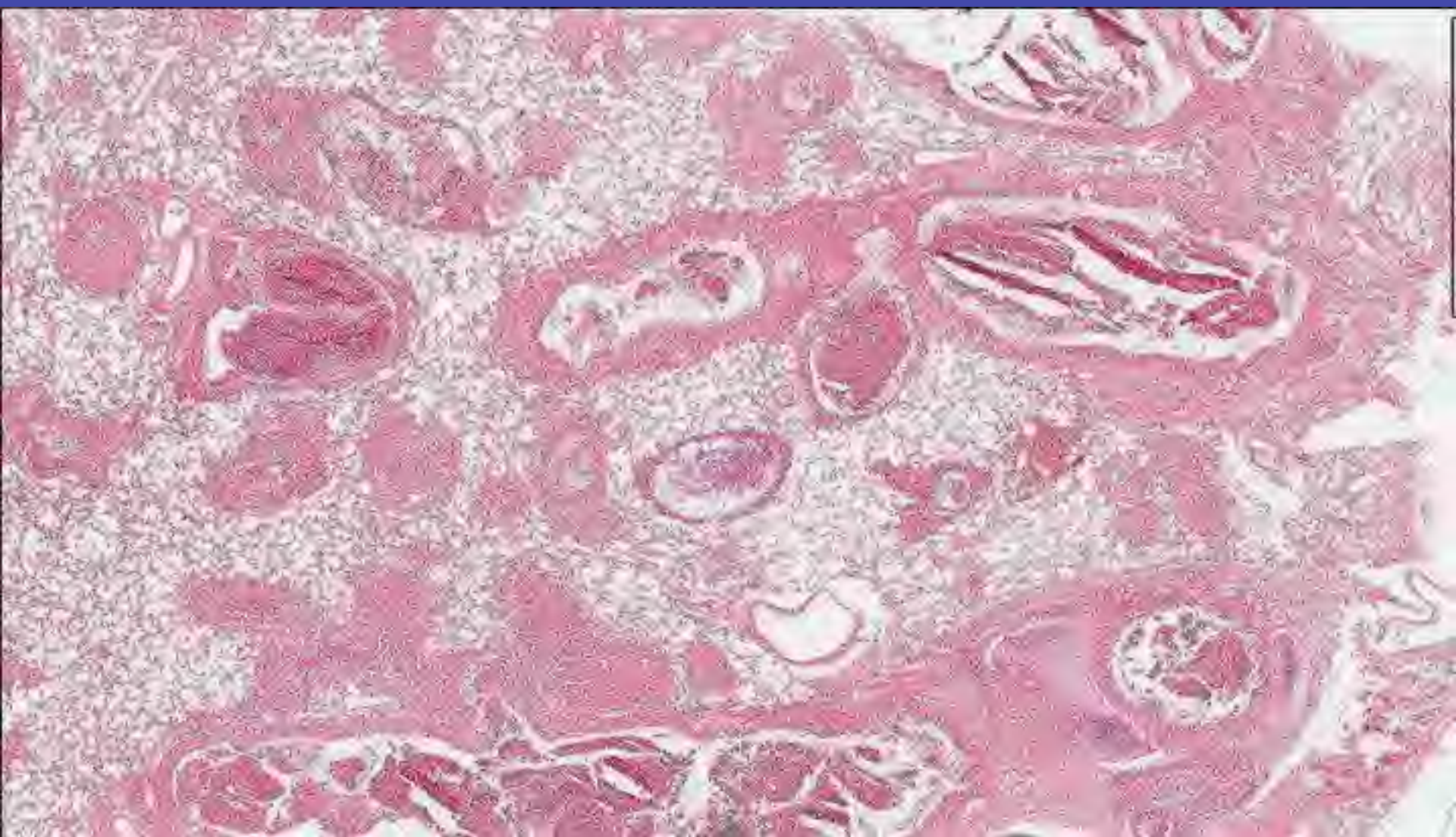


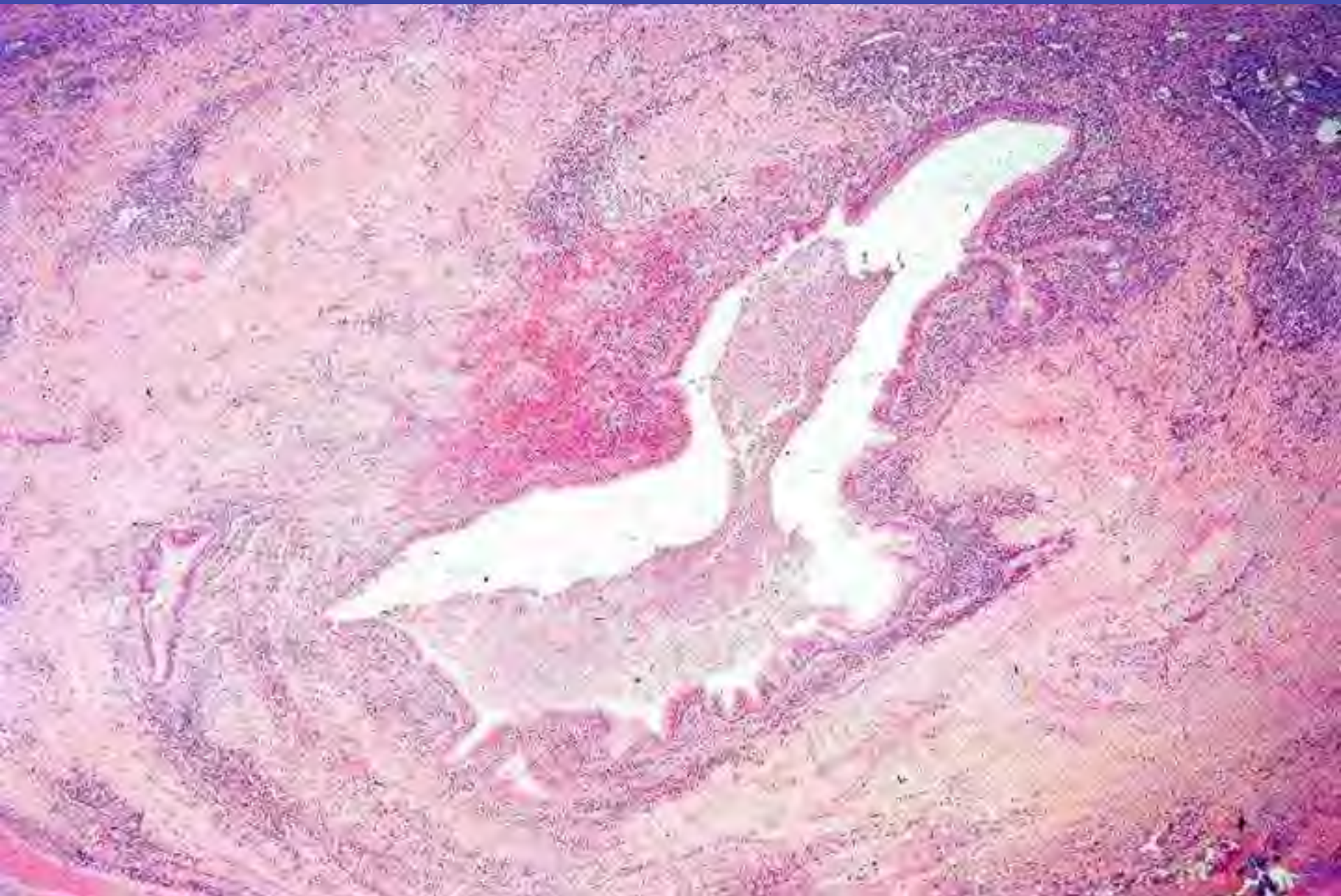


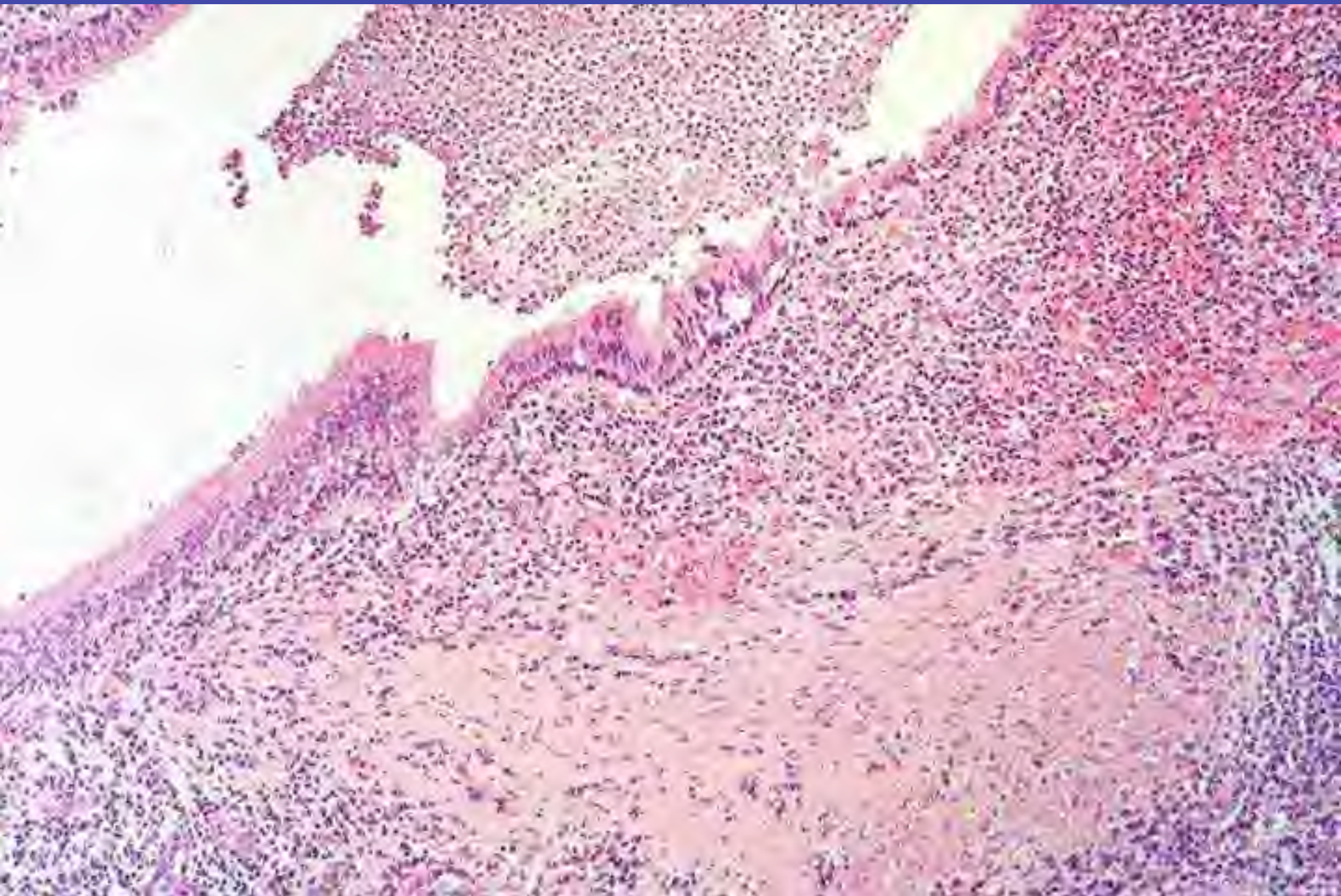


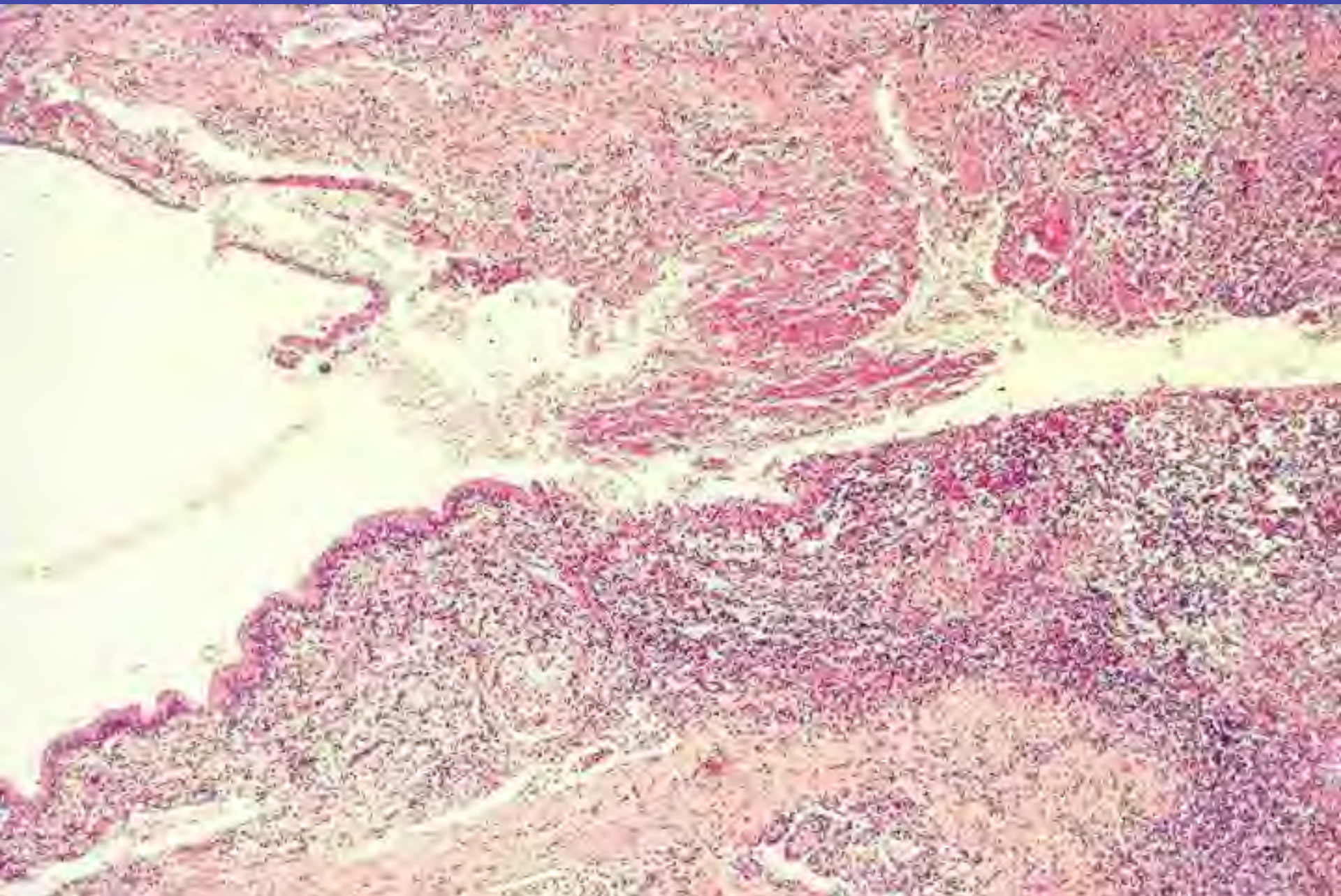


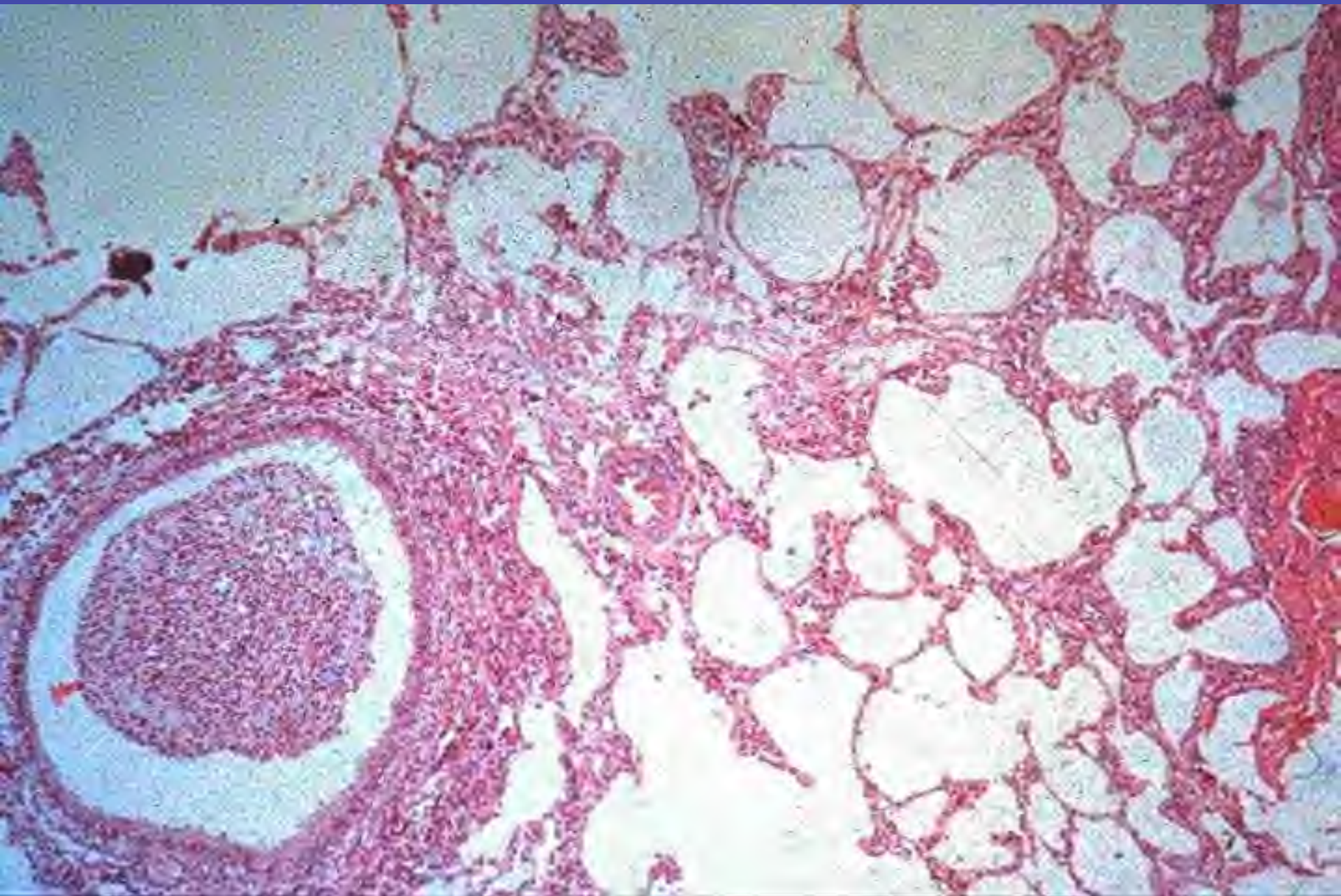


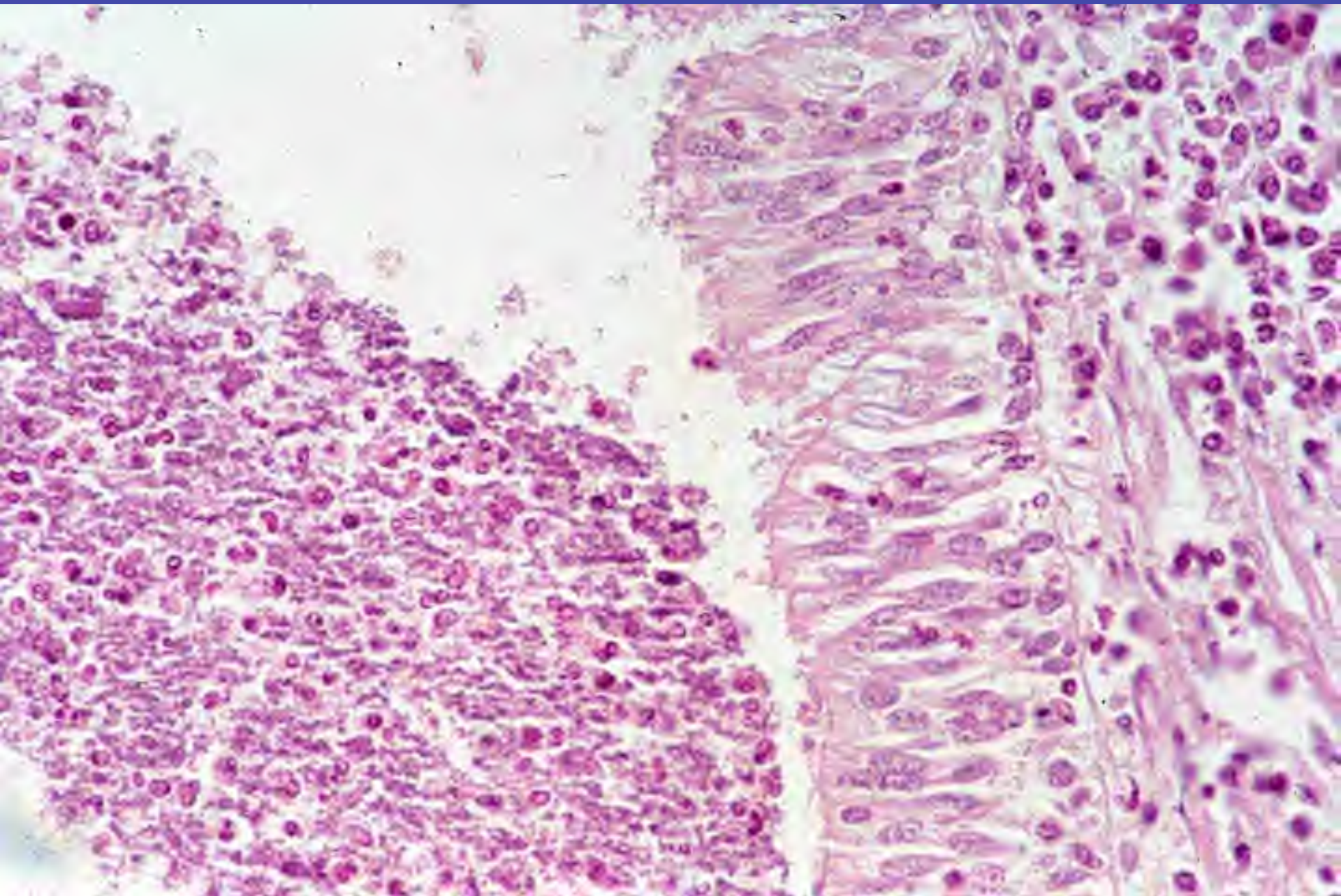












M-2 Respiratory Laboratory - 2

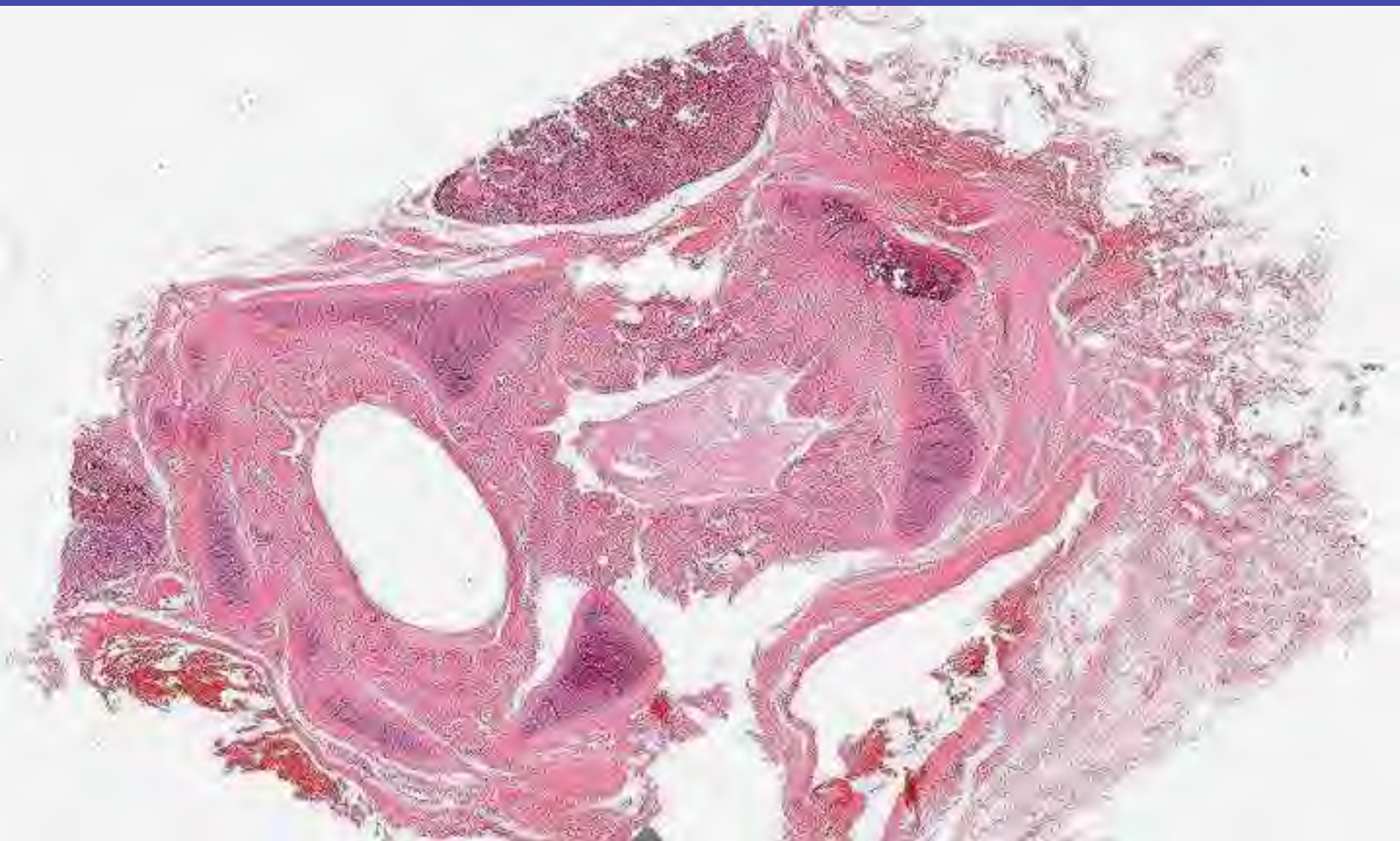
59 Emphysema

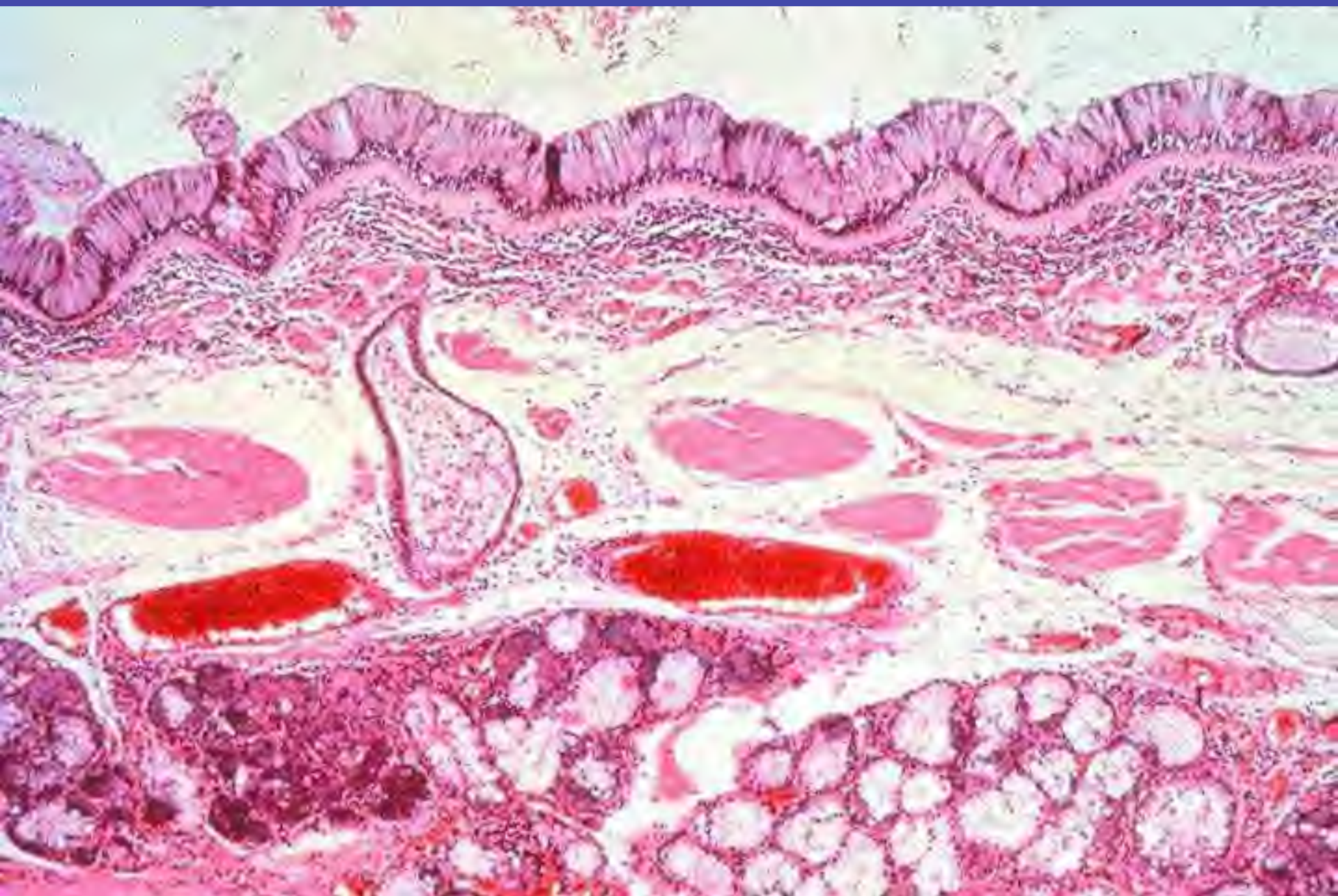
67 Bronchiectasis

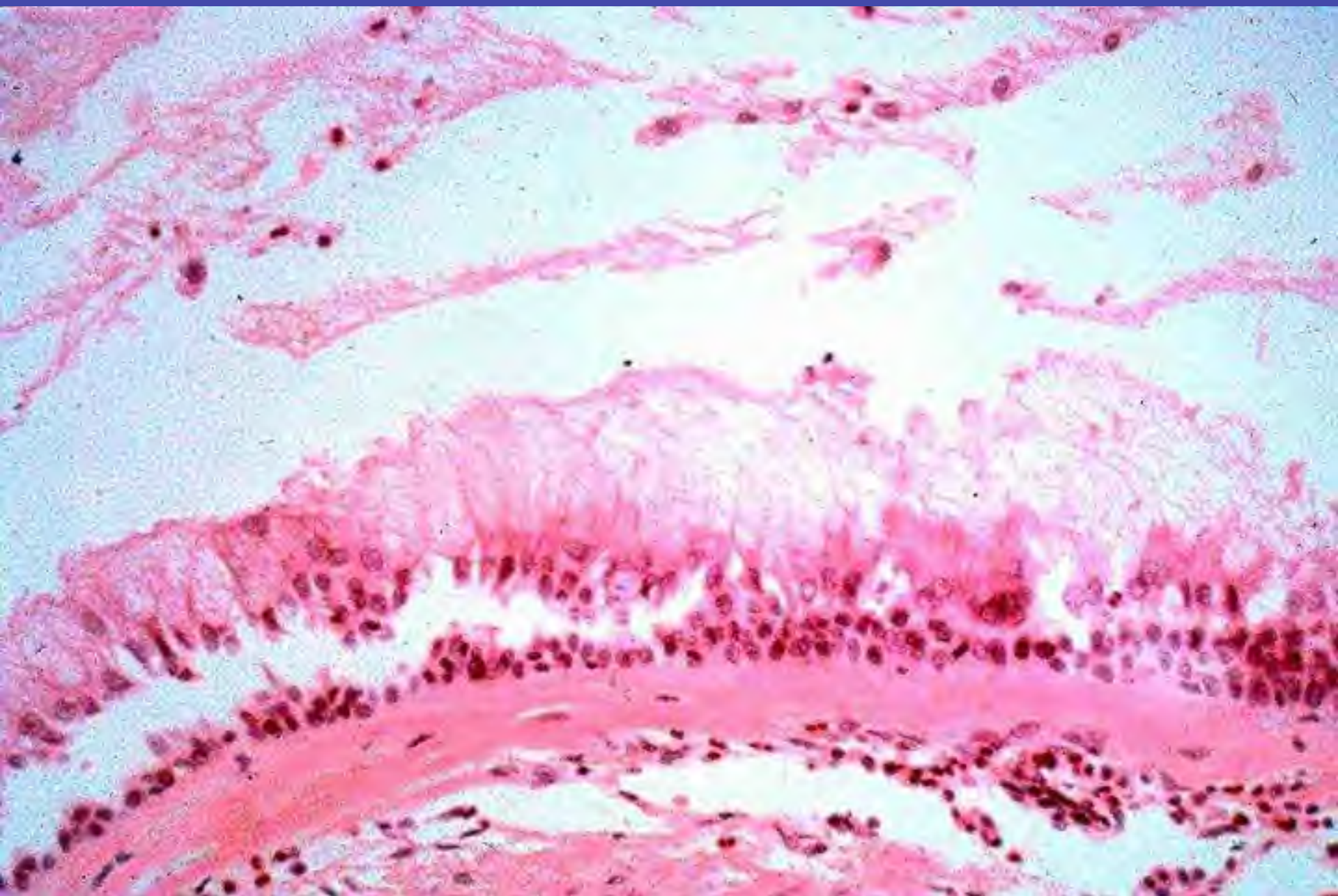
68 Asthma

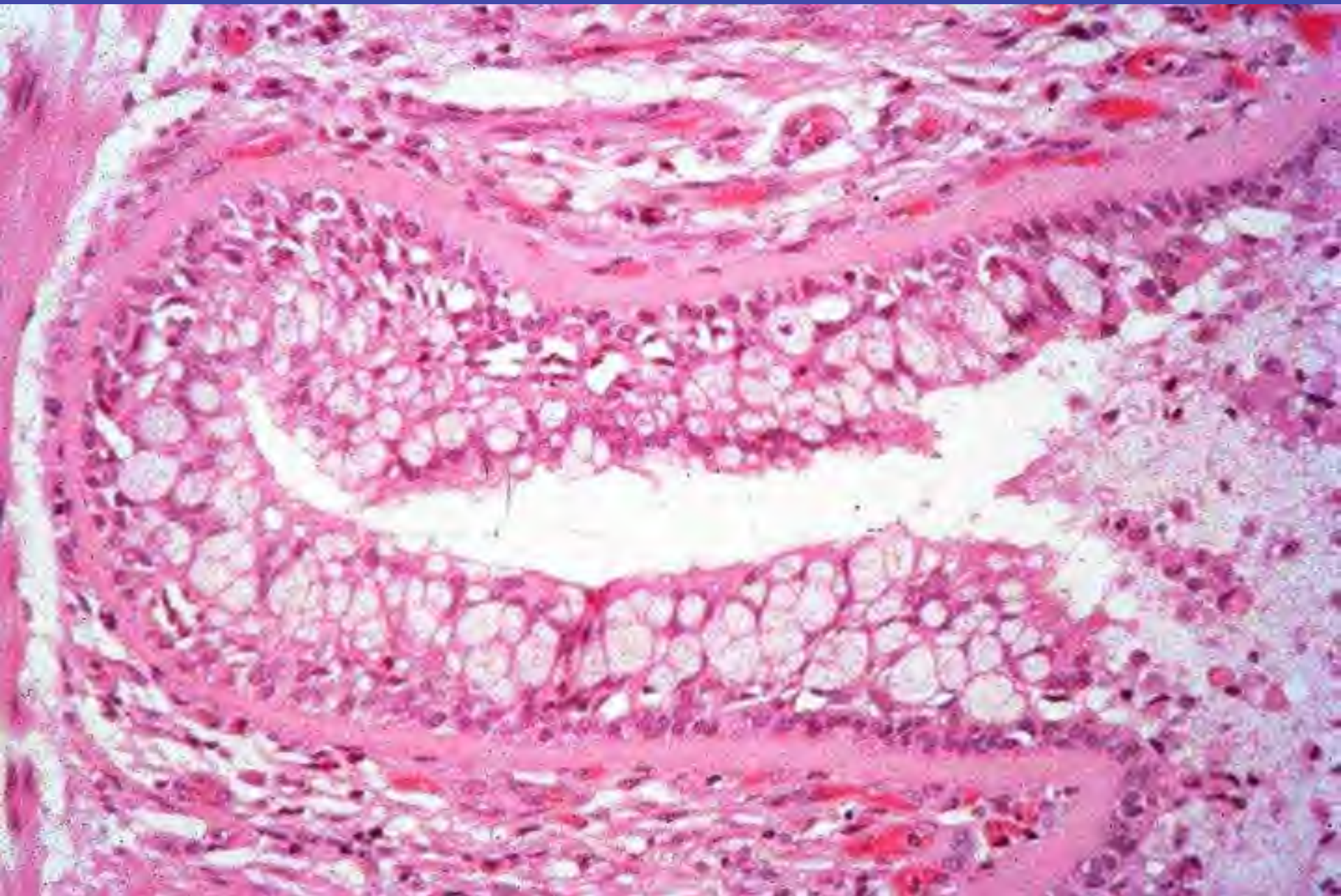
60 Asbestosis

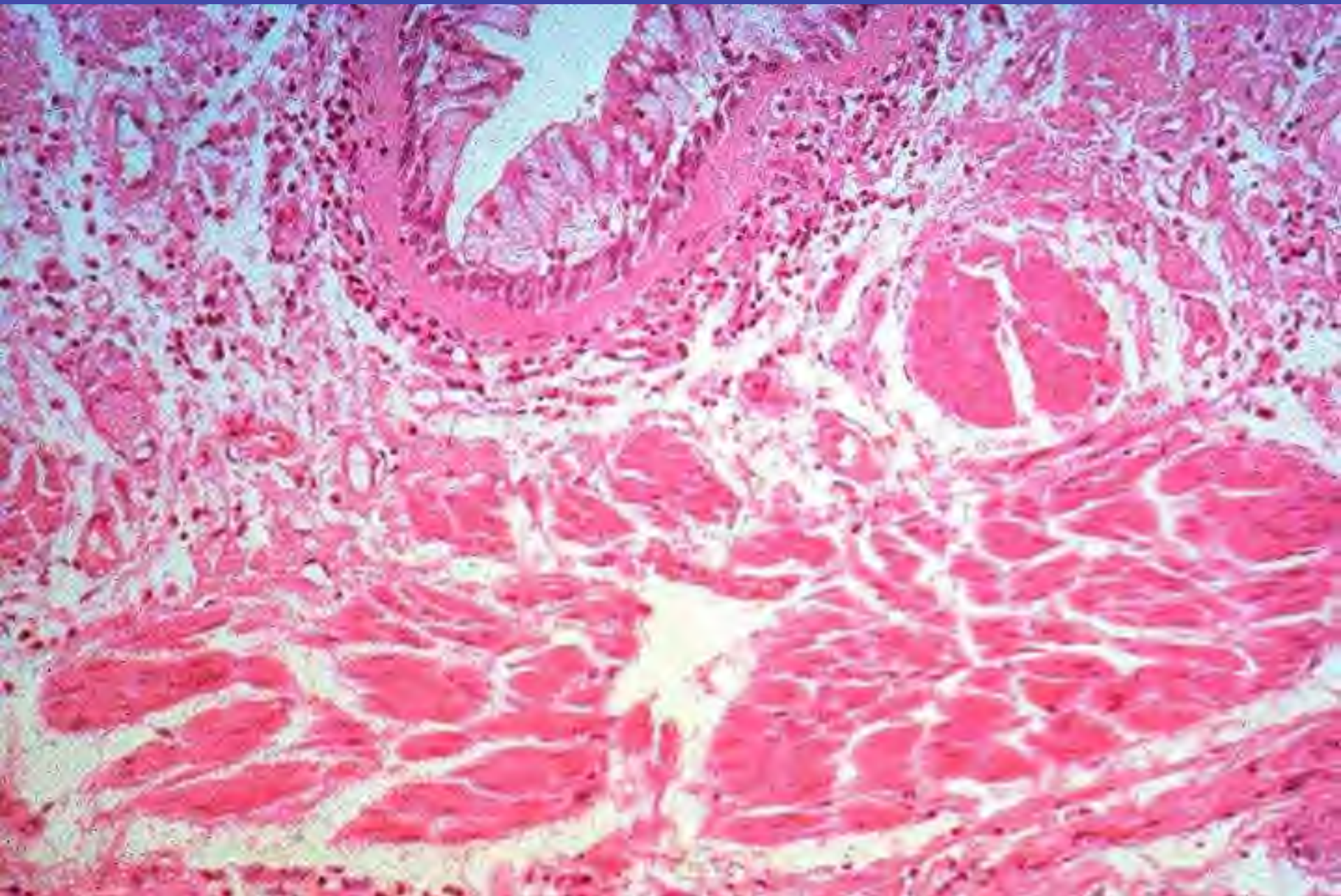
CPC

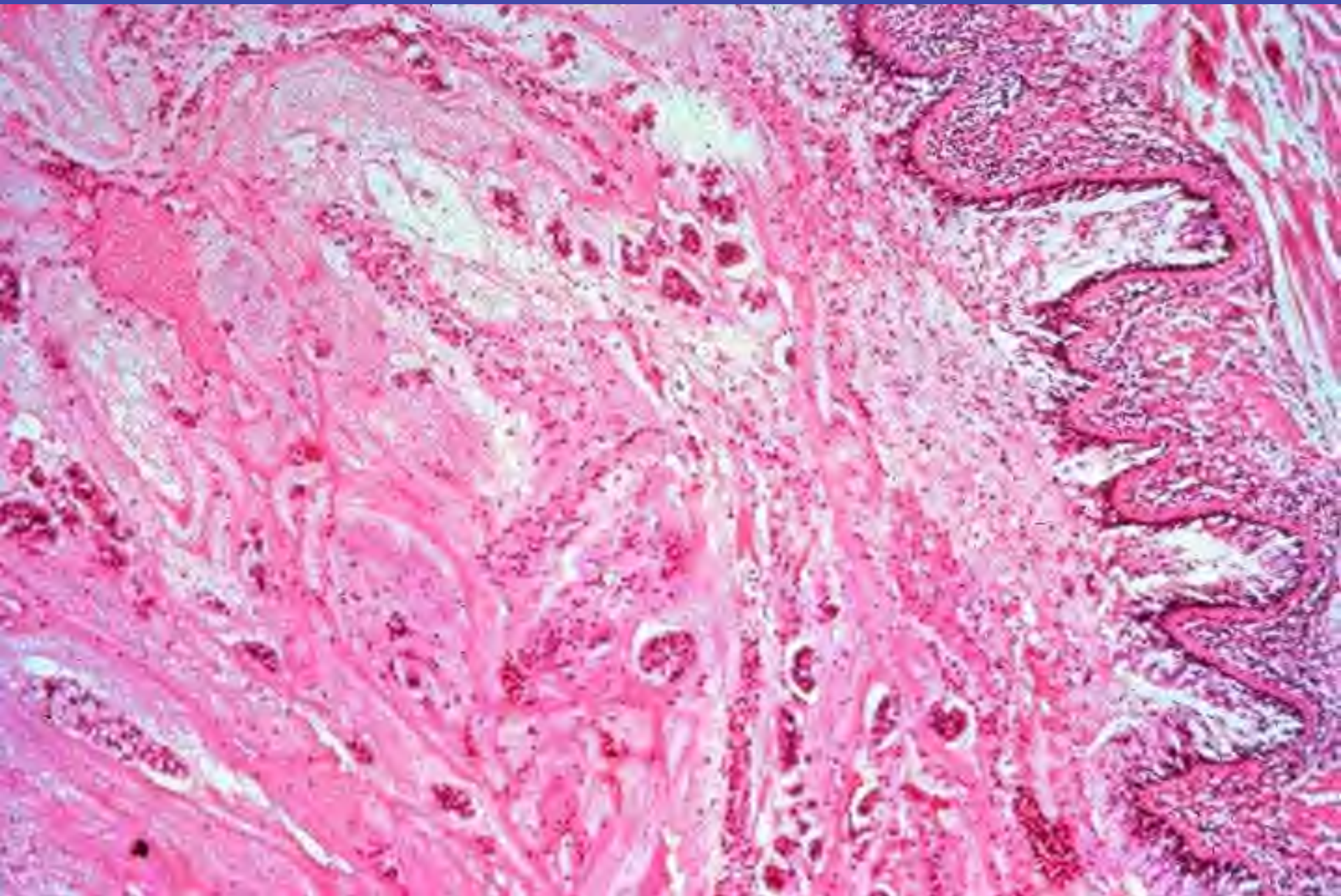


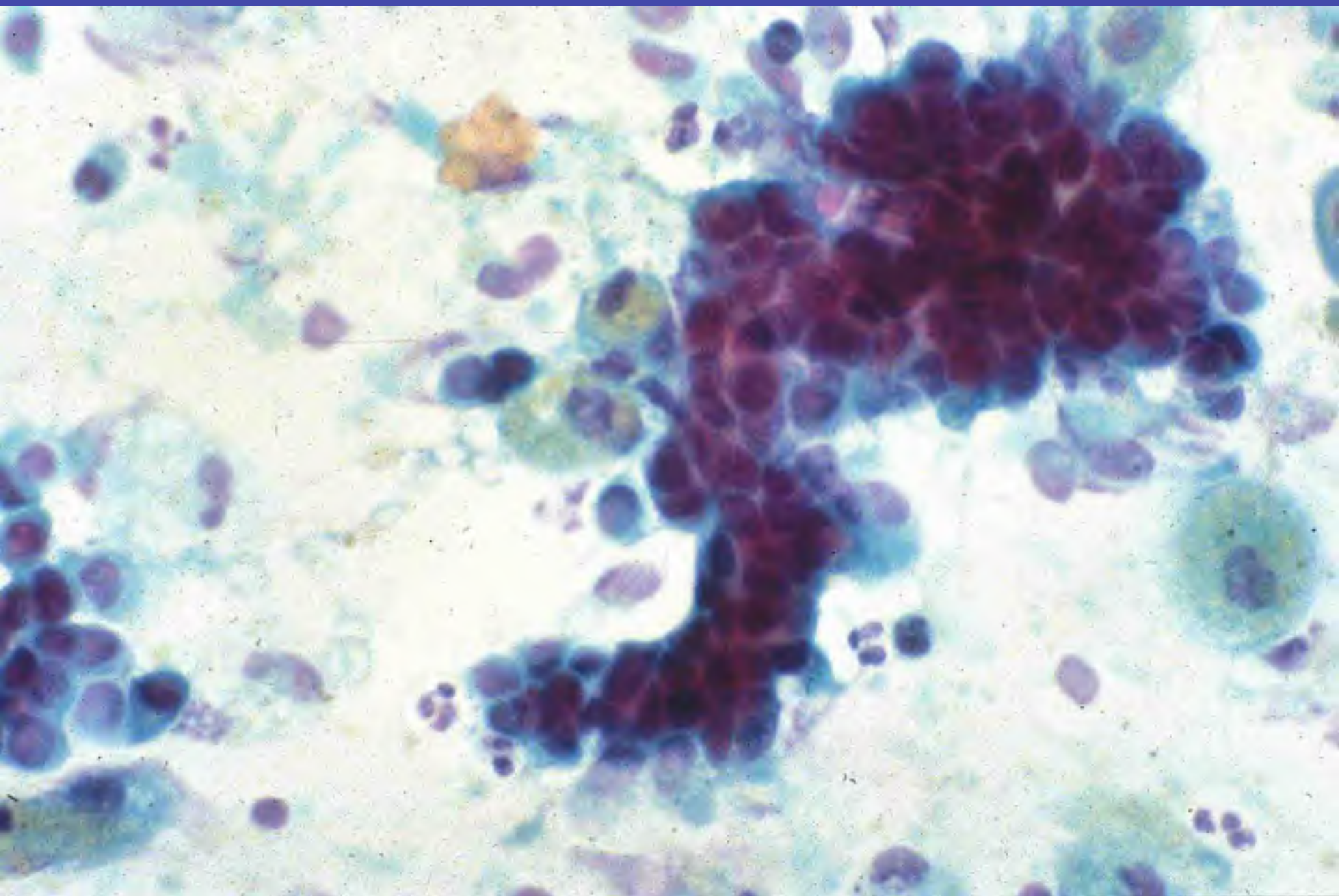


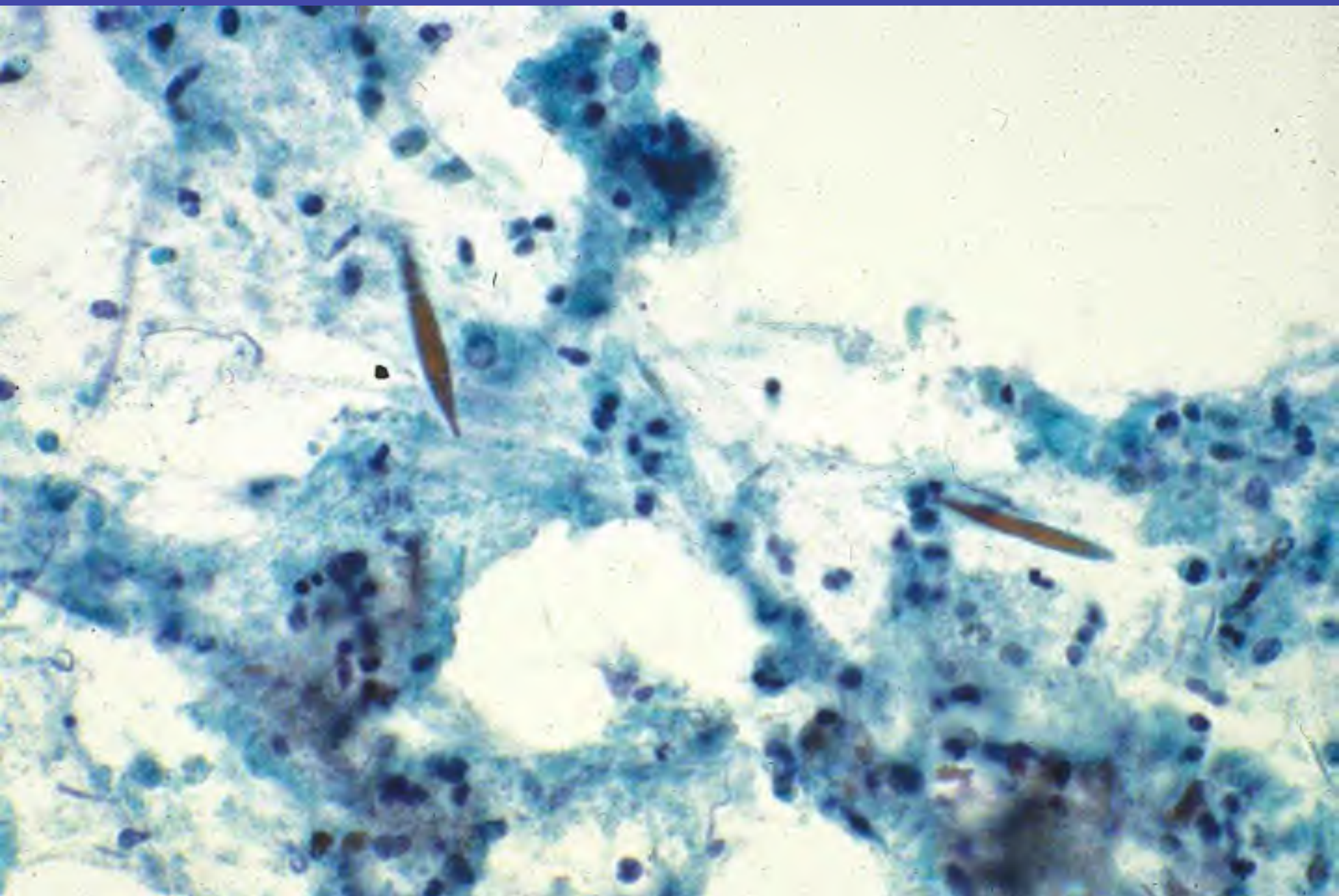


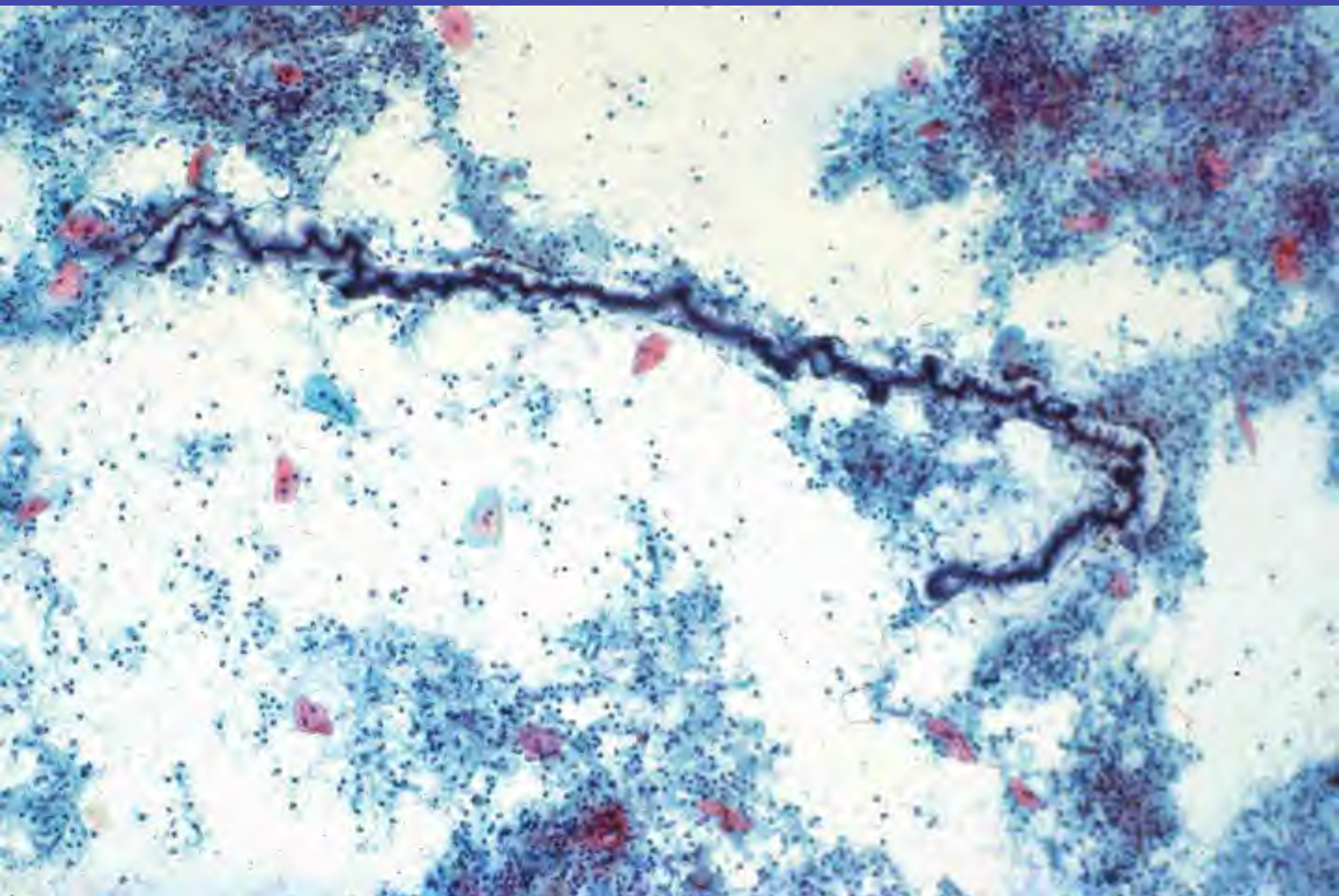


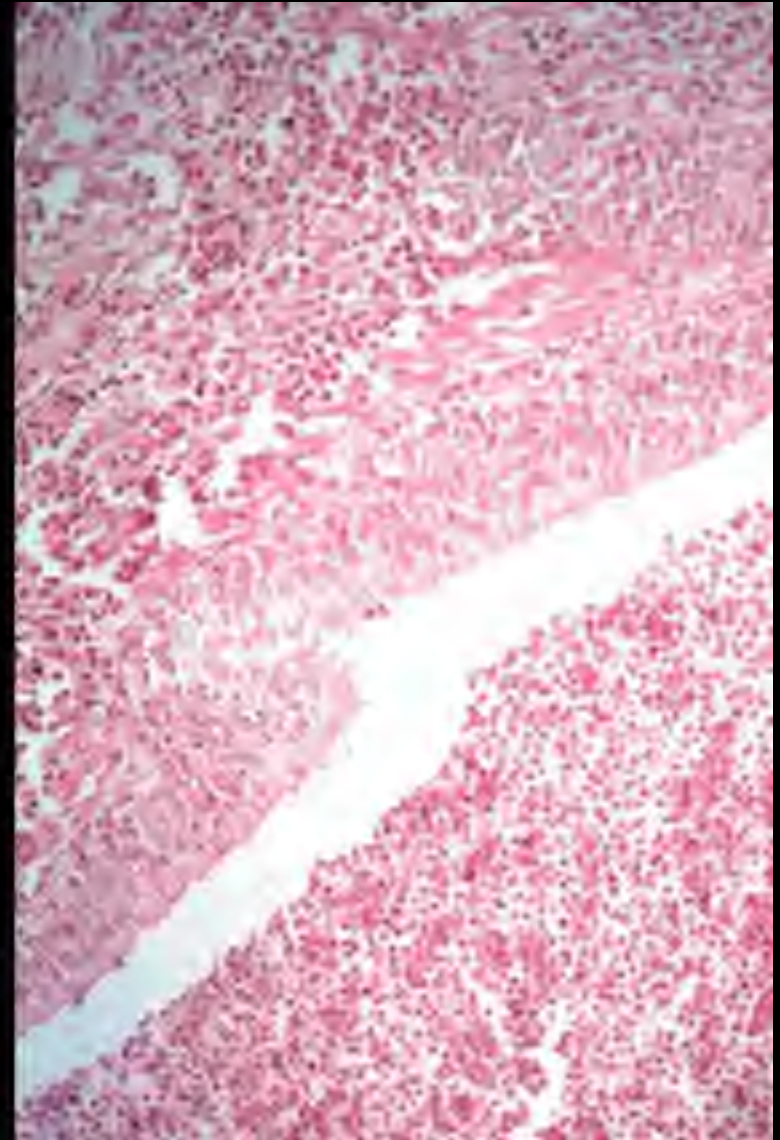
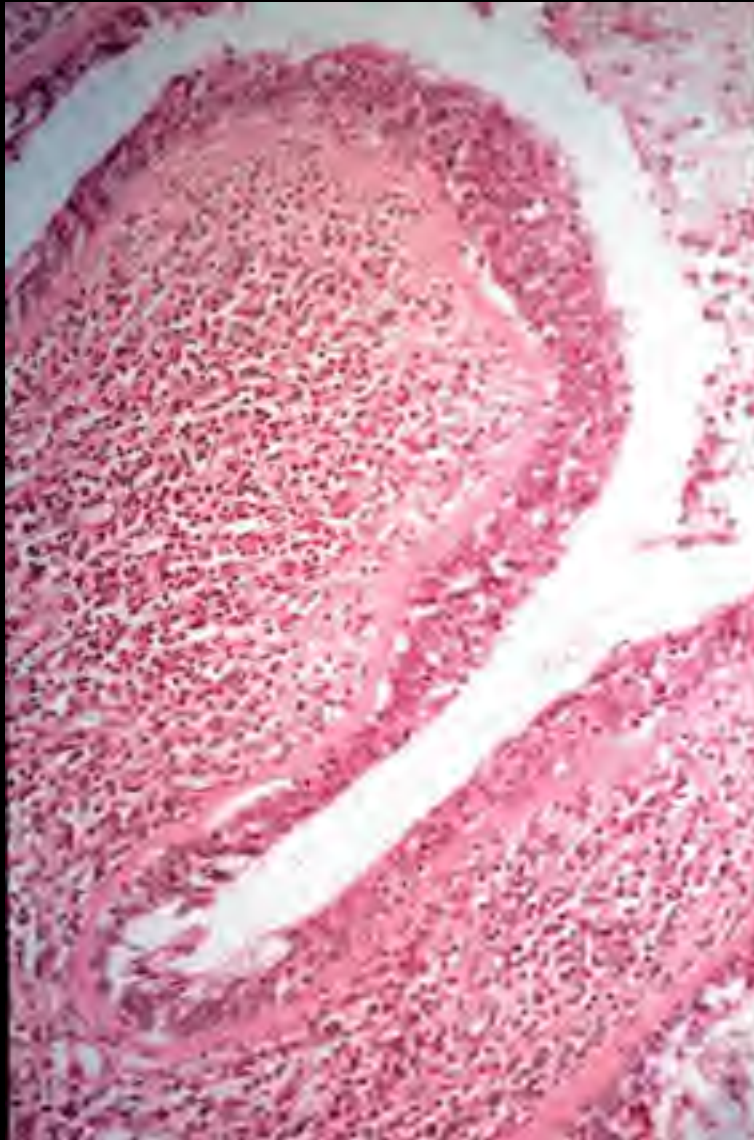












M-2 Respiratory Laboratory - 2

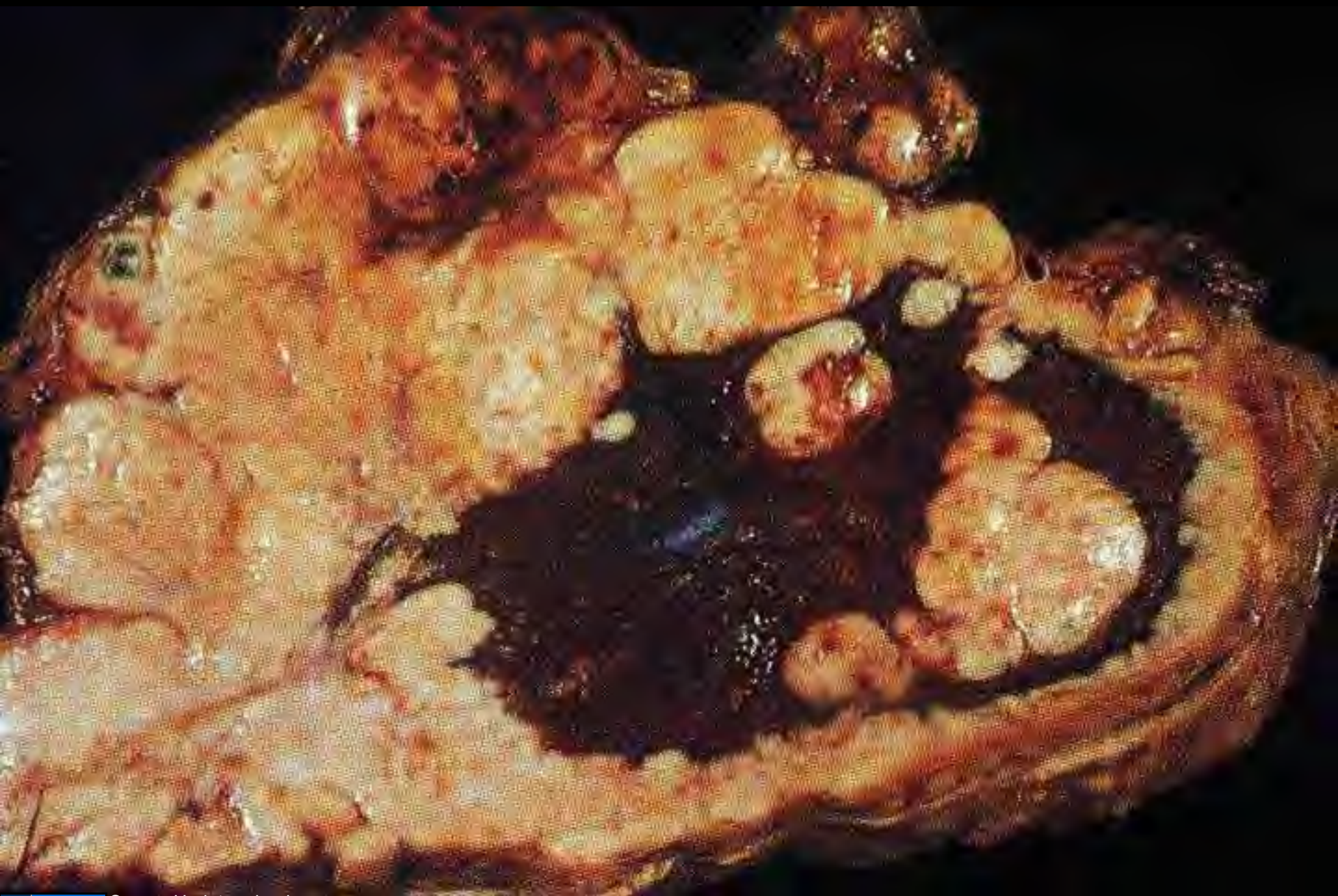
59 Emphysema

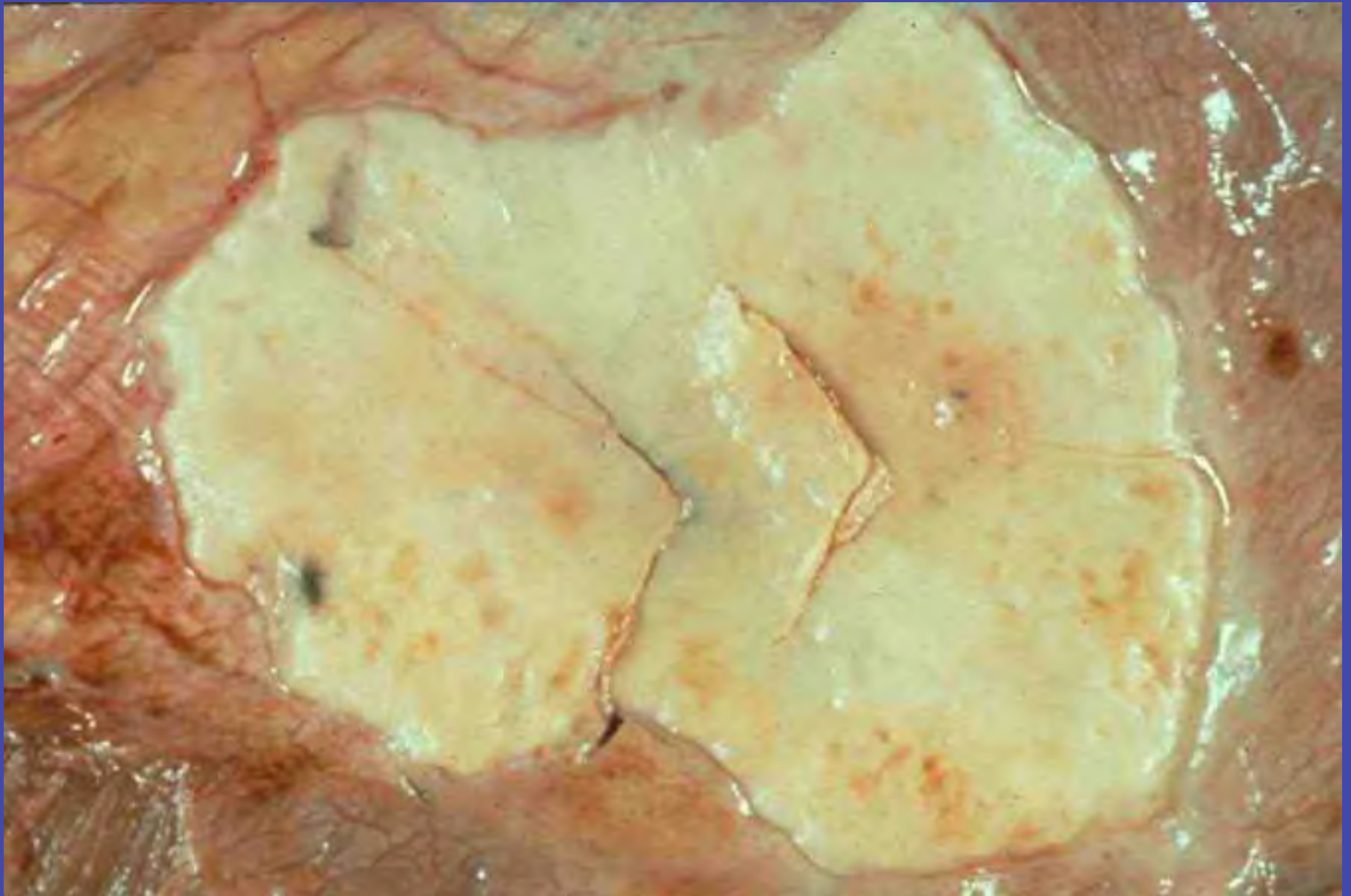
67 Bronchiectasis

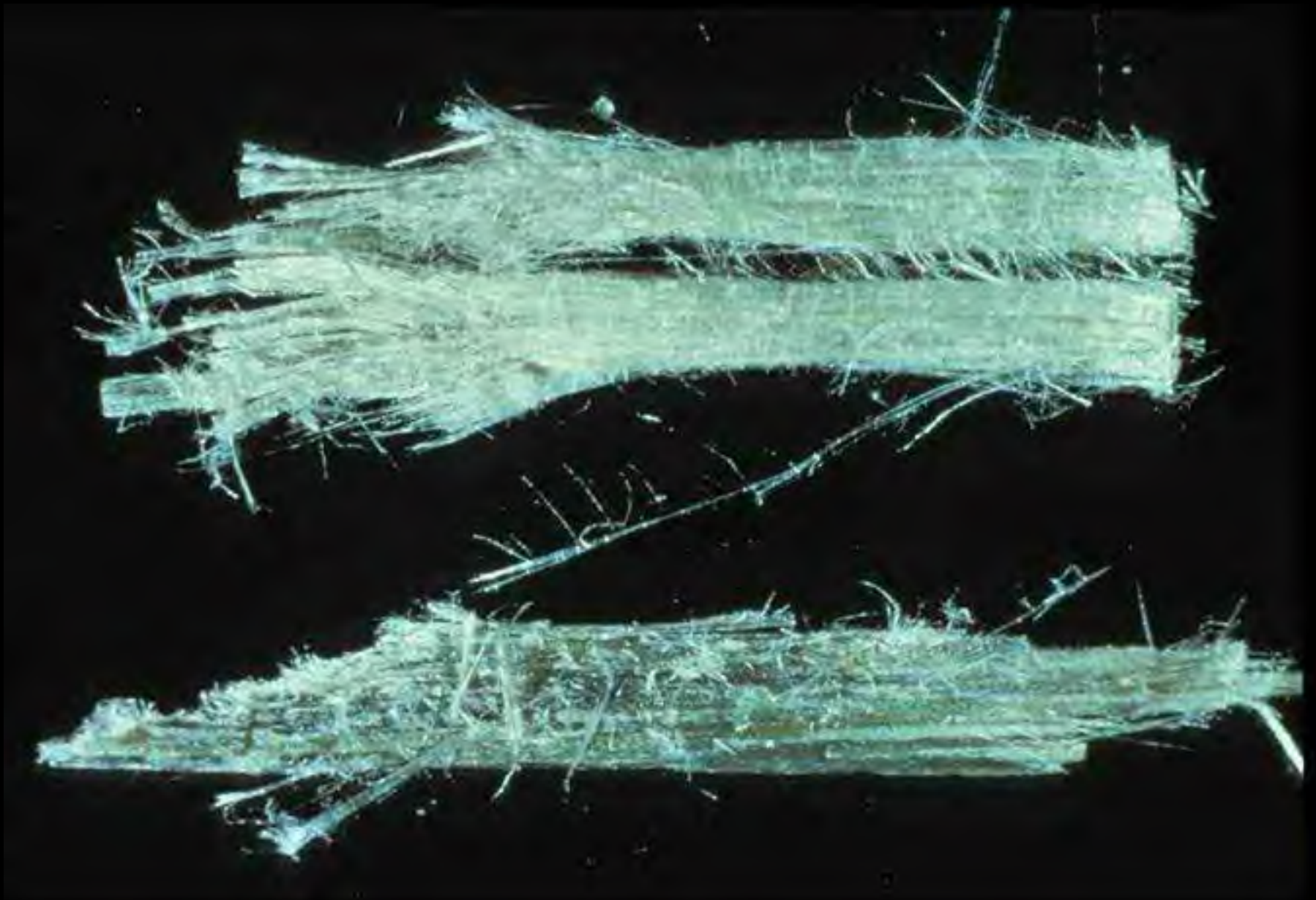
68 Asthma

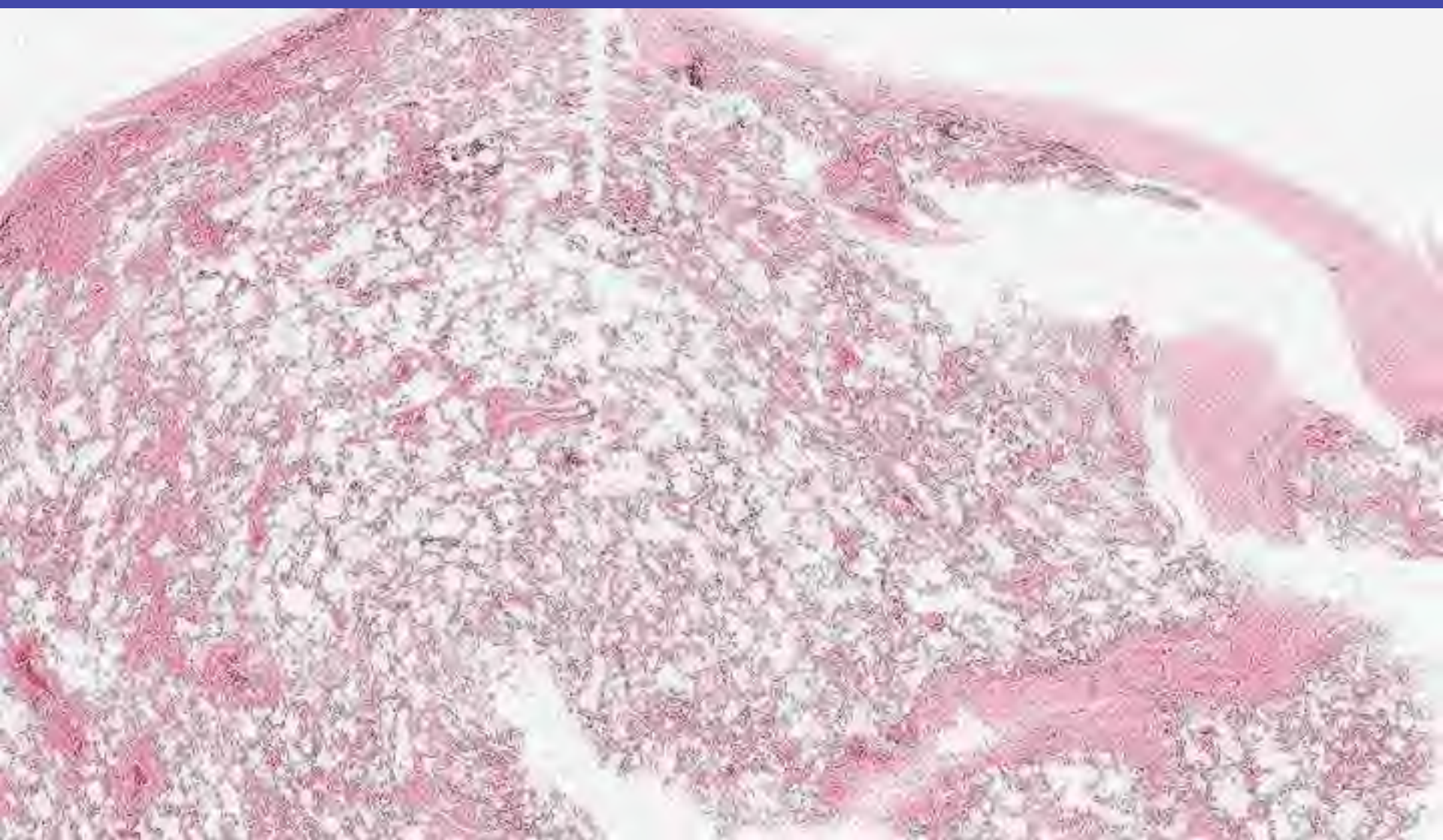
60 Asbestosis

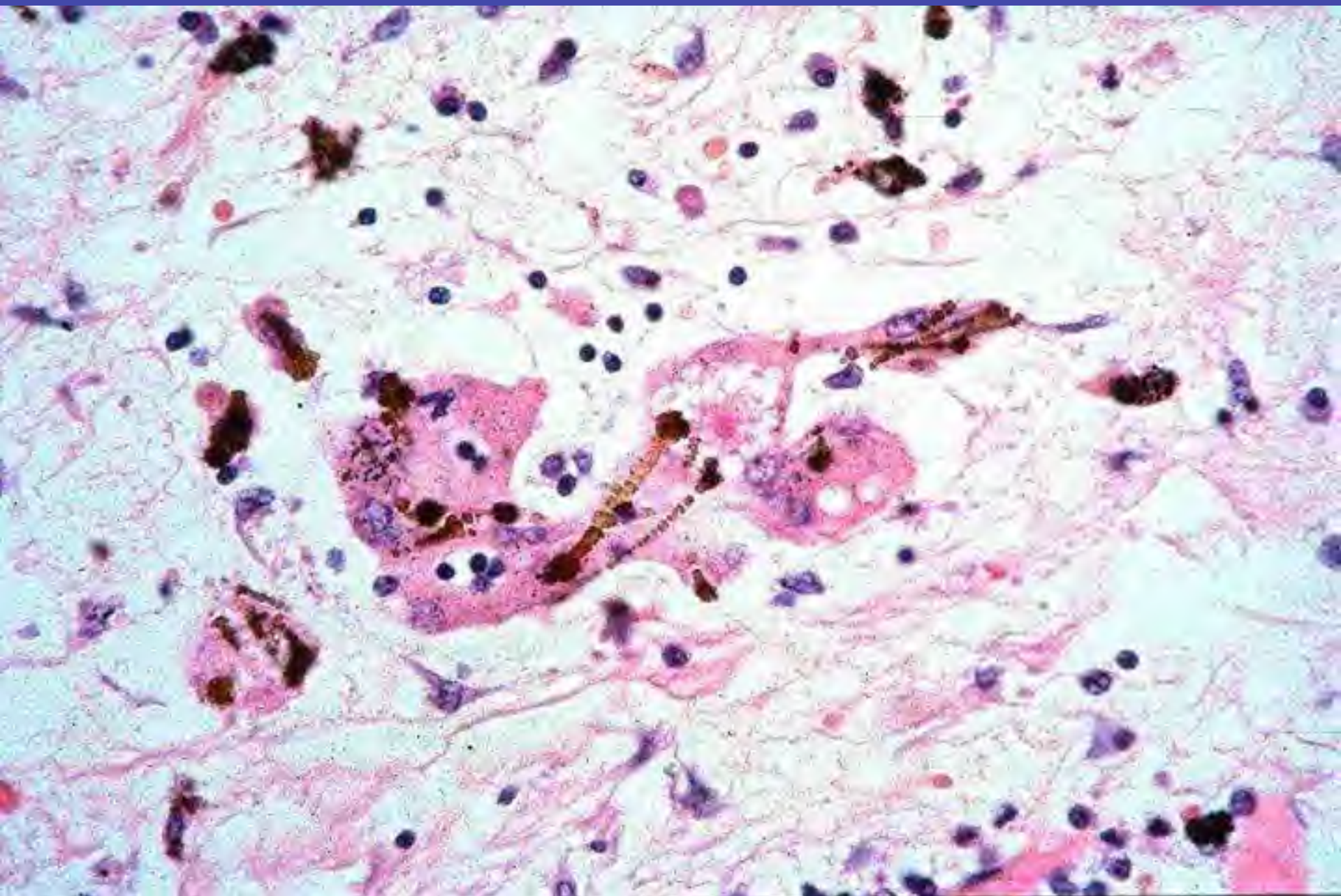
CPC

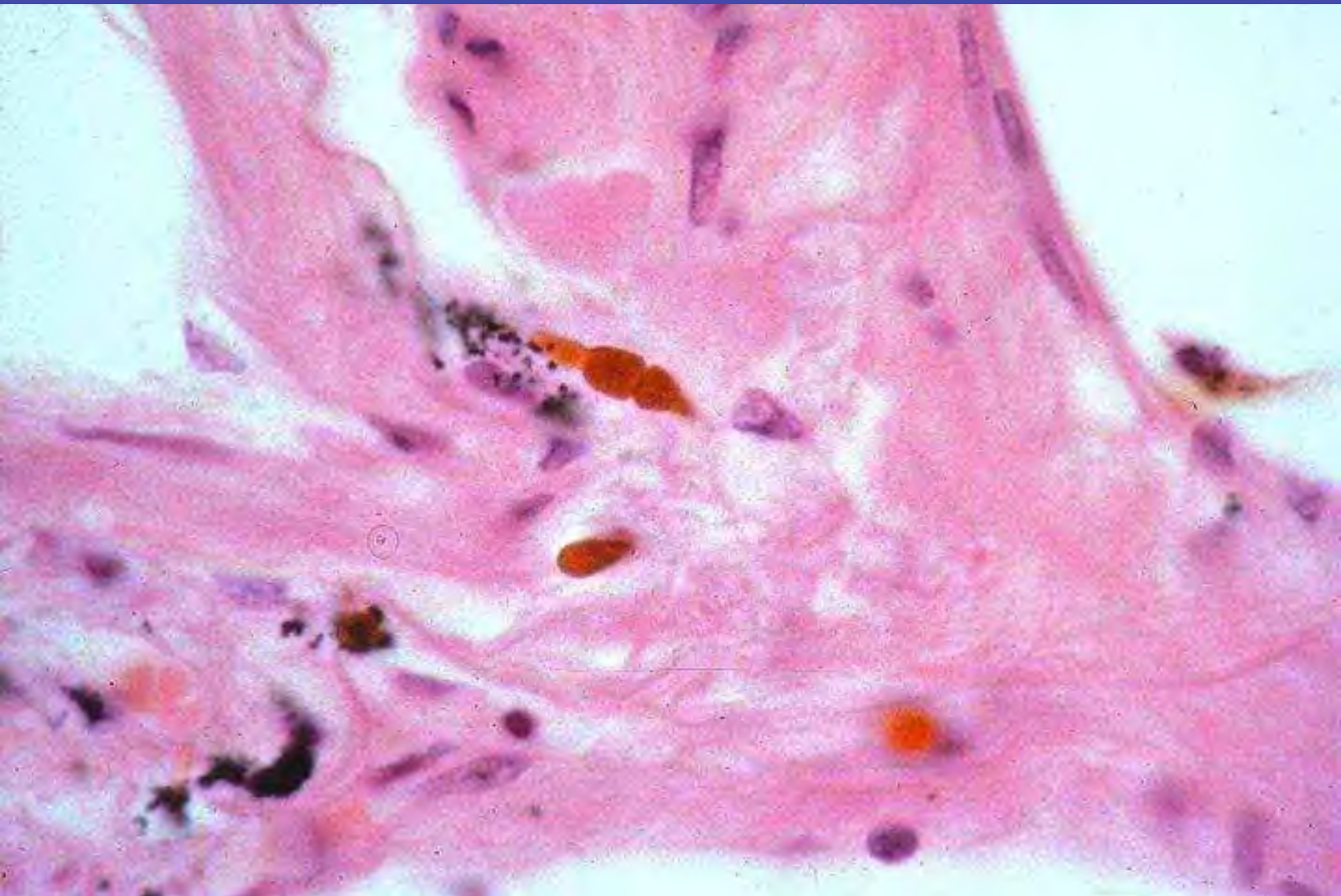












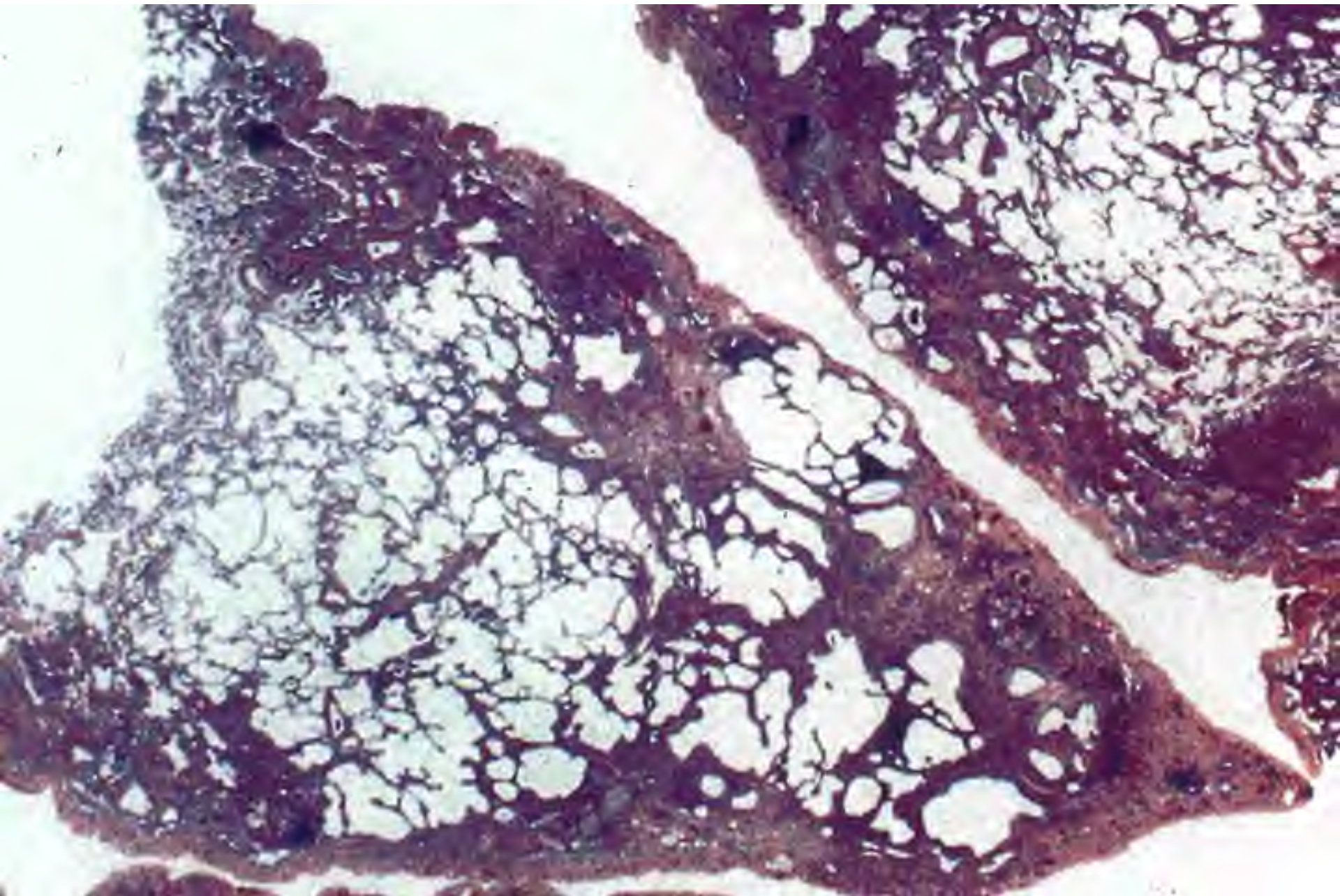


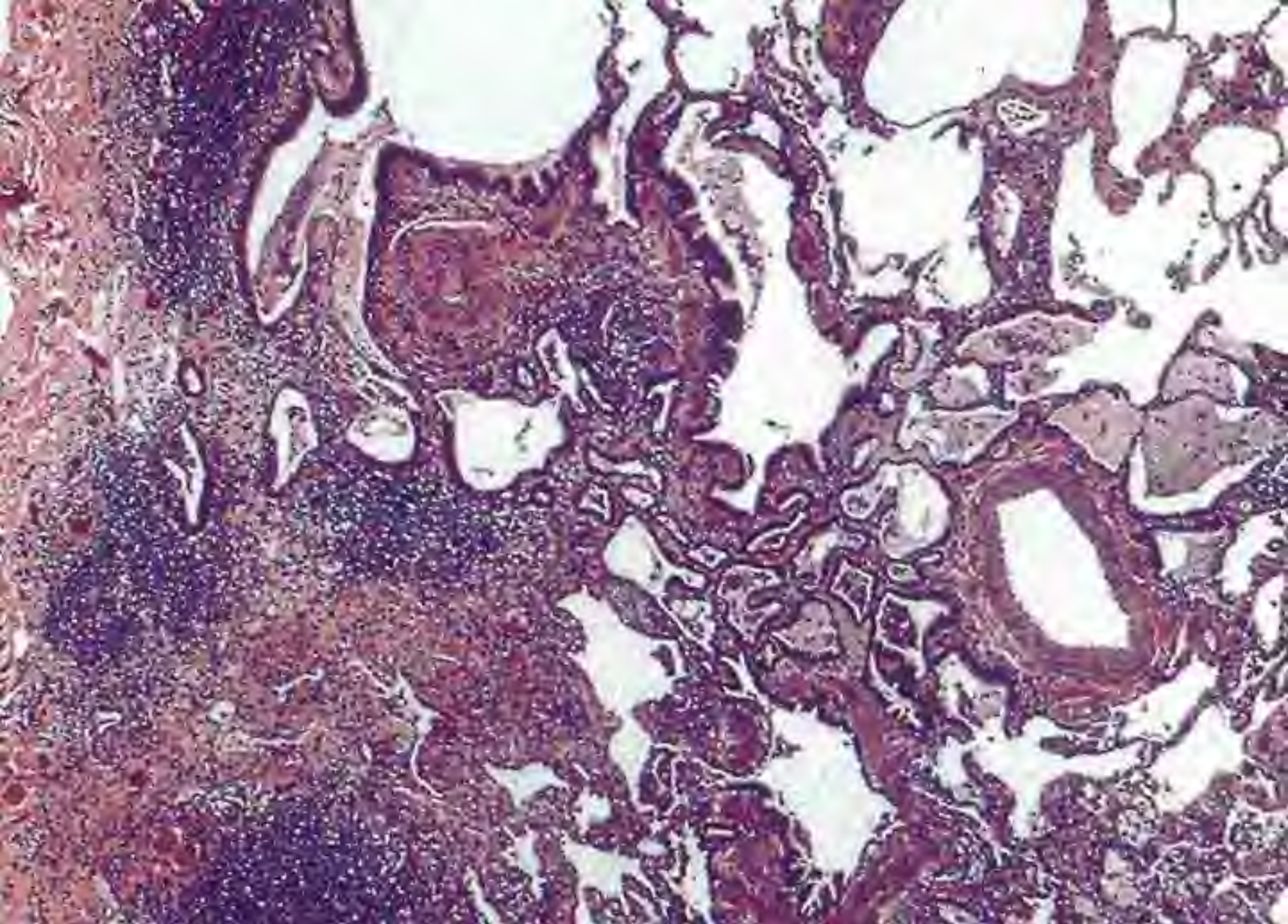


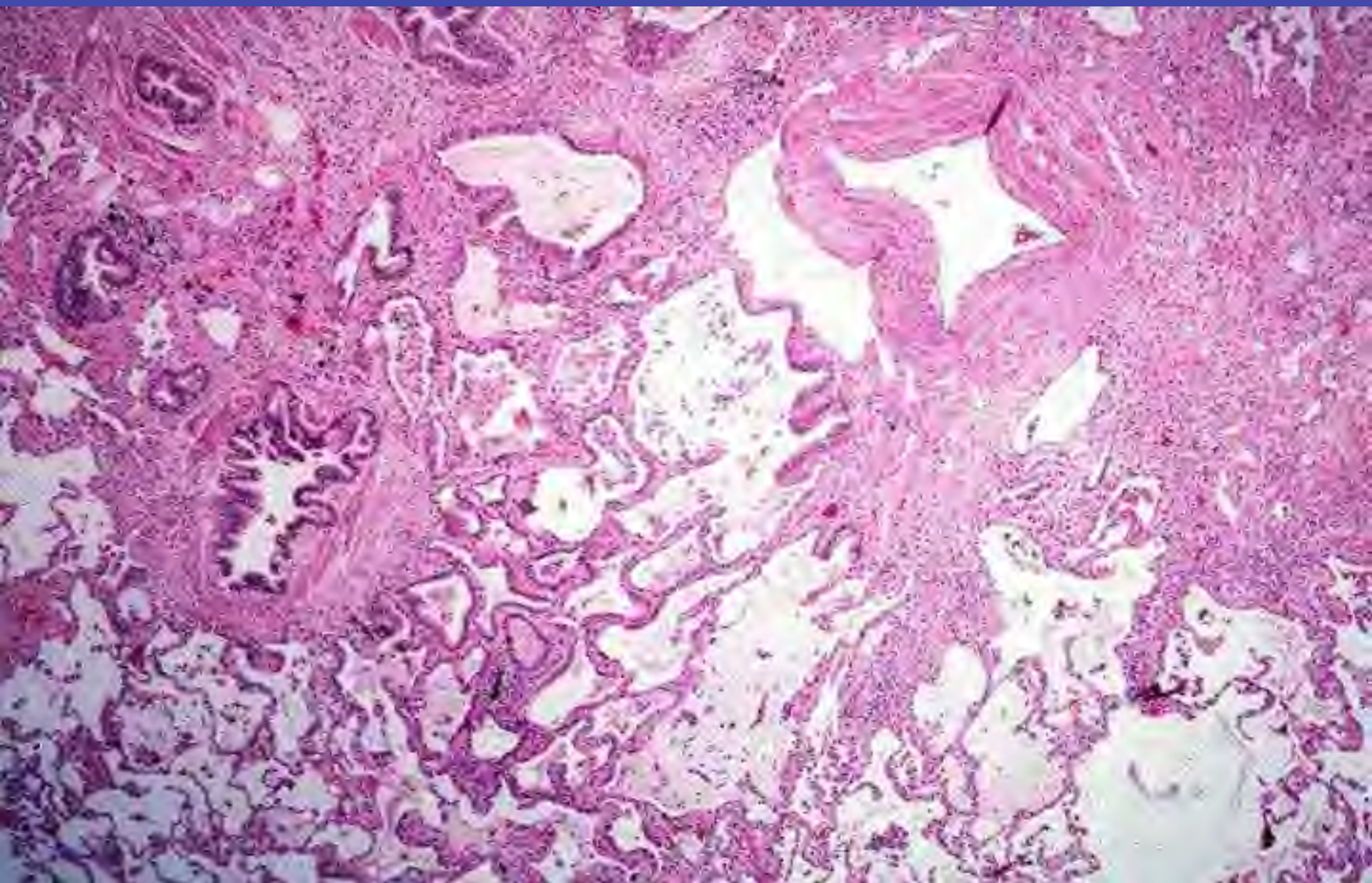


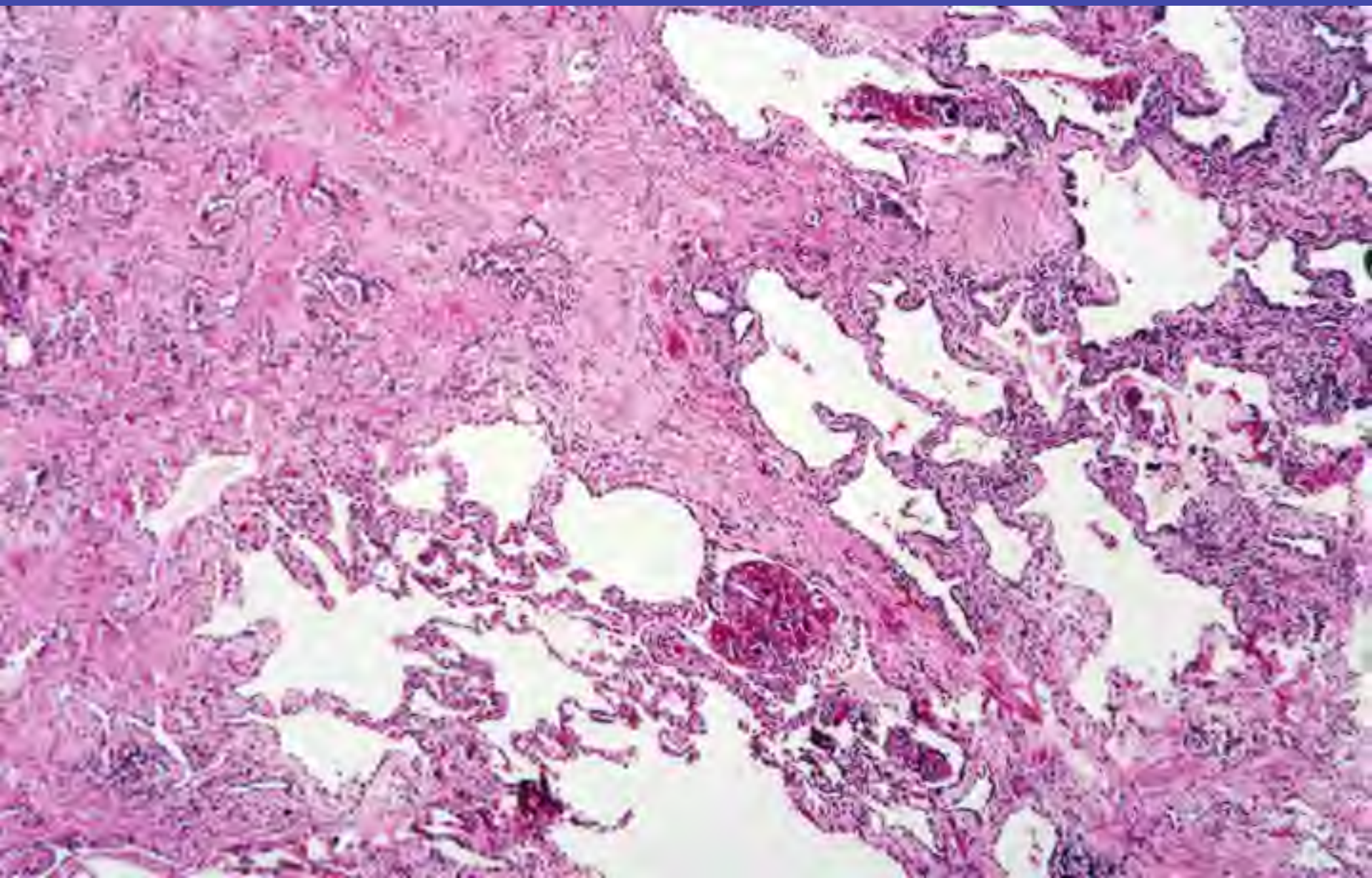
Idiopathic pulmonary fibrosis (UIP)

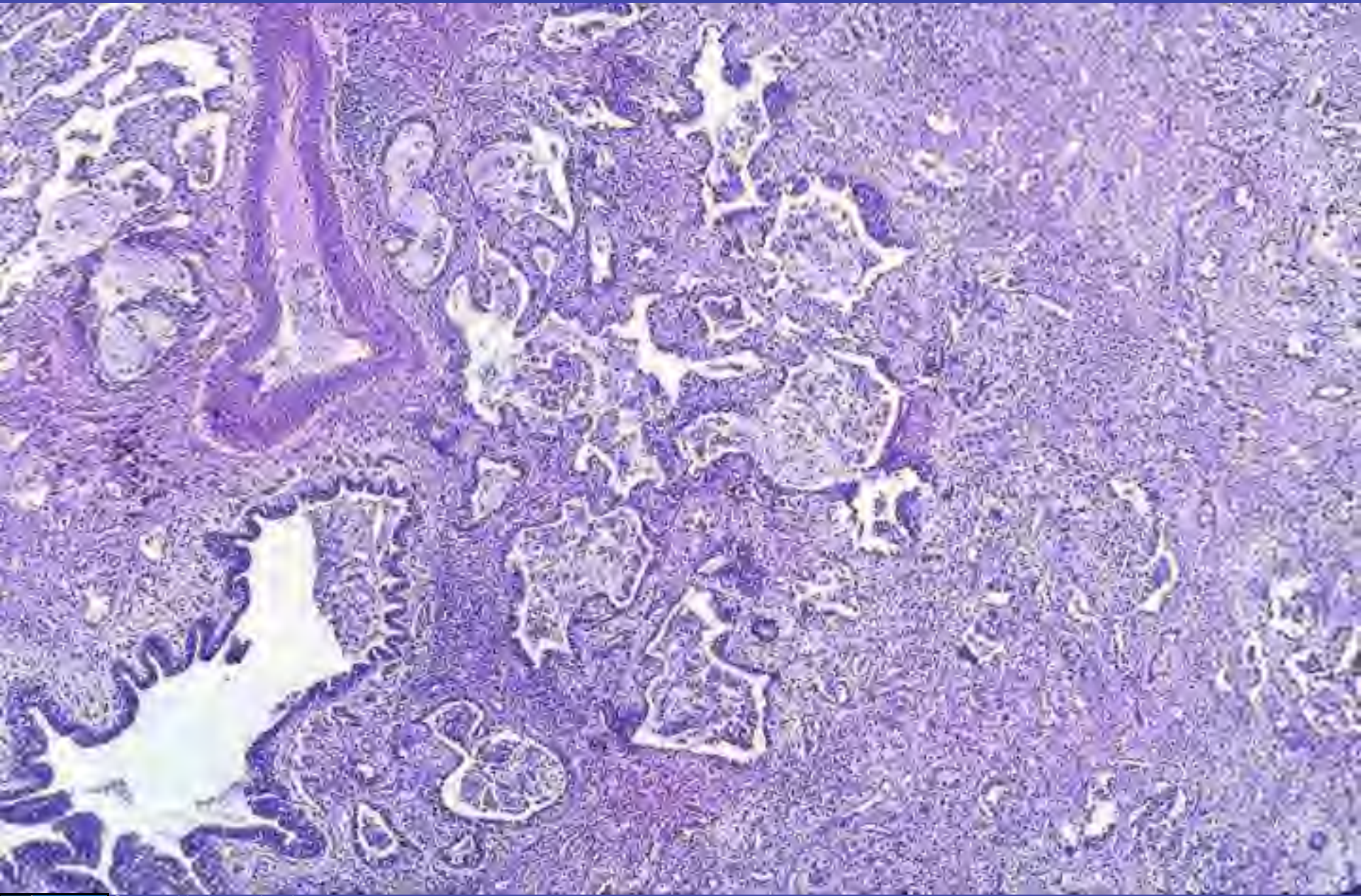


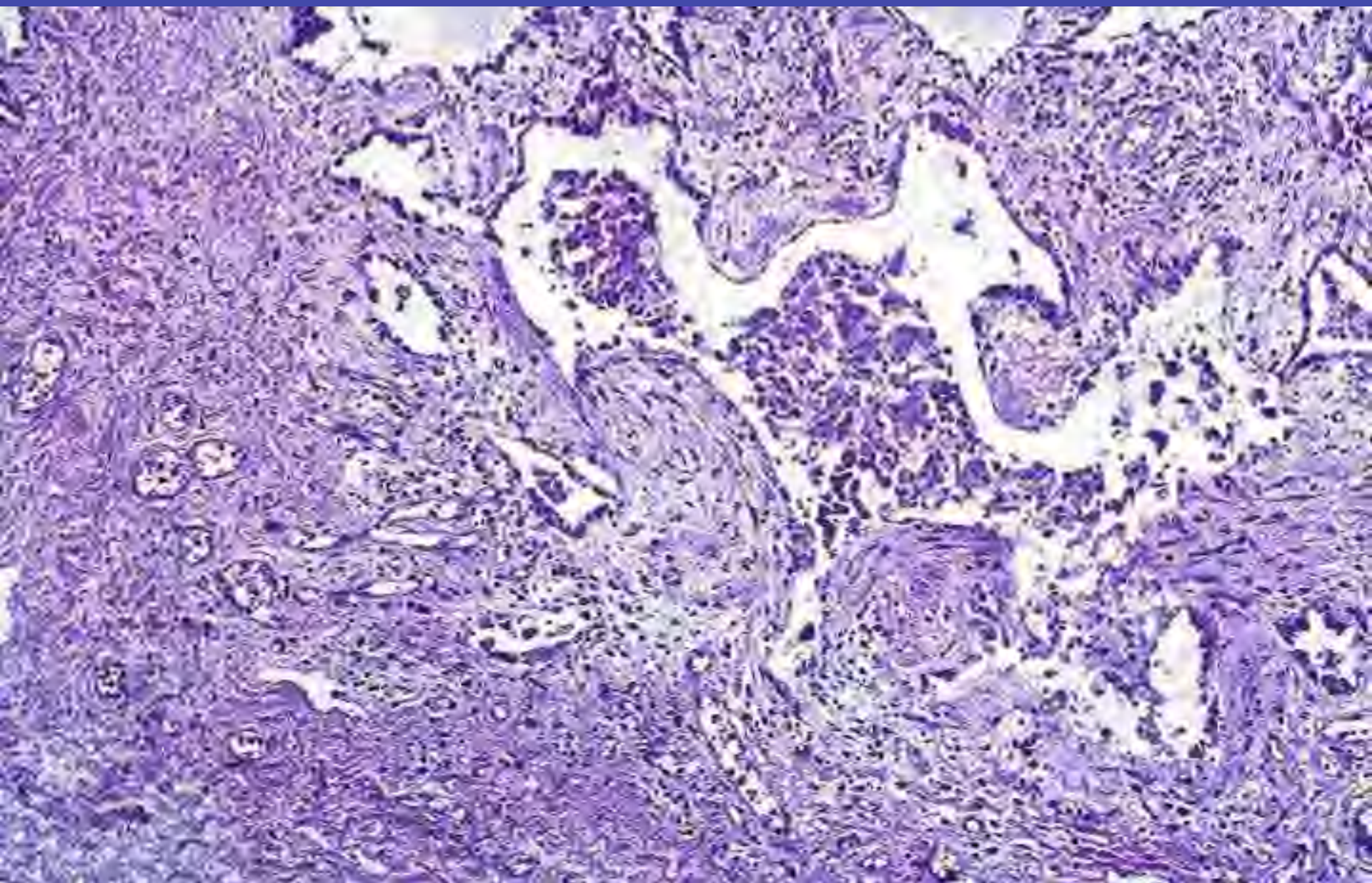


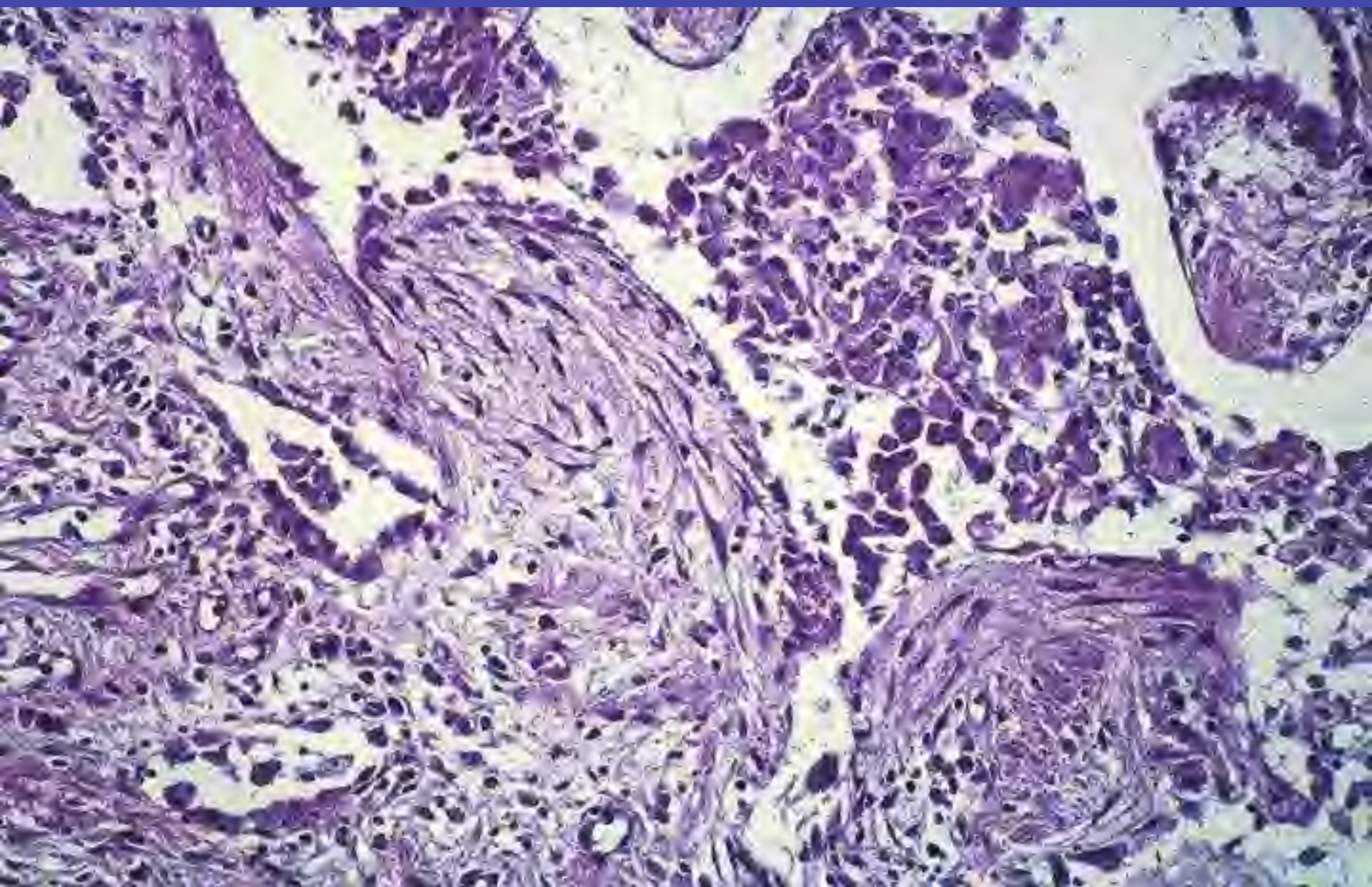












M-2 Respiratory Laboratory - 2

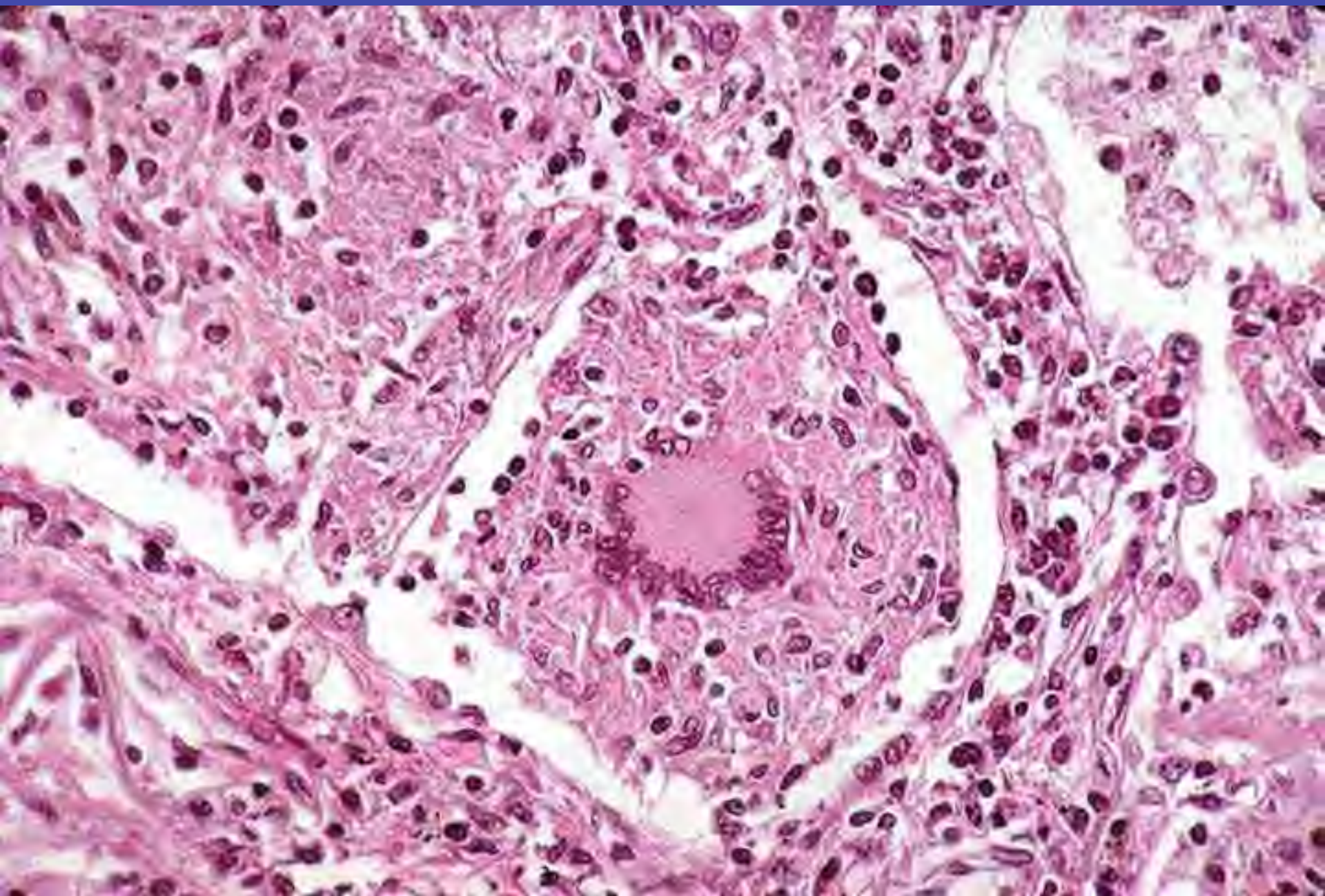
59 Emphysema

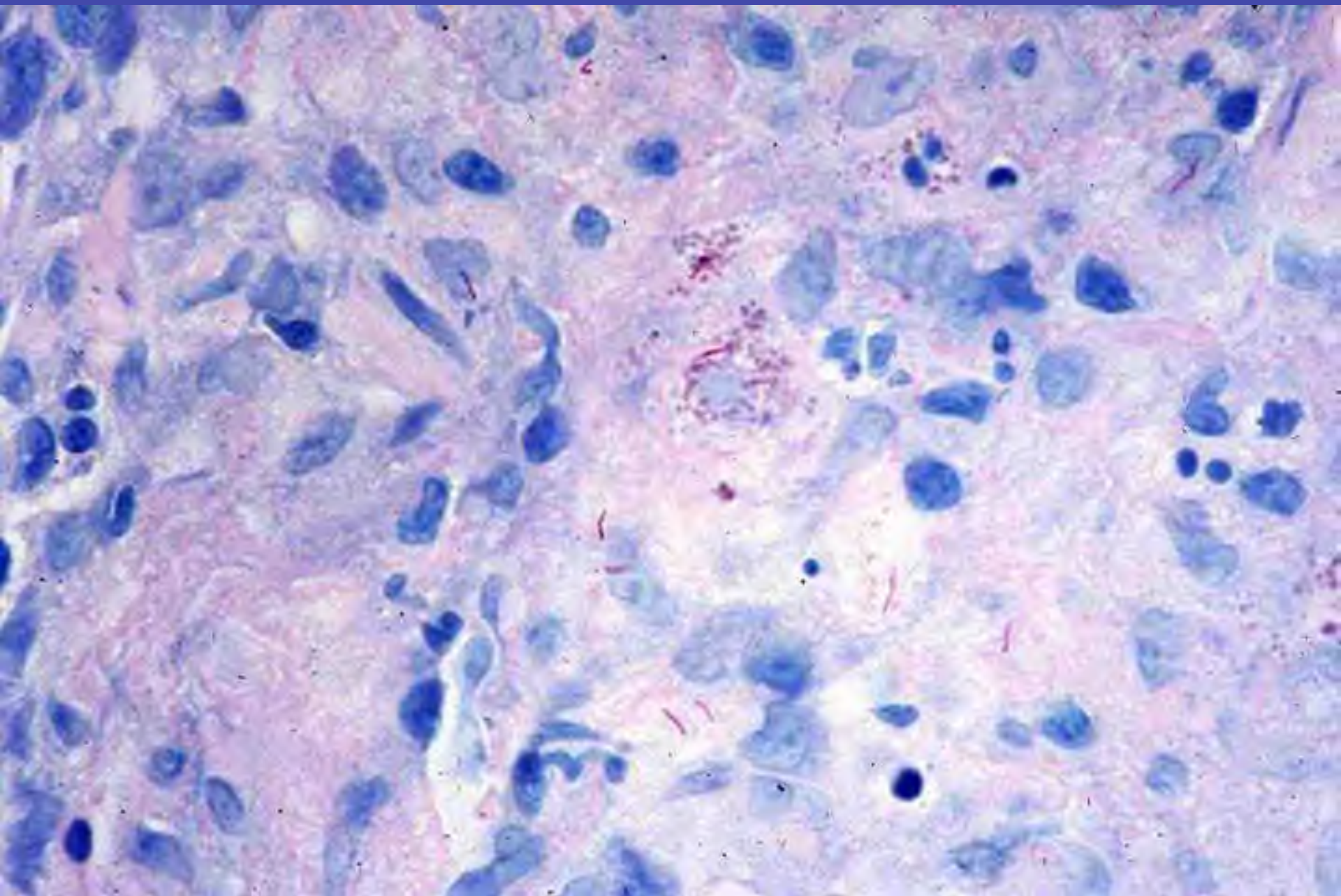
67 Bronchiectasis

68 Asthma

60 Asbestosis

CPC





M-2 Respiratory Laboratory - 3

74 Squamous cell carcinoma

75 Adenocarcinoma

28 Small cell carcinoma

73 Carcinoid tumor

CPC

M-2 Respiratory Laboratory - 3

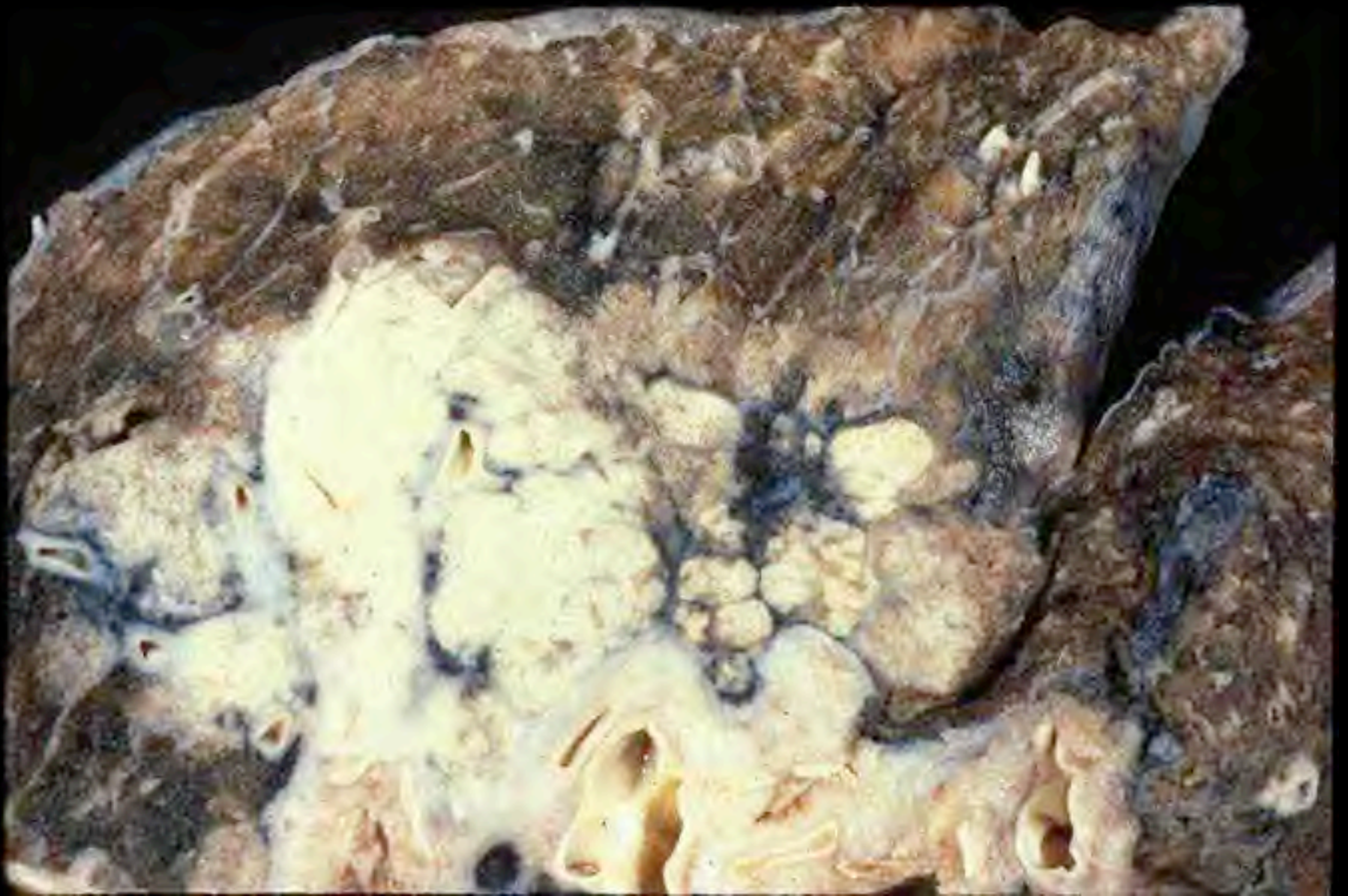
74 Squamous cell carcinoma

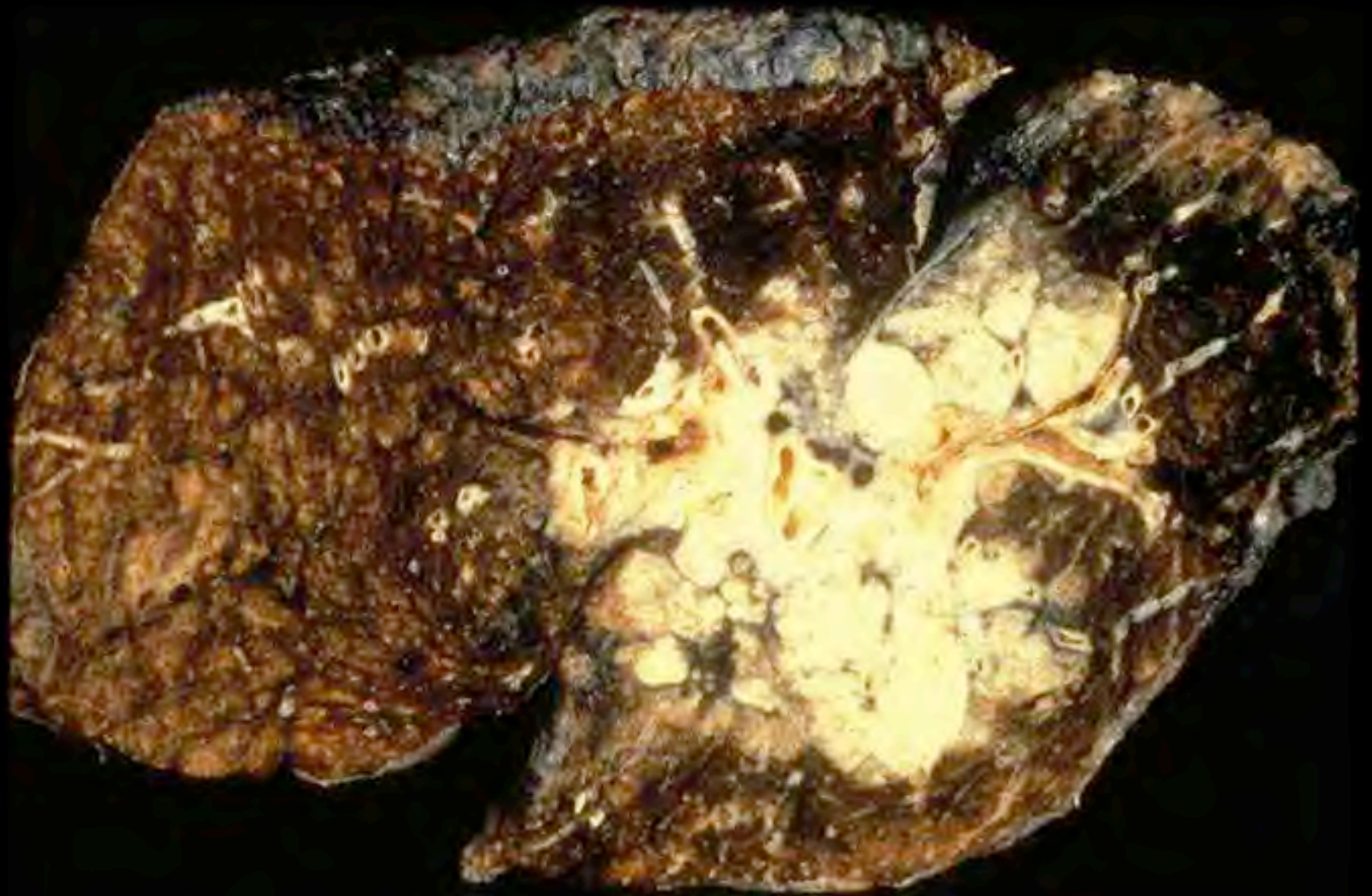
75 Adenocarcinoma

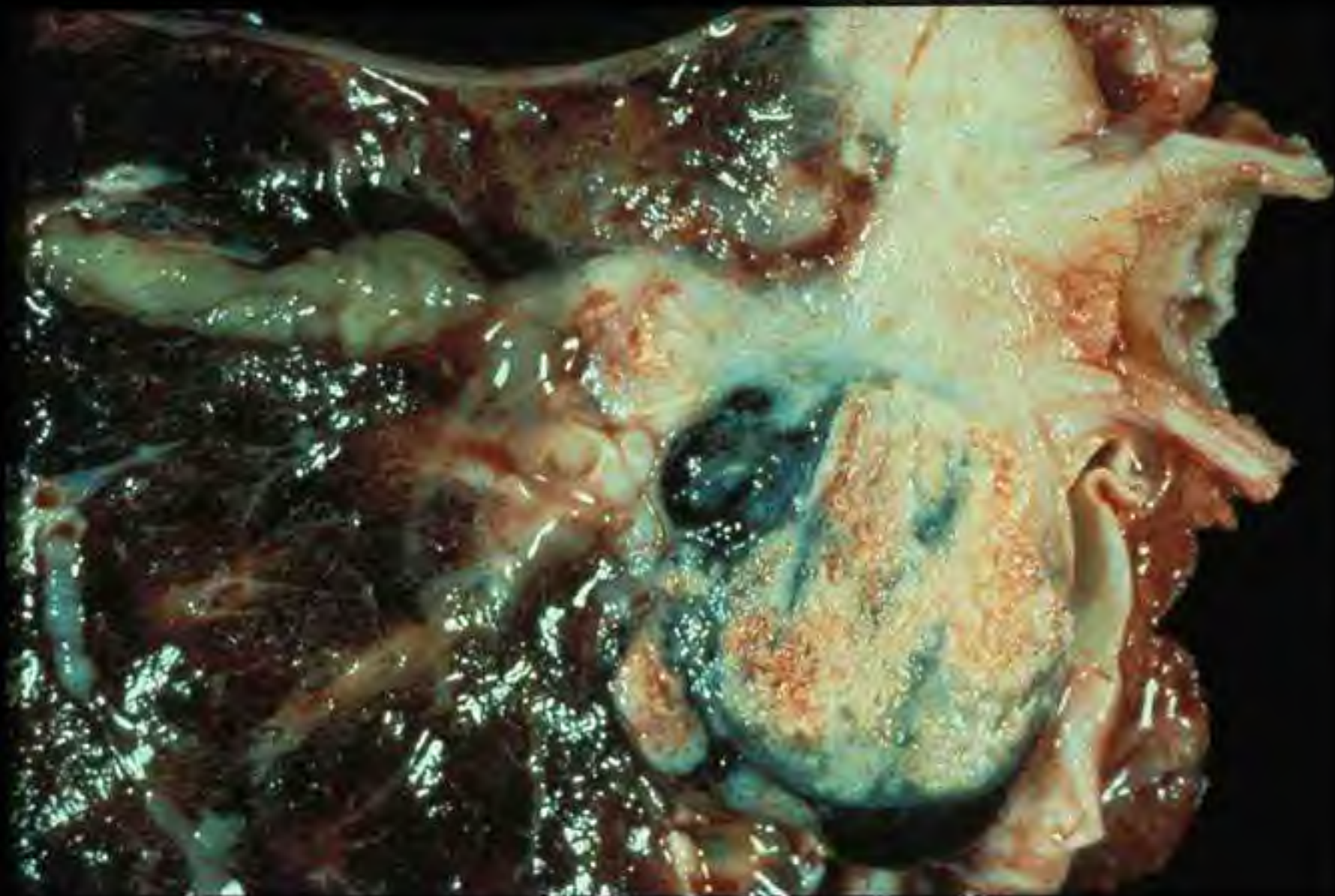
28 Small cell carcinoma

73 Carcinoid tumor

CPC





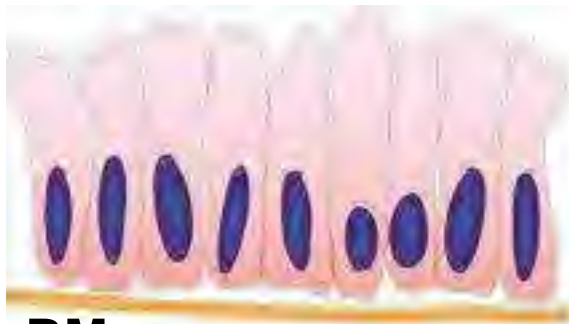




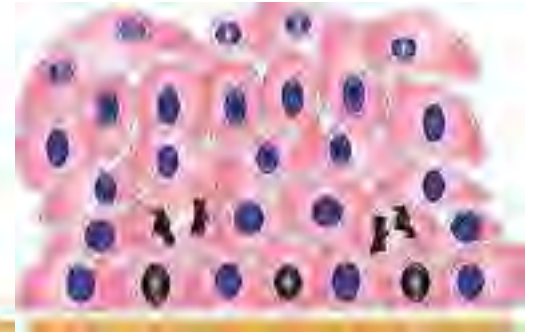
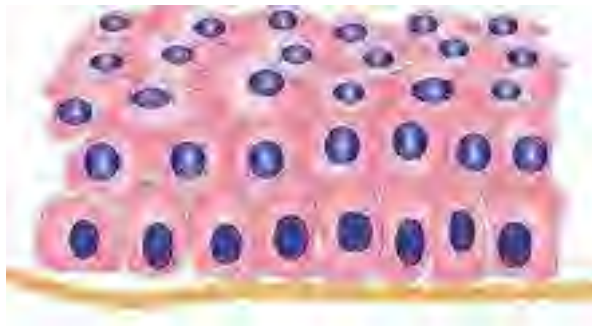
PD-TNCL

Source Undetermined

Respiratory Epithelium ↔ Squamous Metaplasia [?] ↔ LG Dysplasia



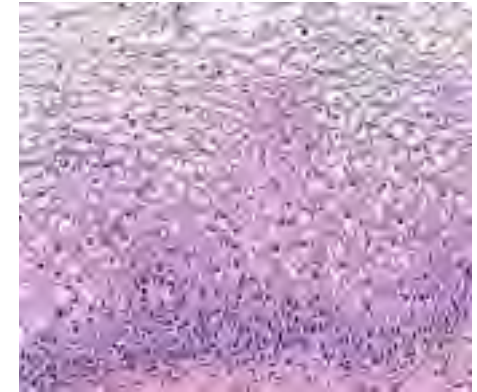
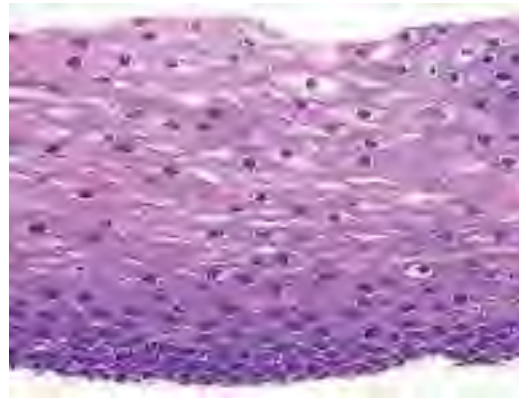
BM



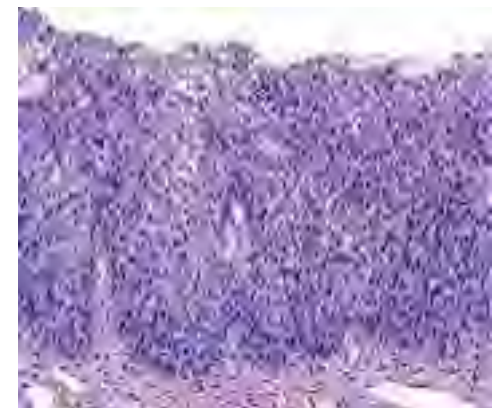
Invasive Carcinoma ← Carcinoma in situ
HG Dysplasia ← MG Dysplasia

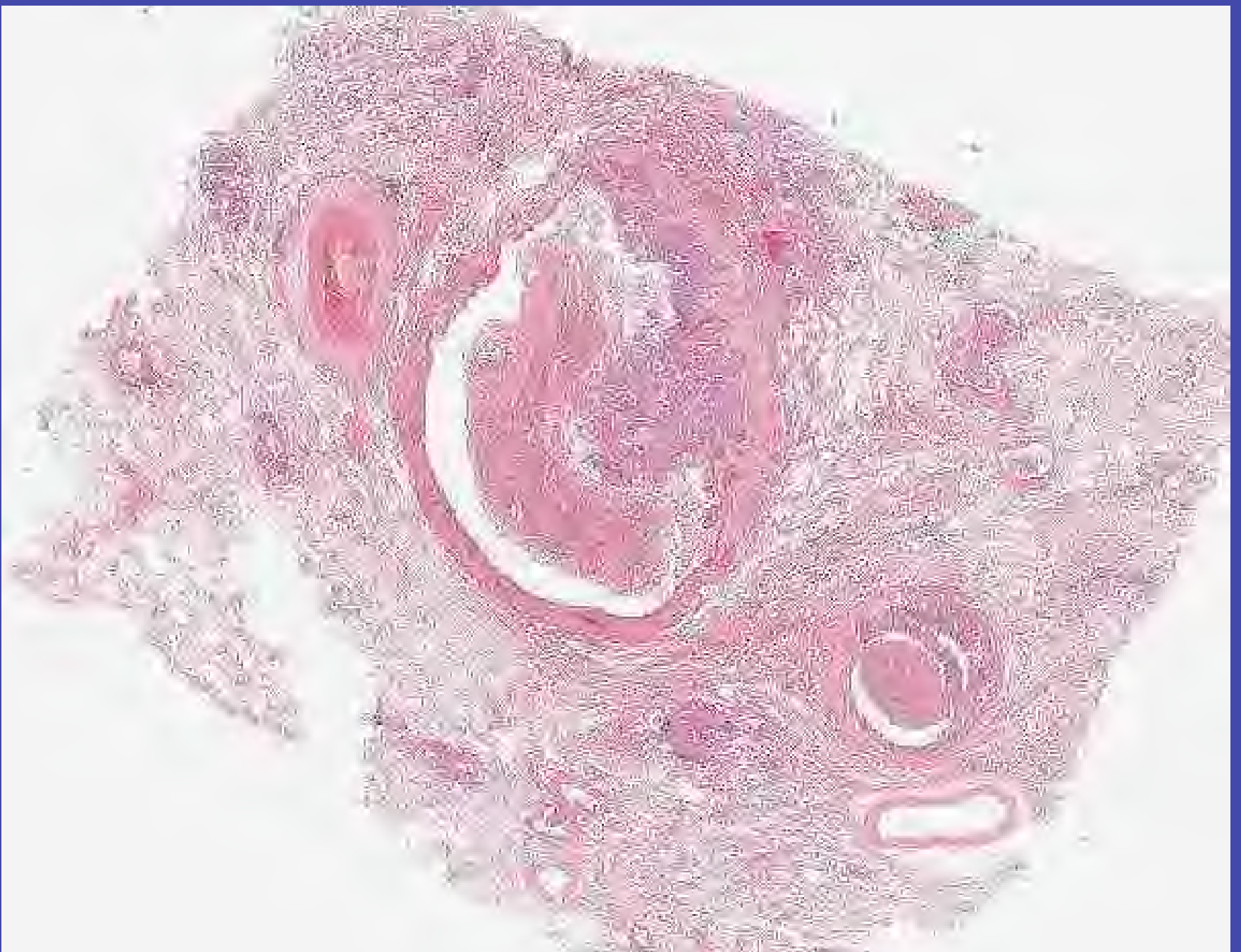


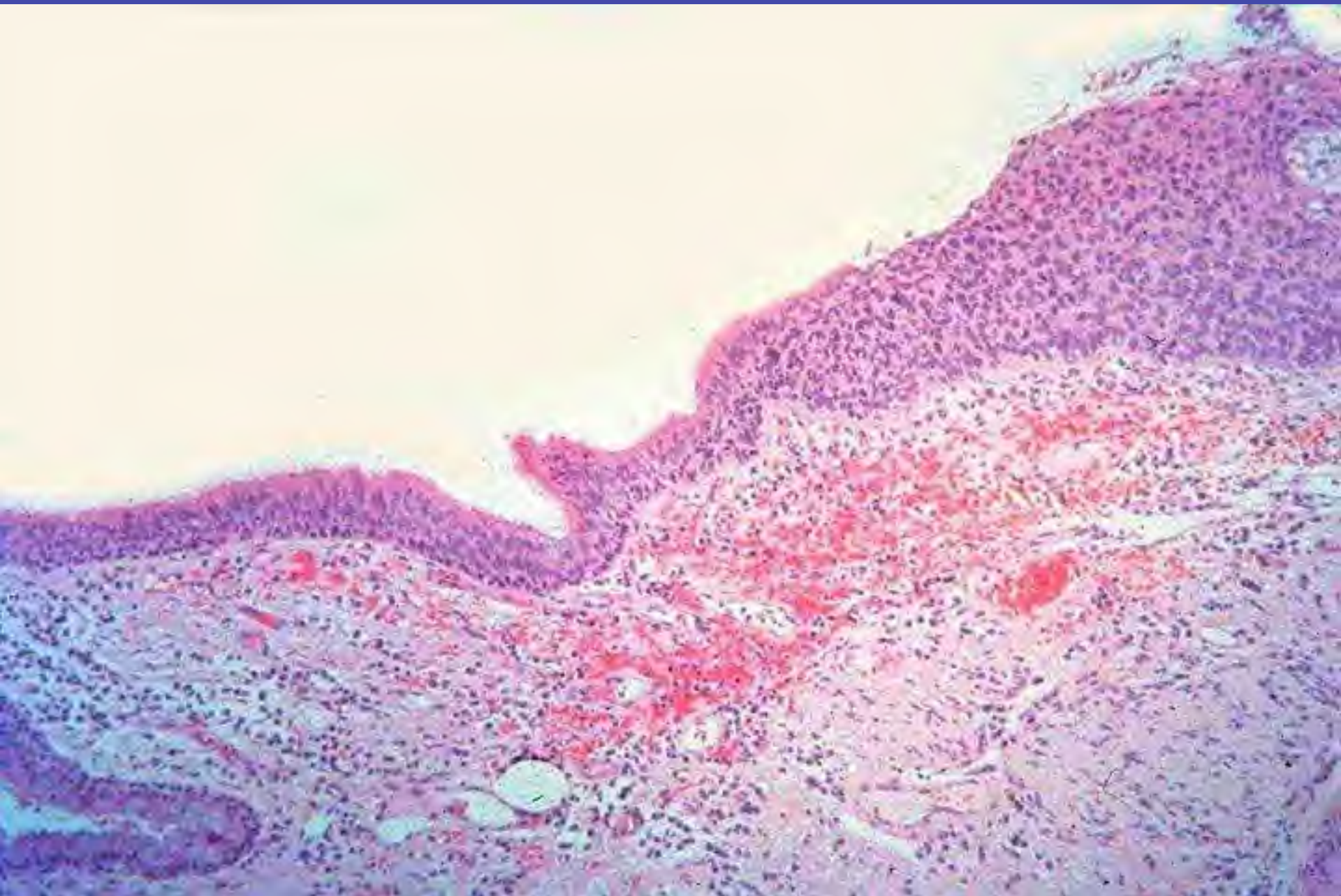
Respiratory Epithelium → Squamous Metaplasia [?] ↔ LG Dysplasia

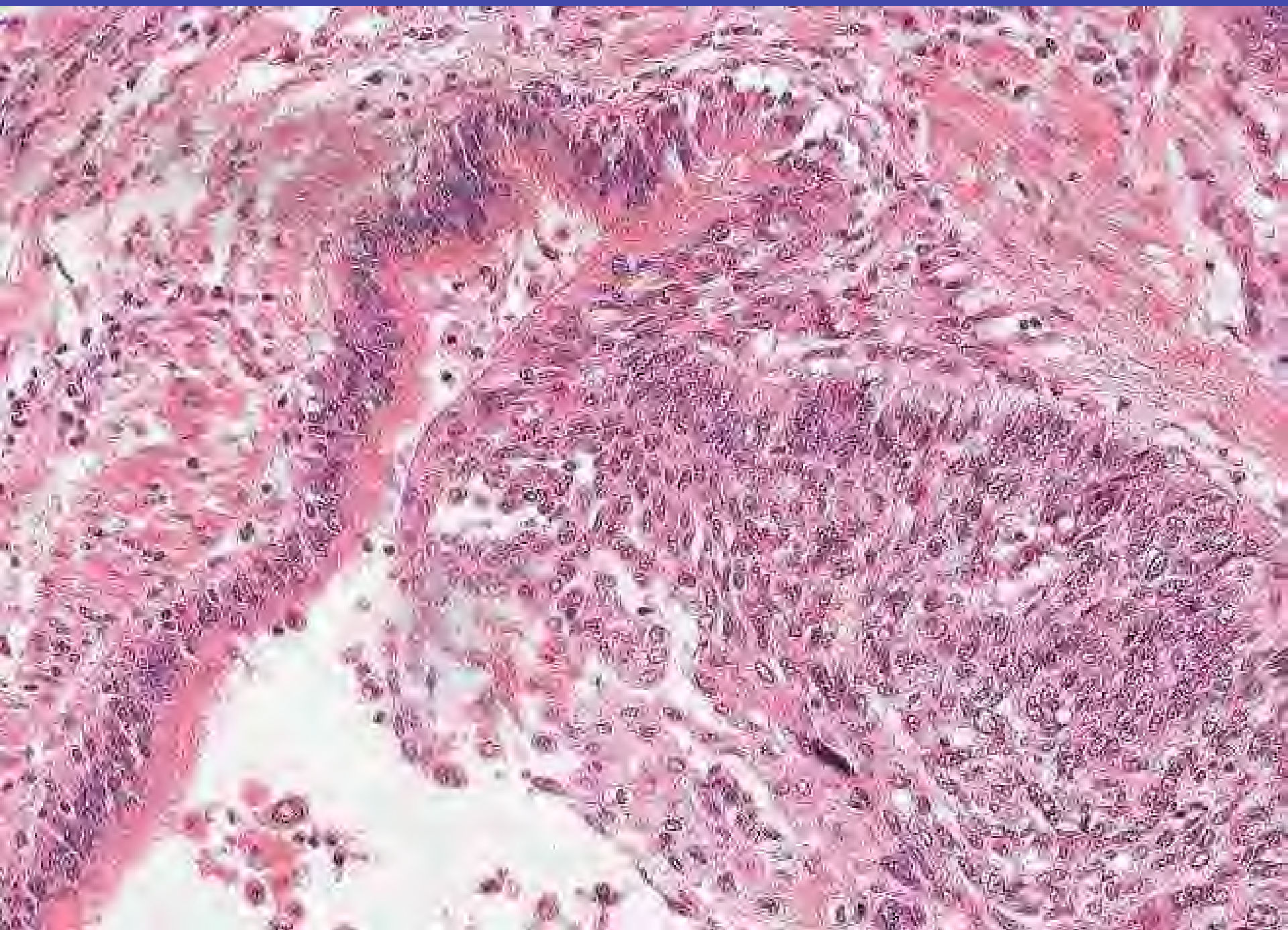


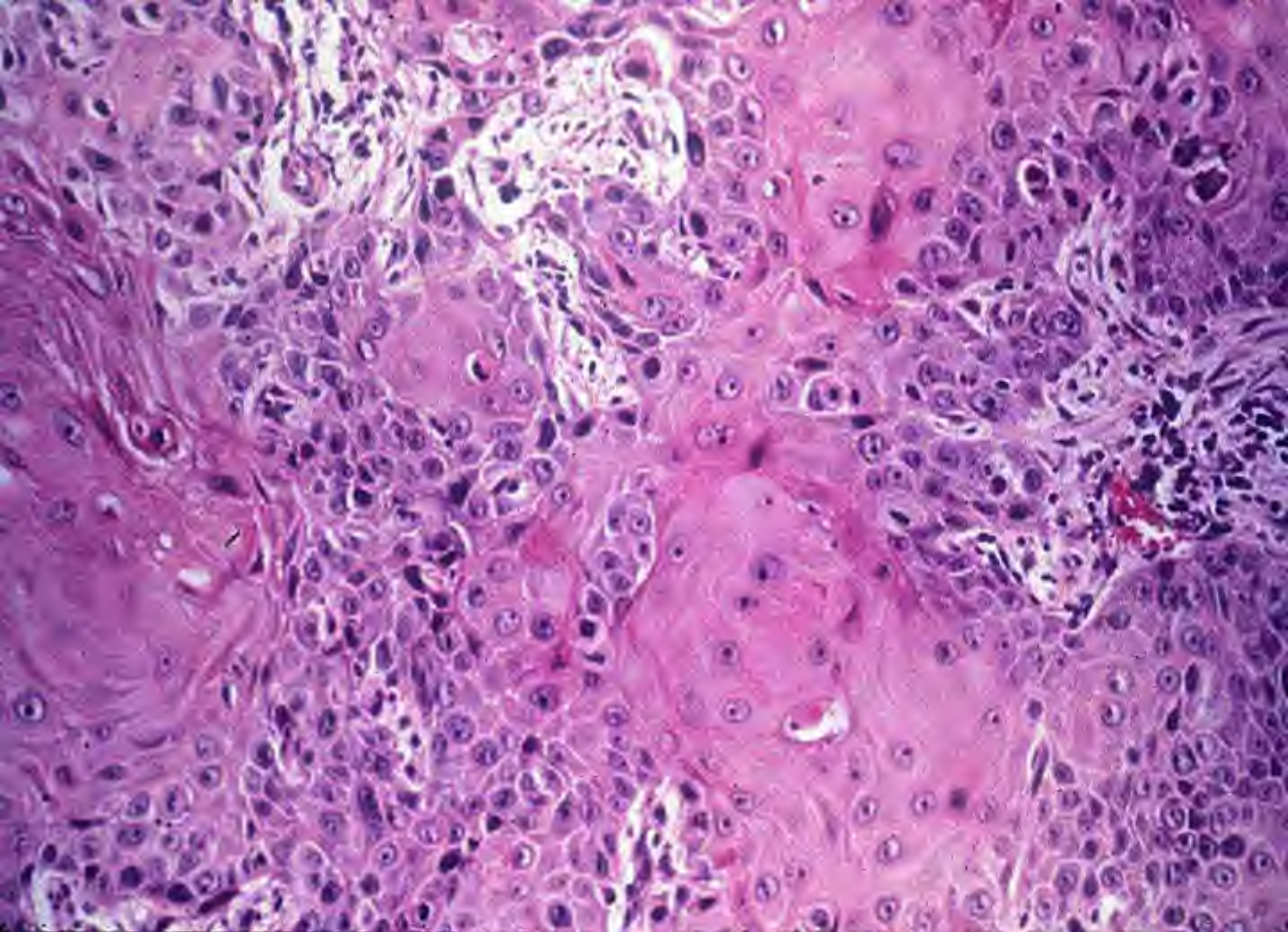
Invasive Carcinoma ← HG Dysplasia (Carcinoma in situ) ← MG Dysplasia

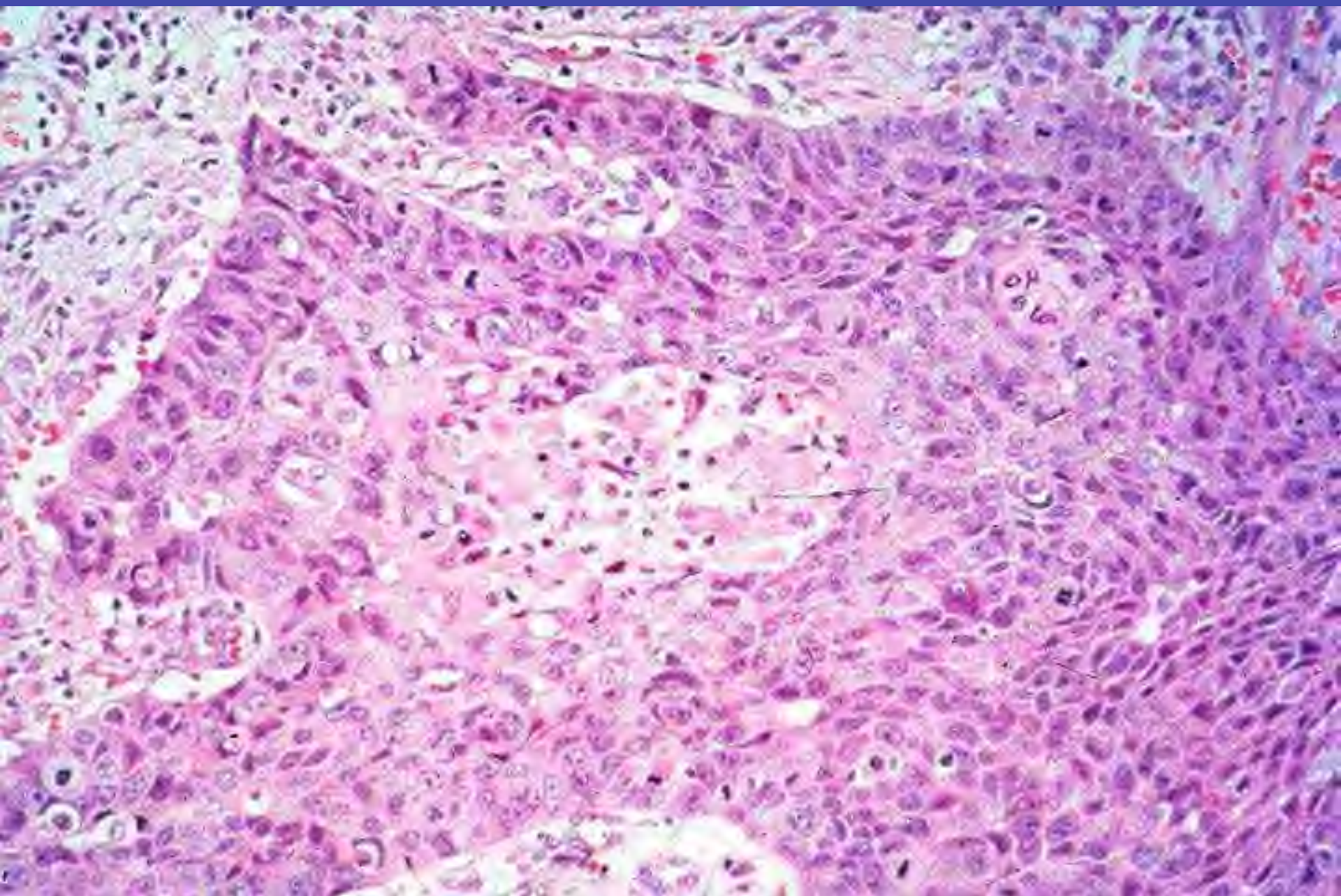


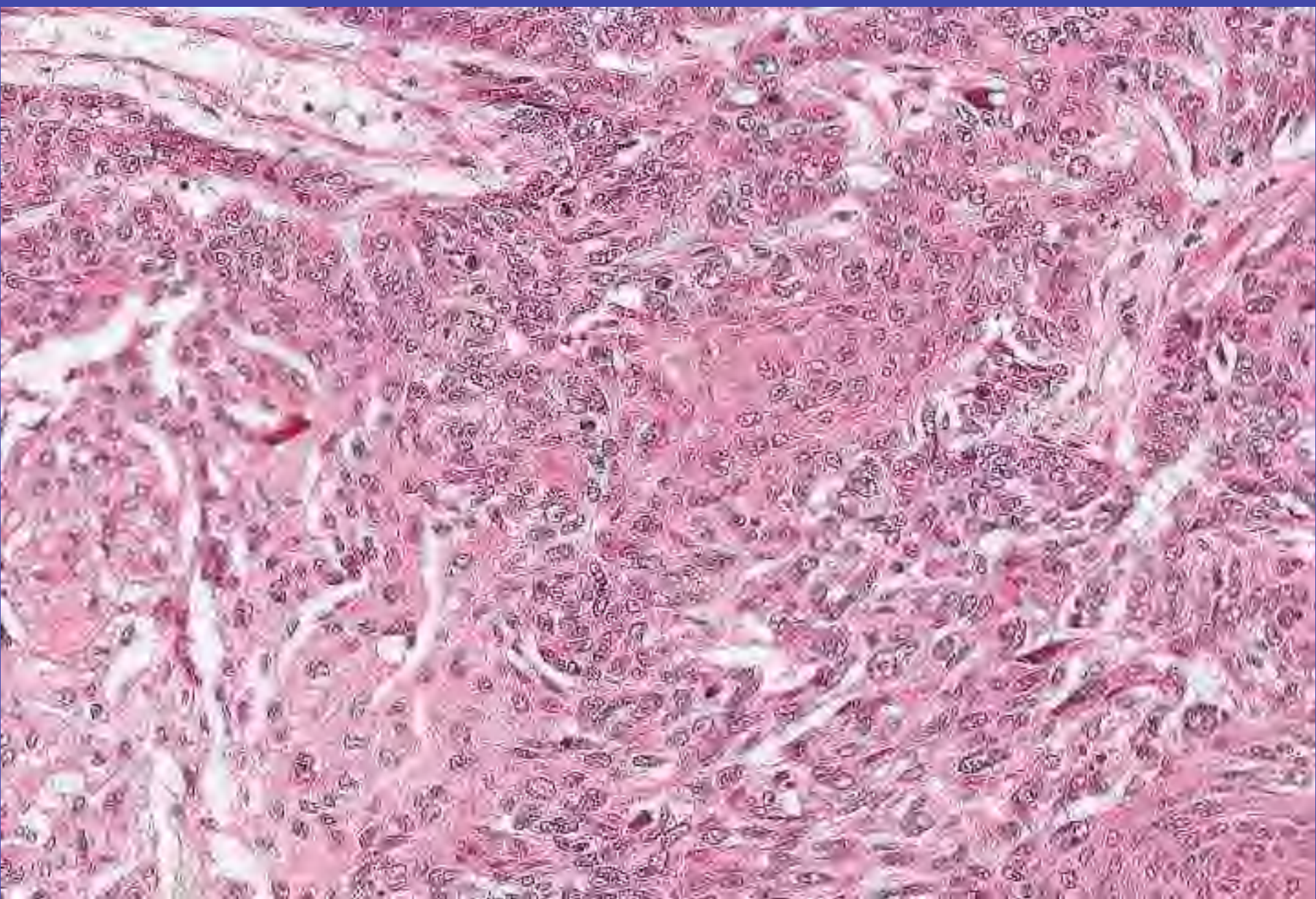


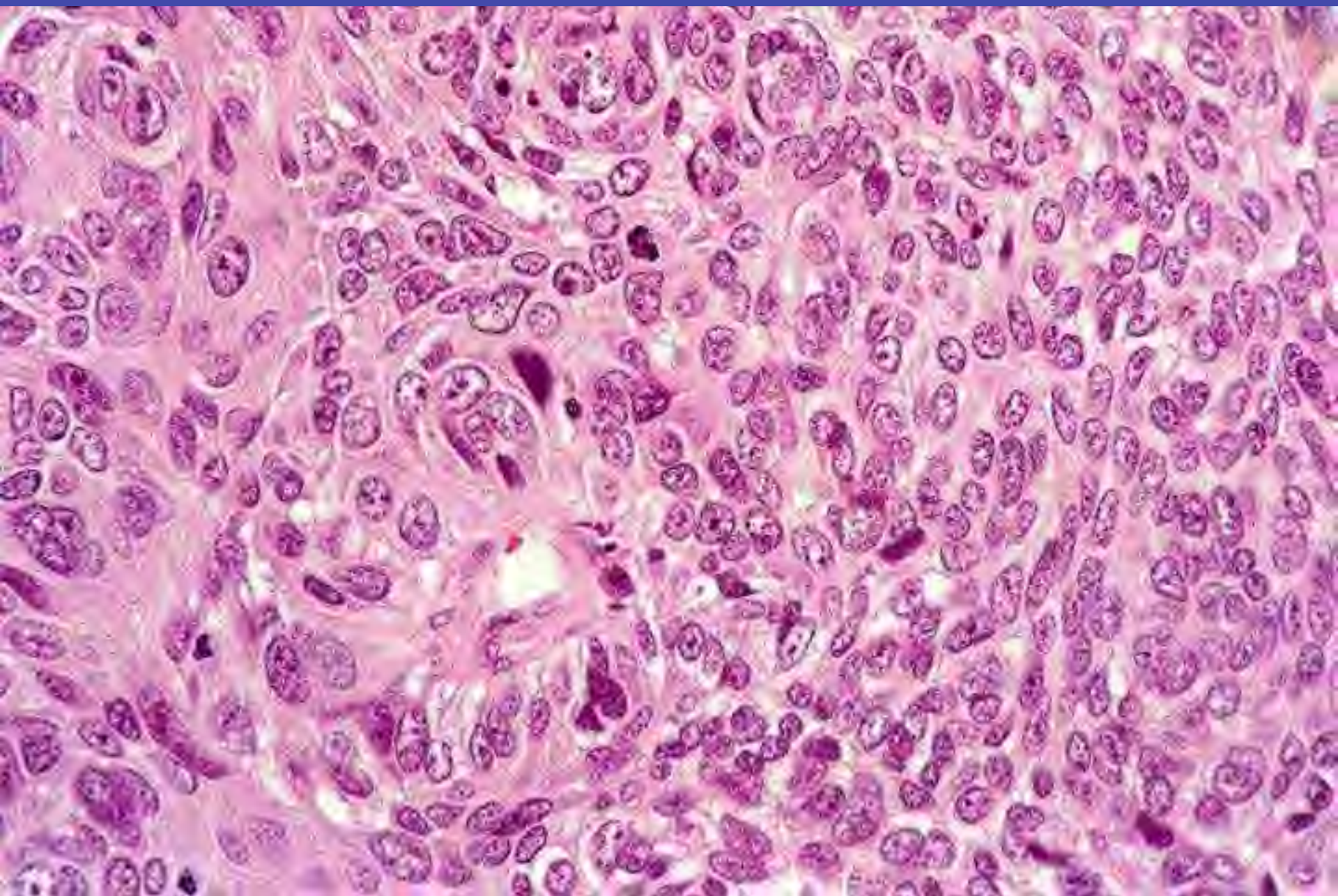


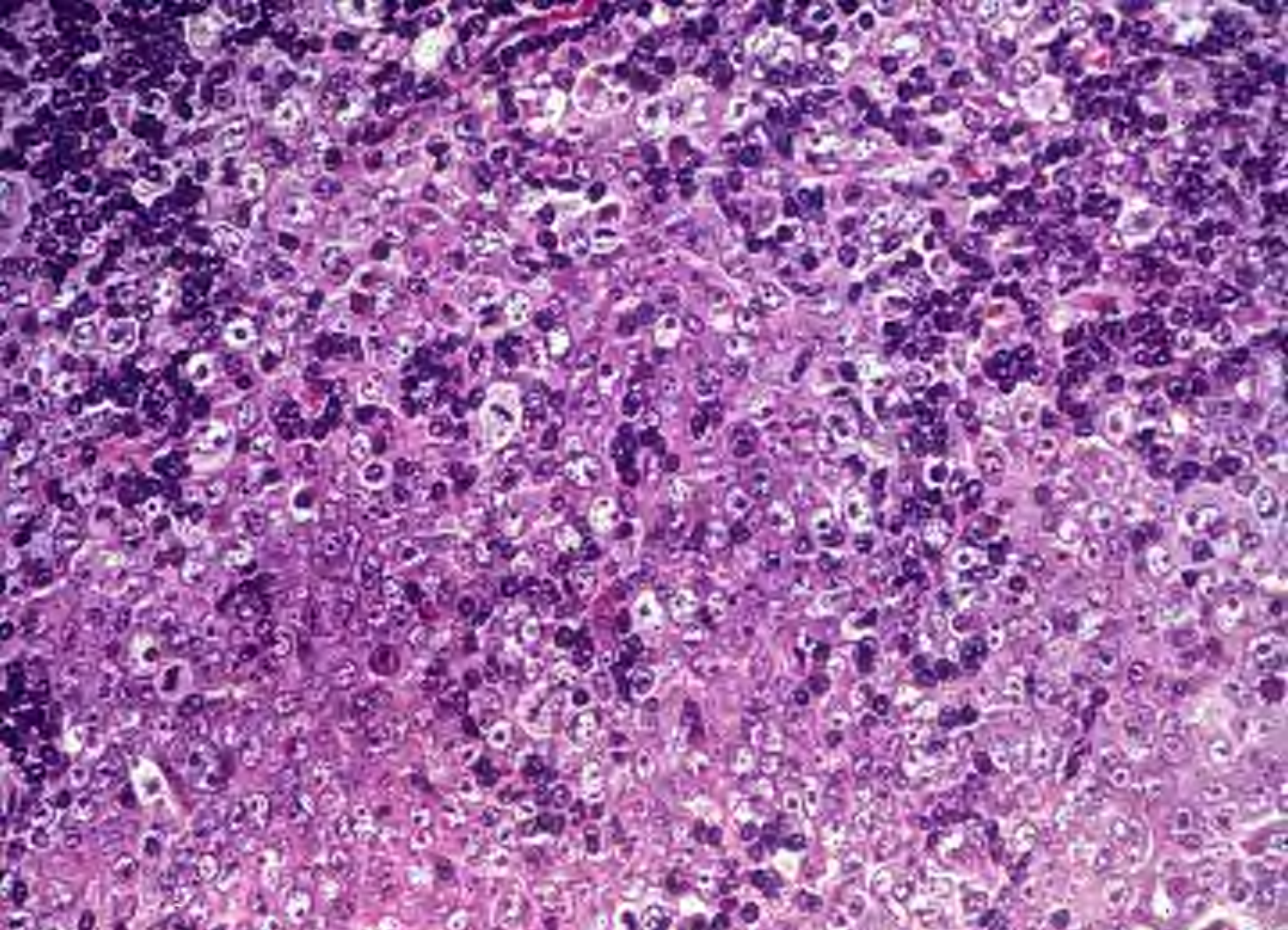


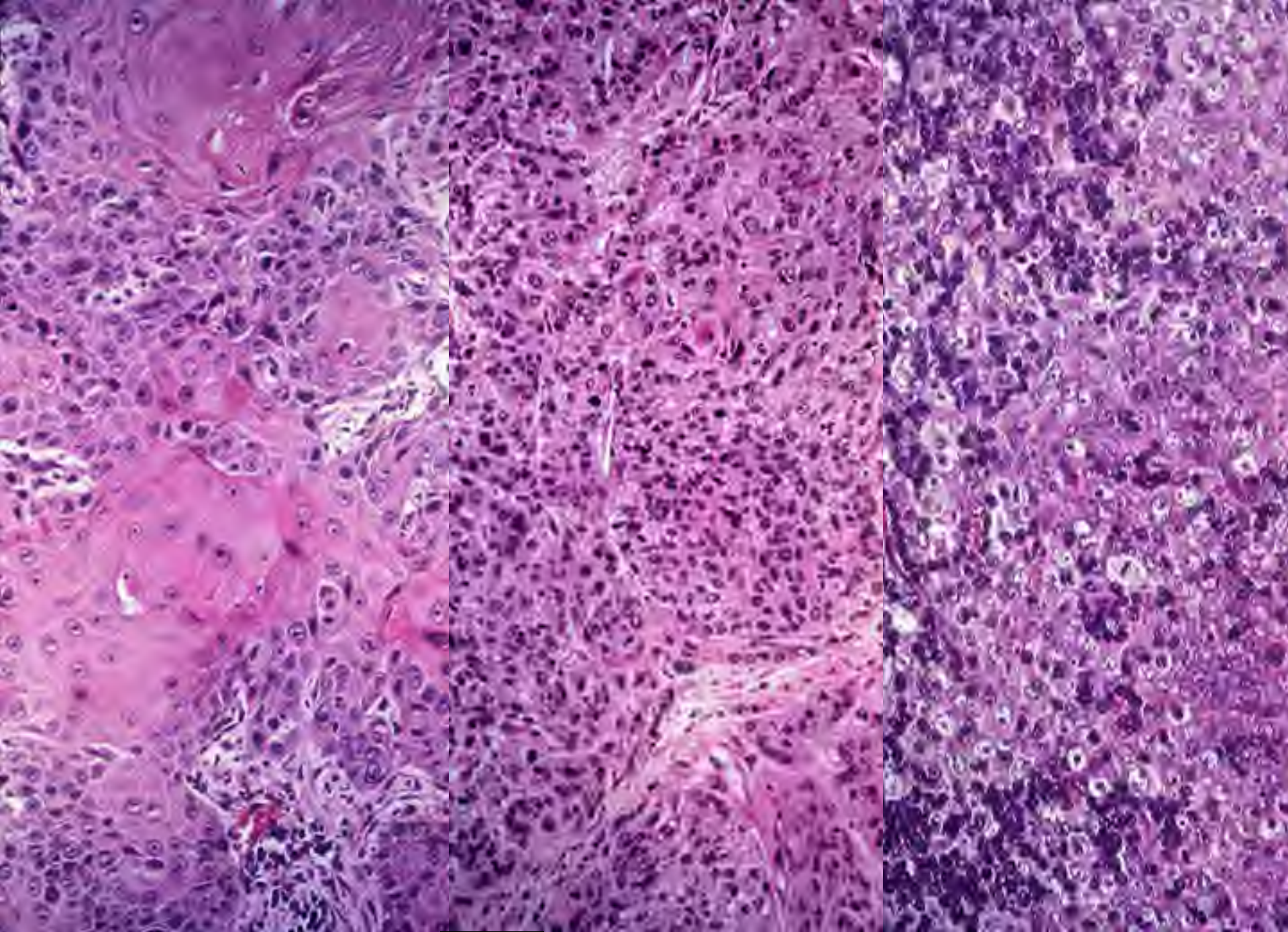












M-2 Respiratory Laboratory - 3

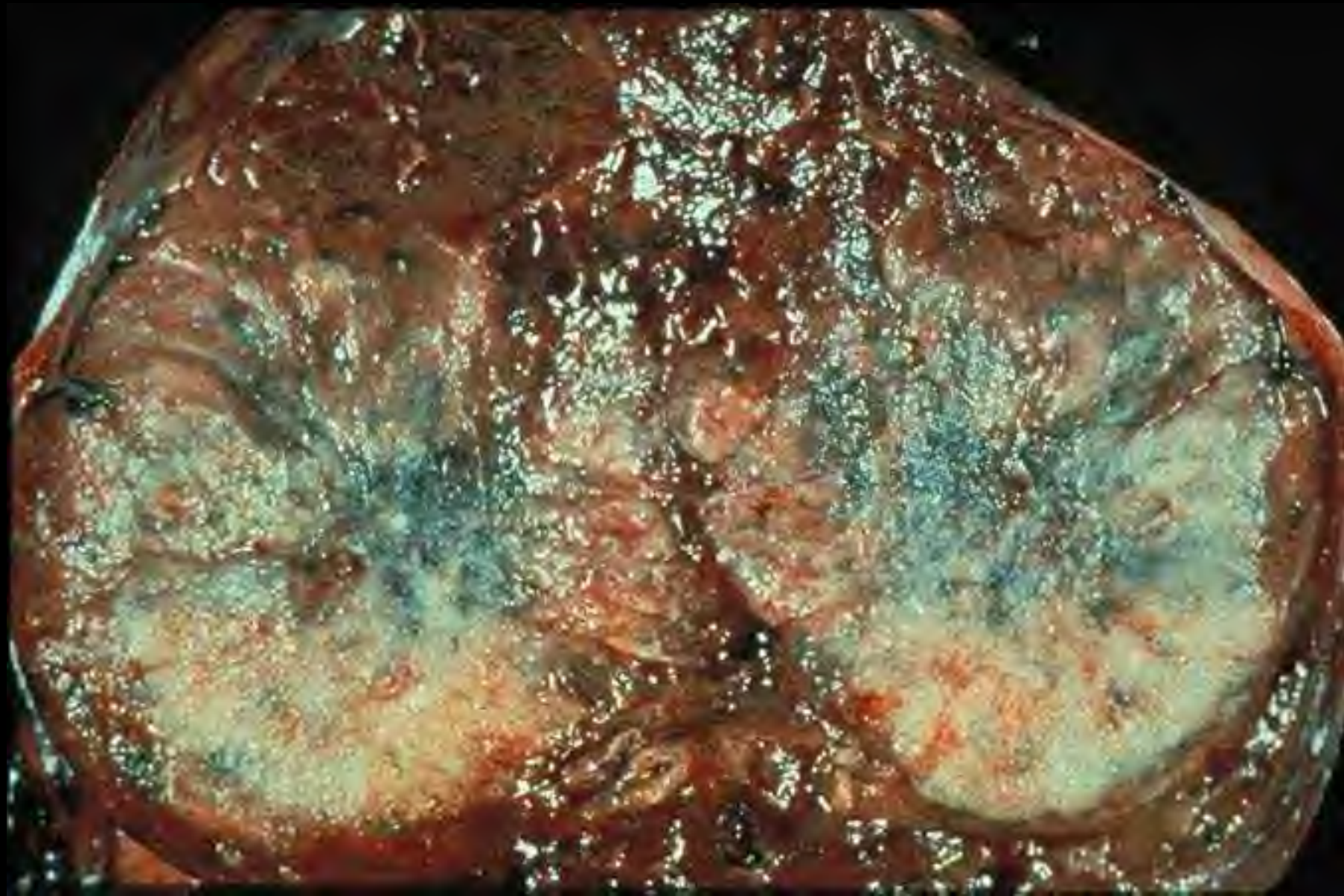
74 Squamous cell carcinoma

75 Adenocarcinoma

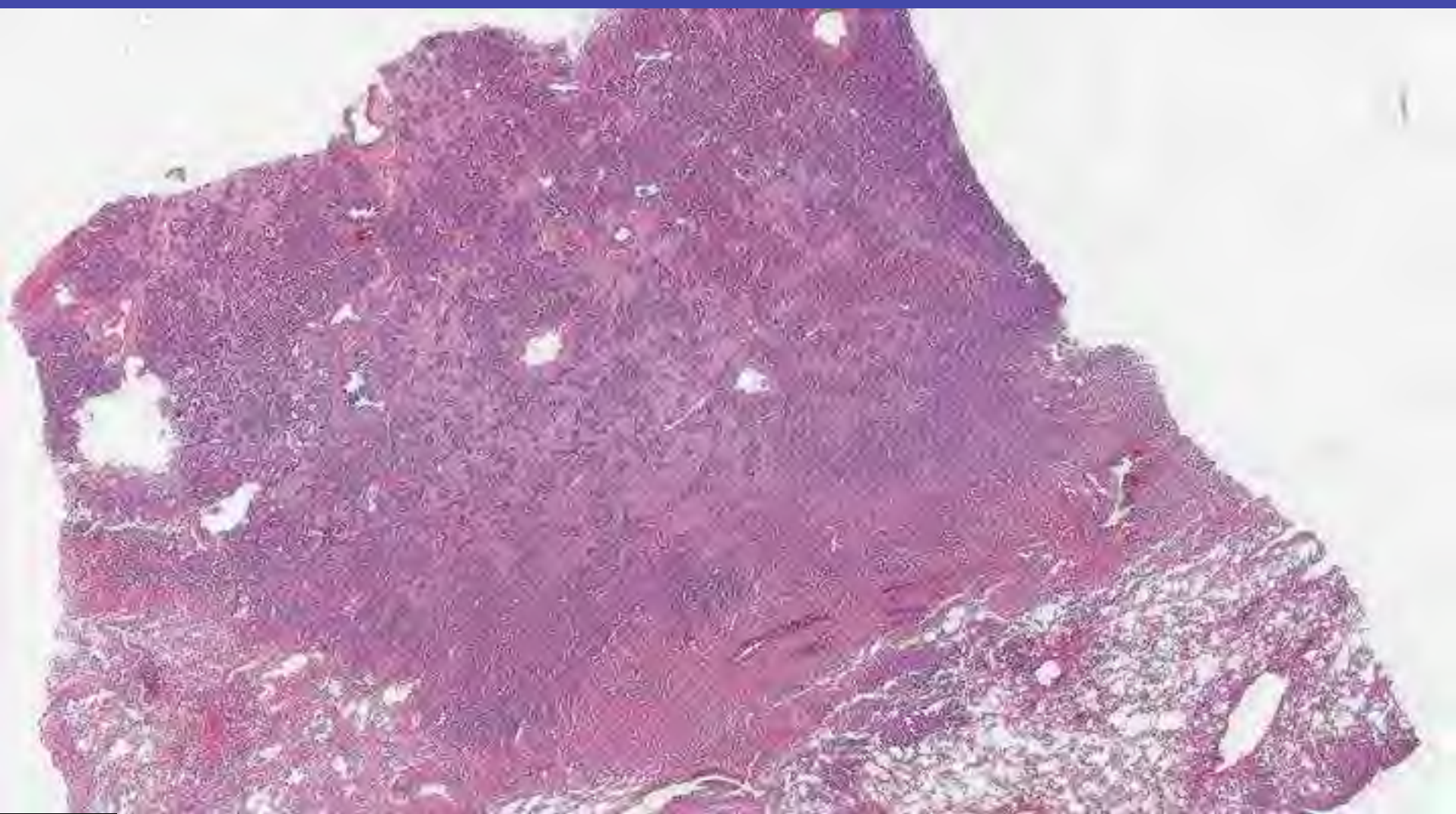
28 Small cell carcinoma

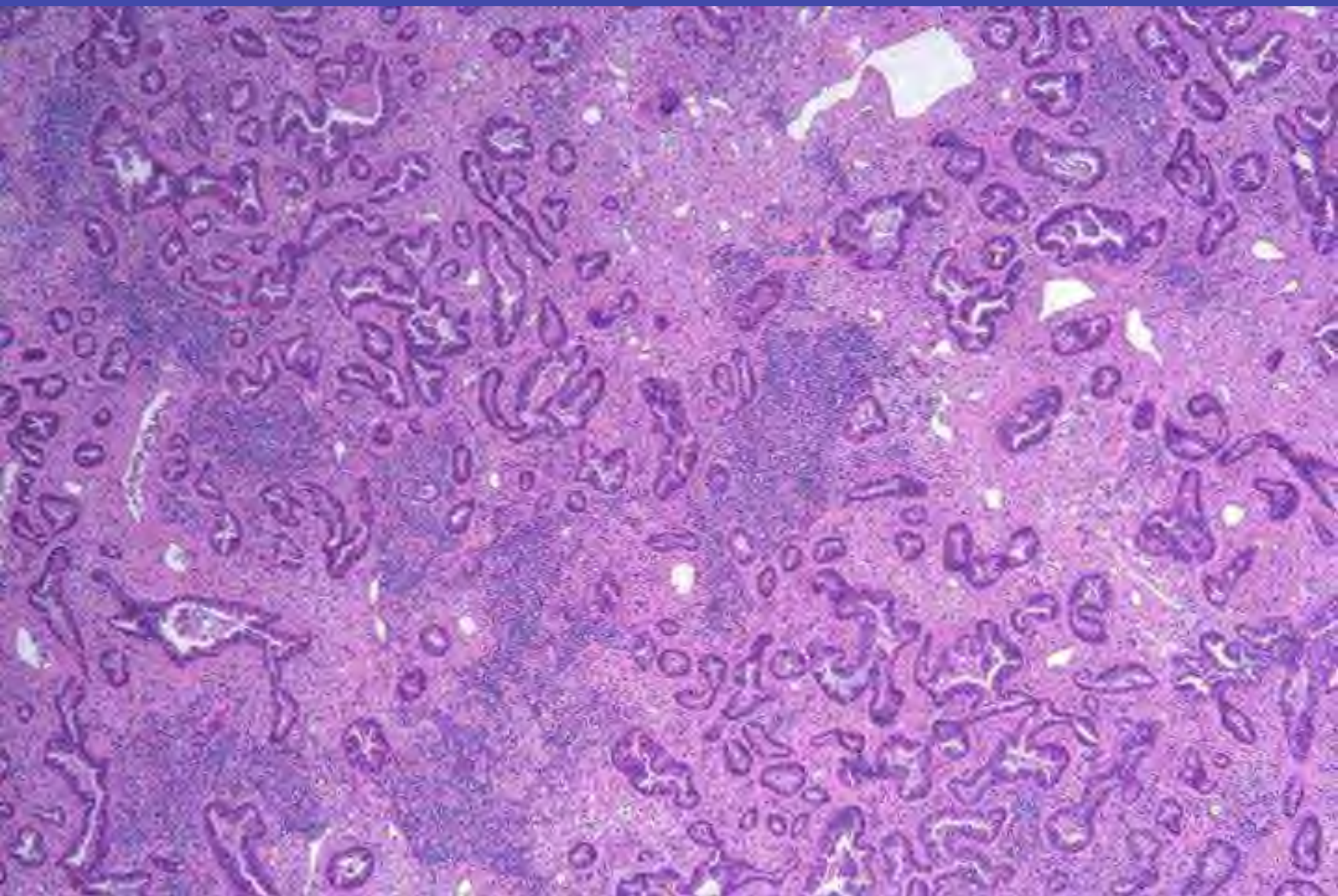
73 Carcinoid tumor

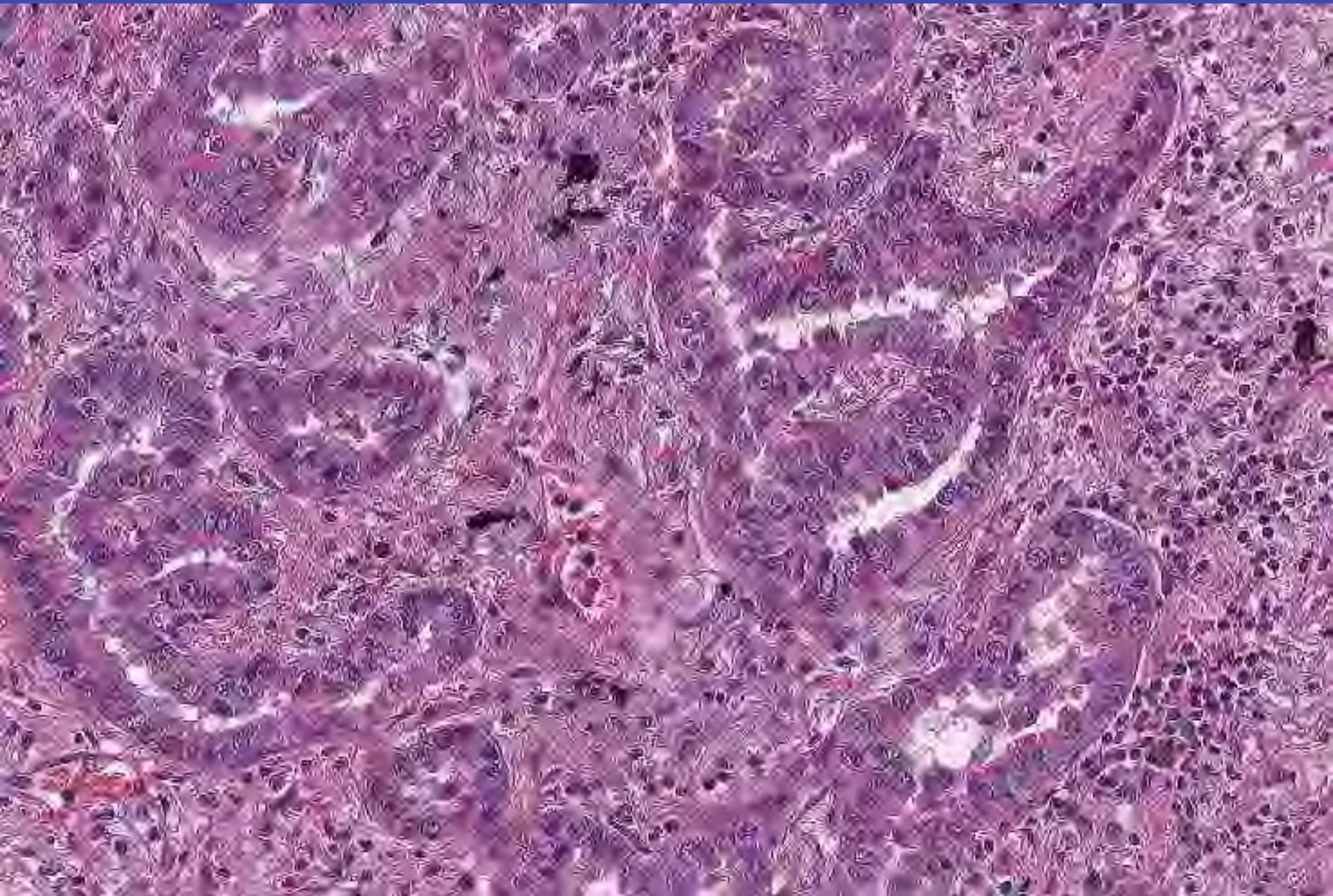
CPC

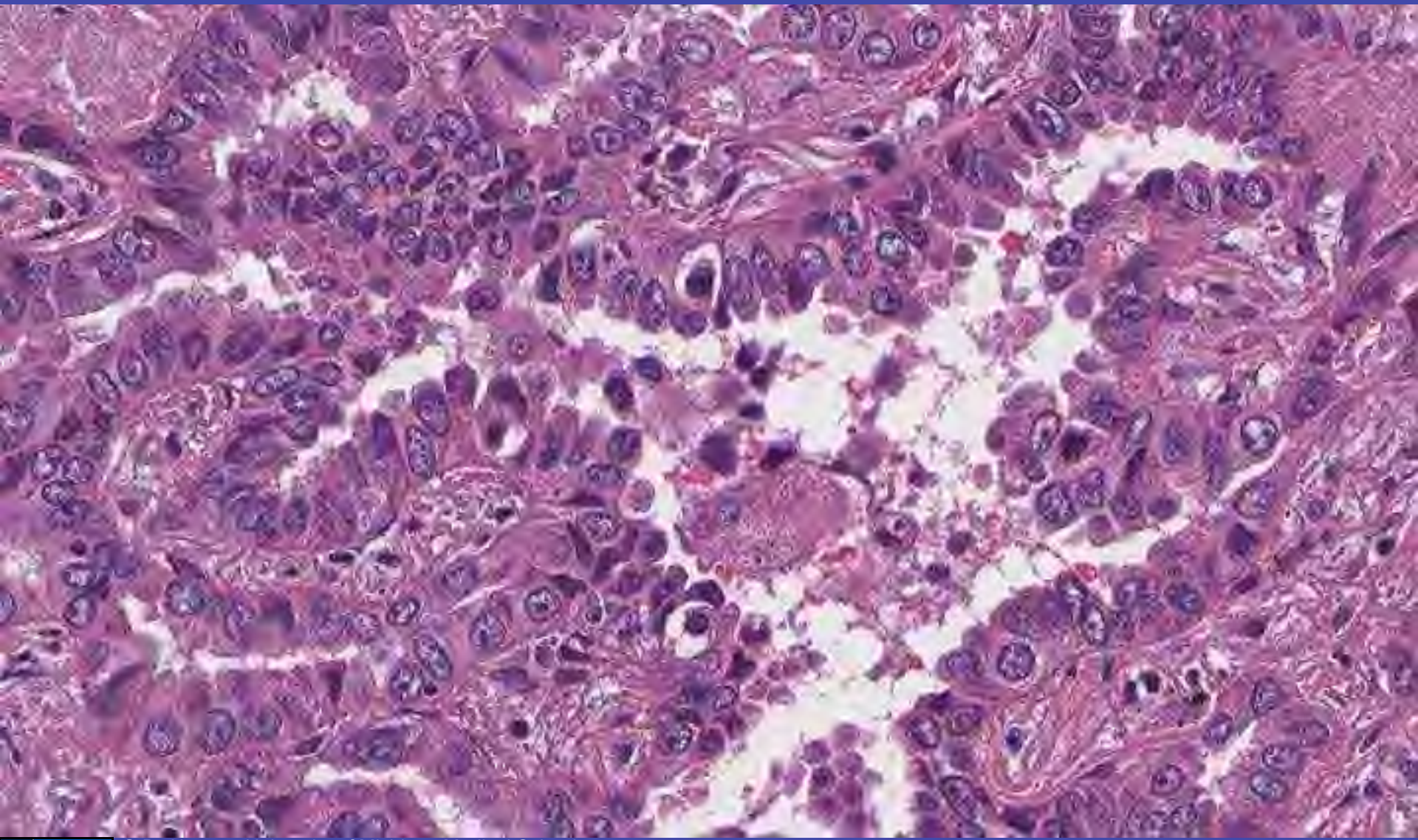


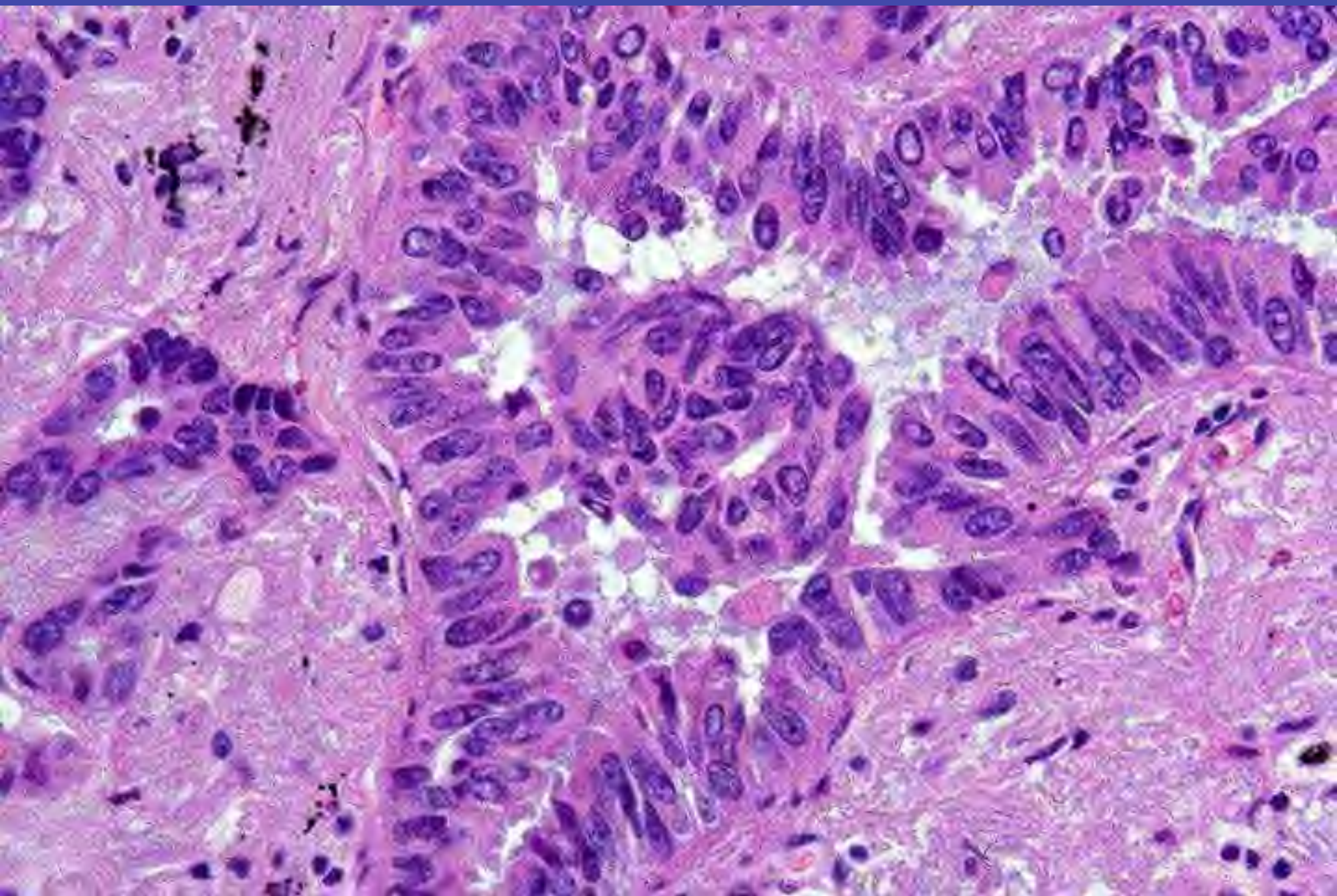


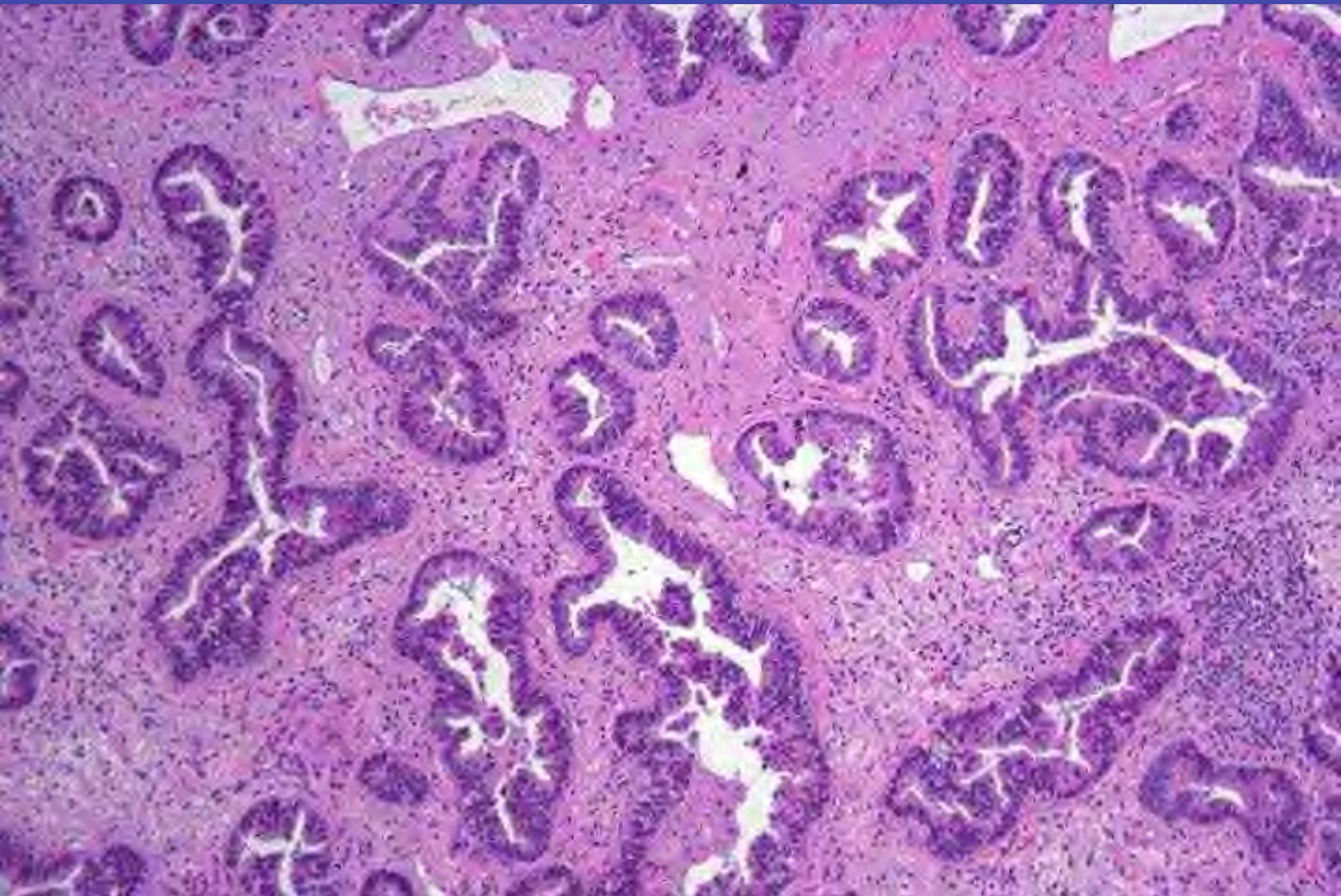


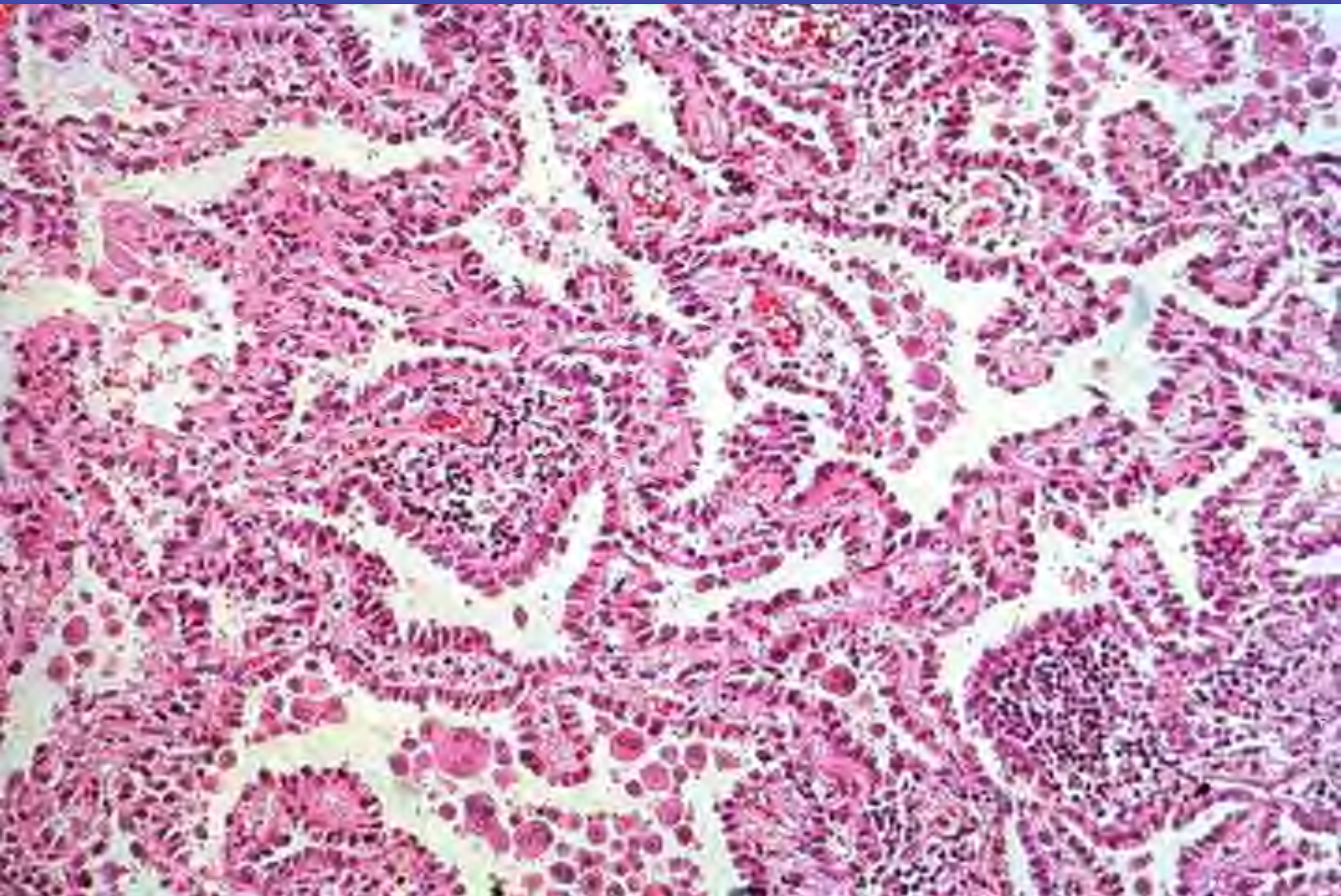


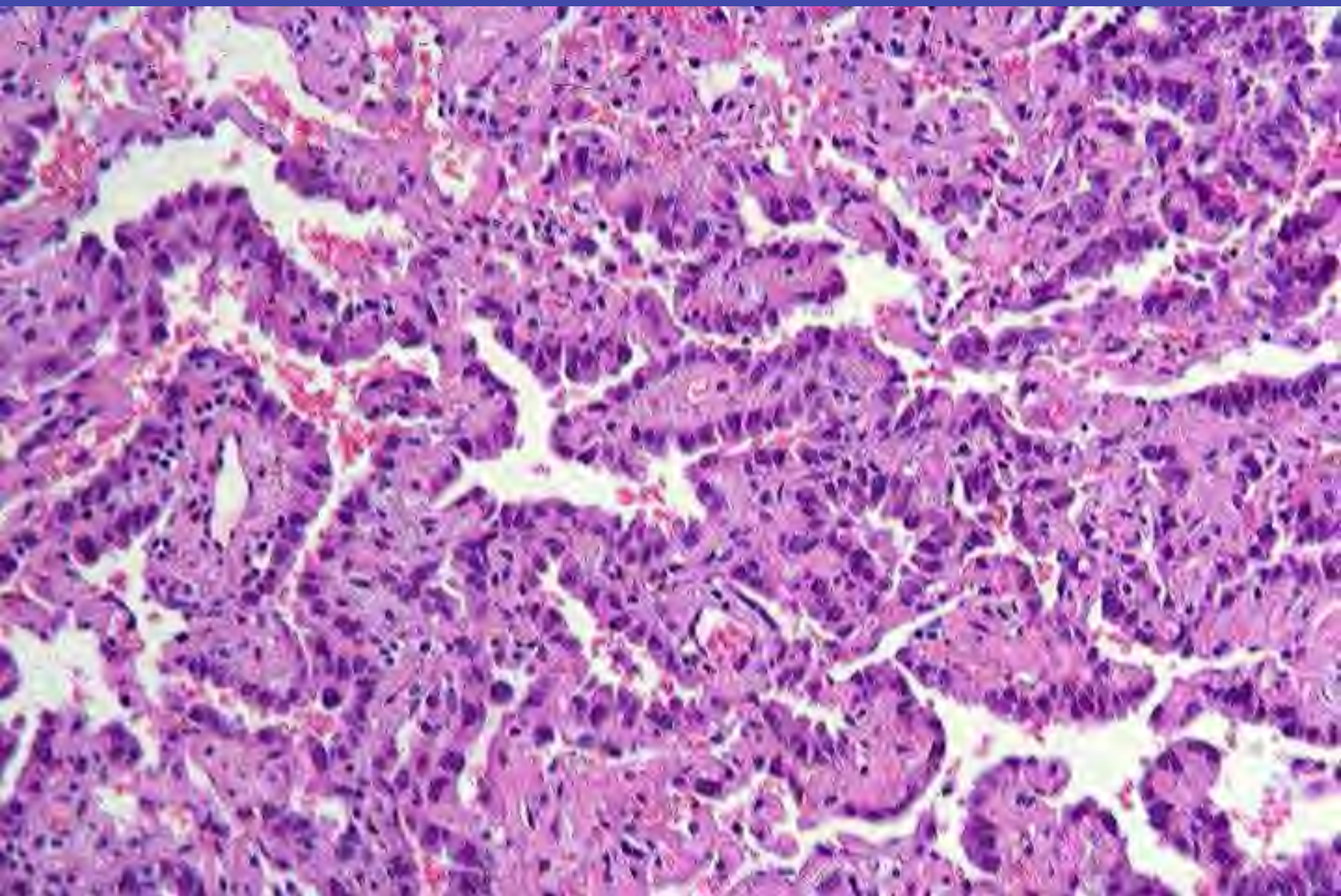


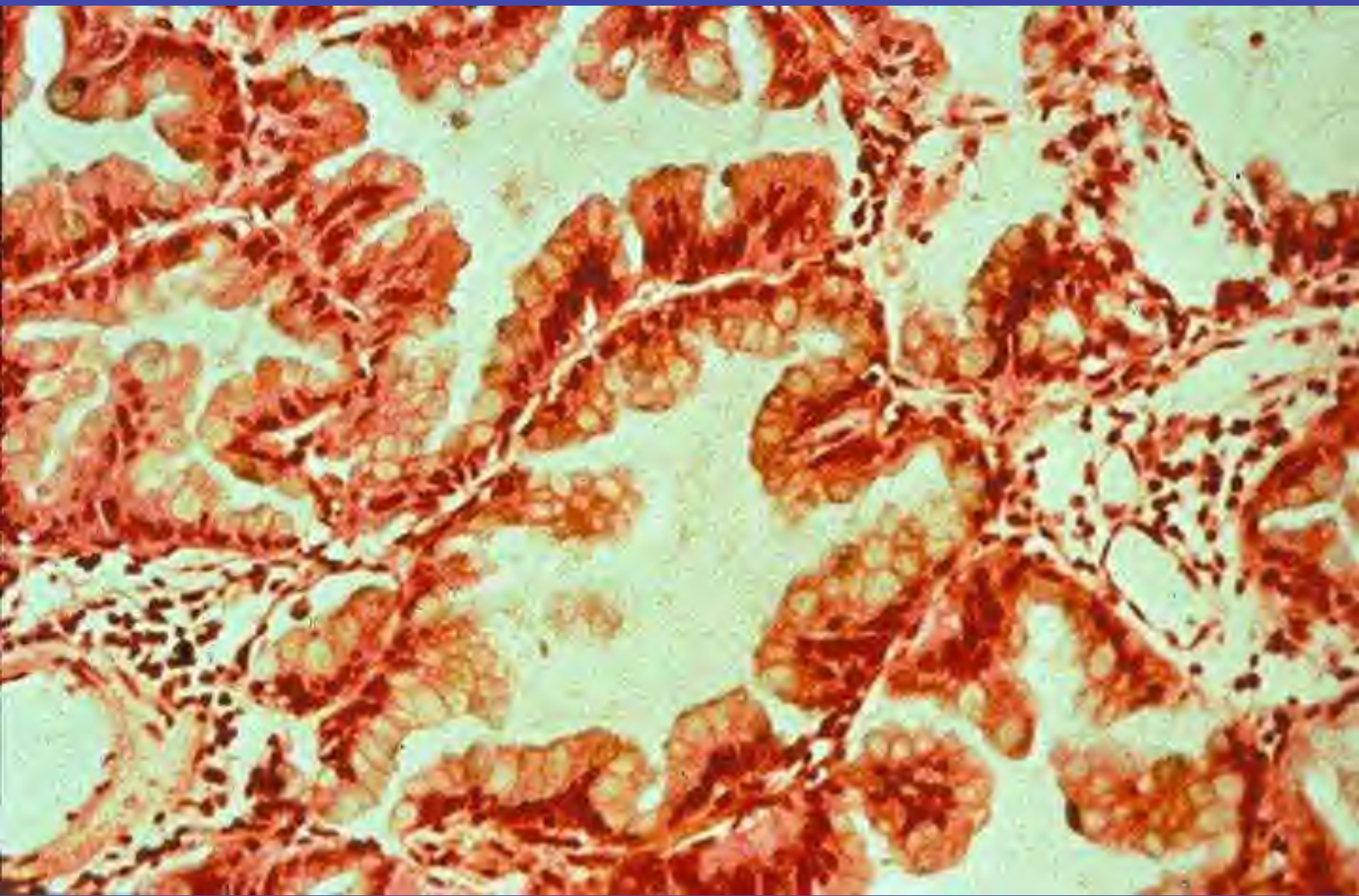


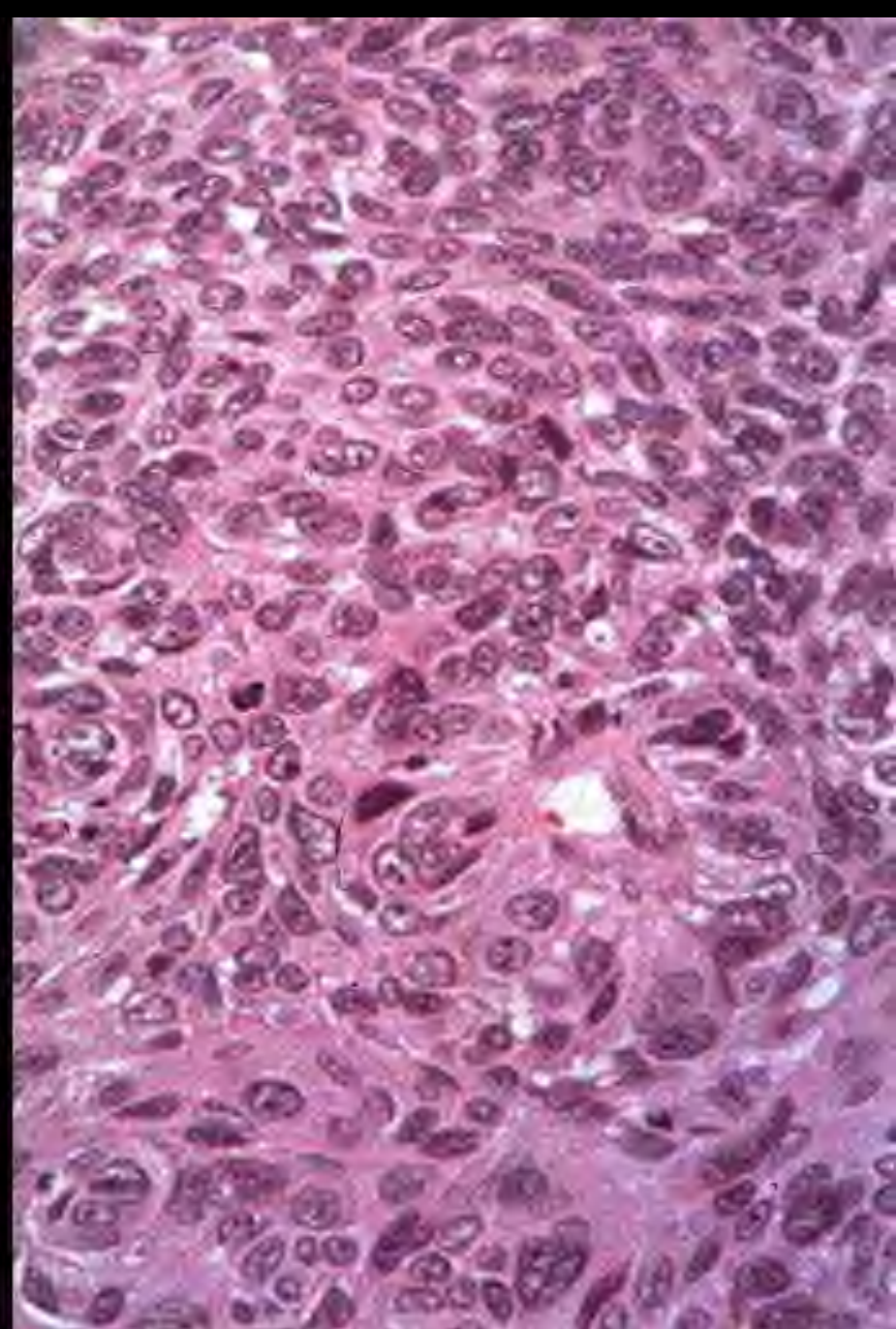
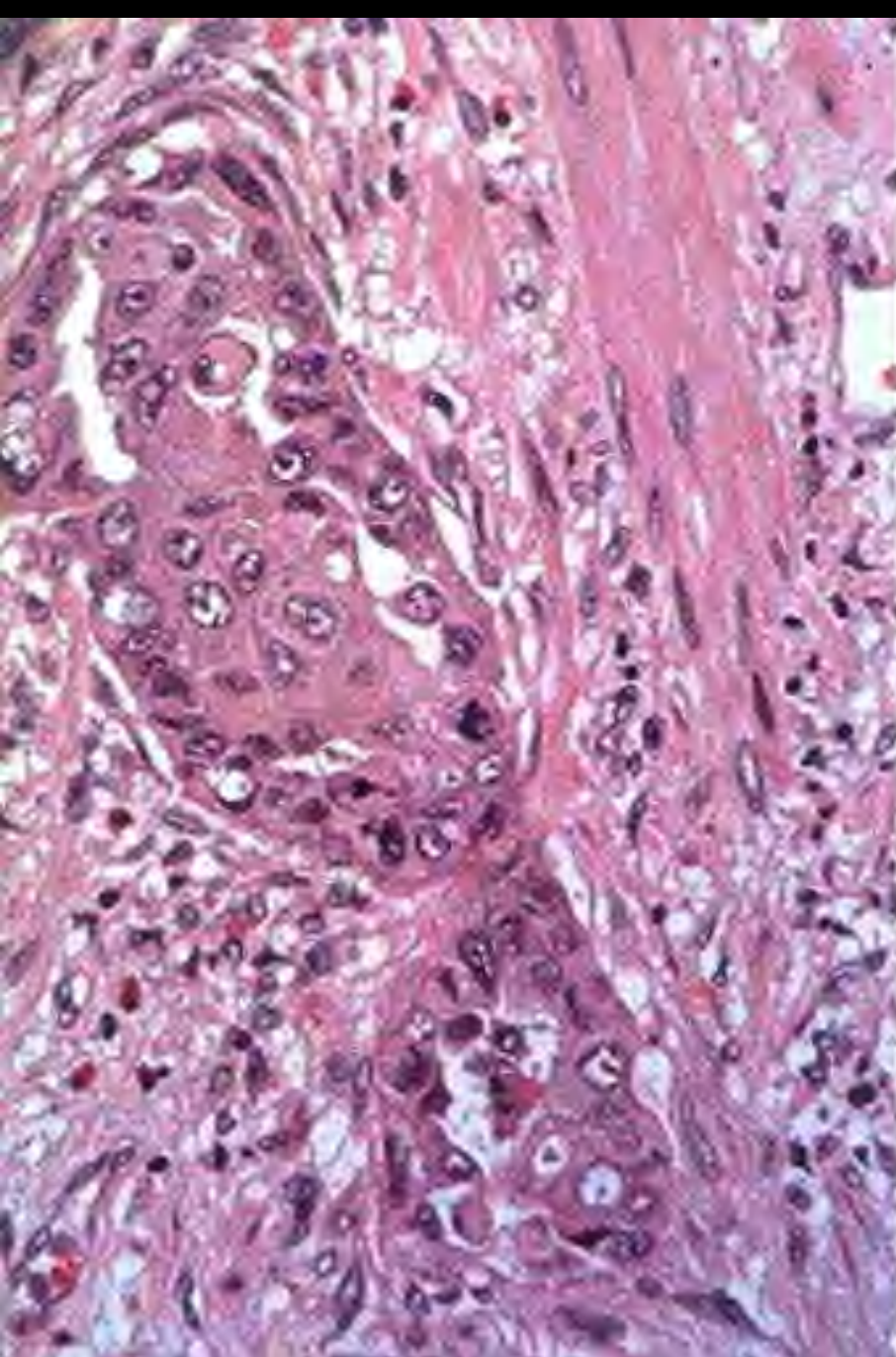












M-2 Respiratory Laboratory - 3

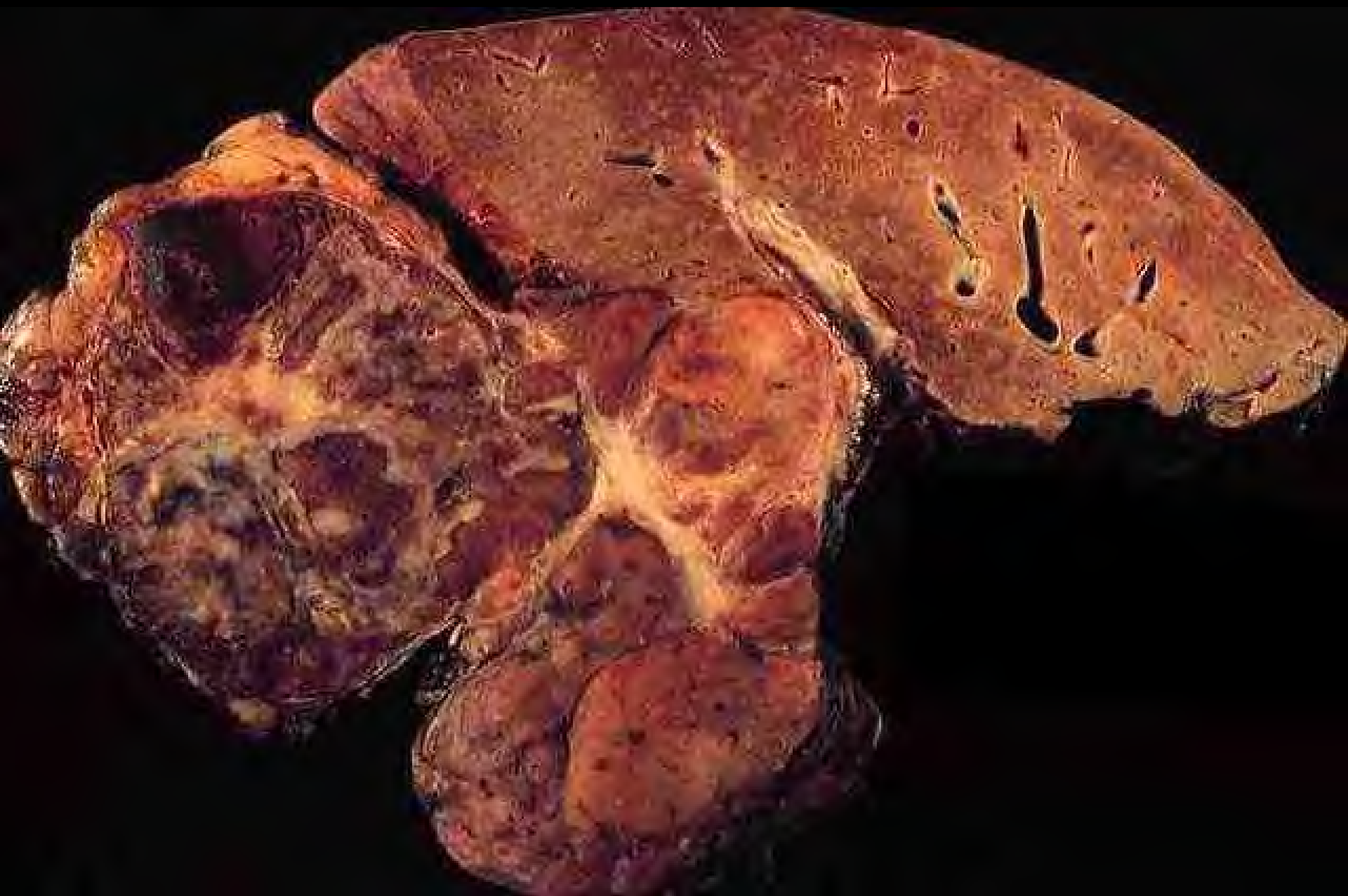
74 Squamous cell carcinoma

75 Adenocarcinoma

28 Small cell carcinoma

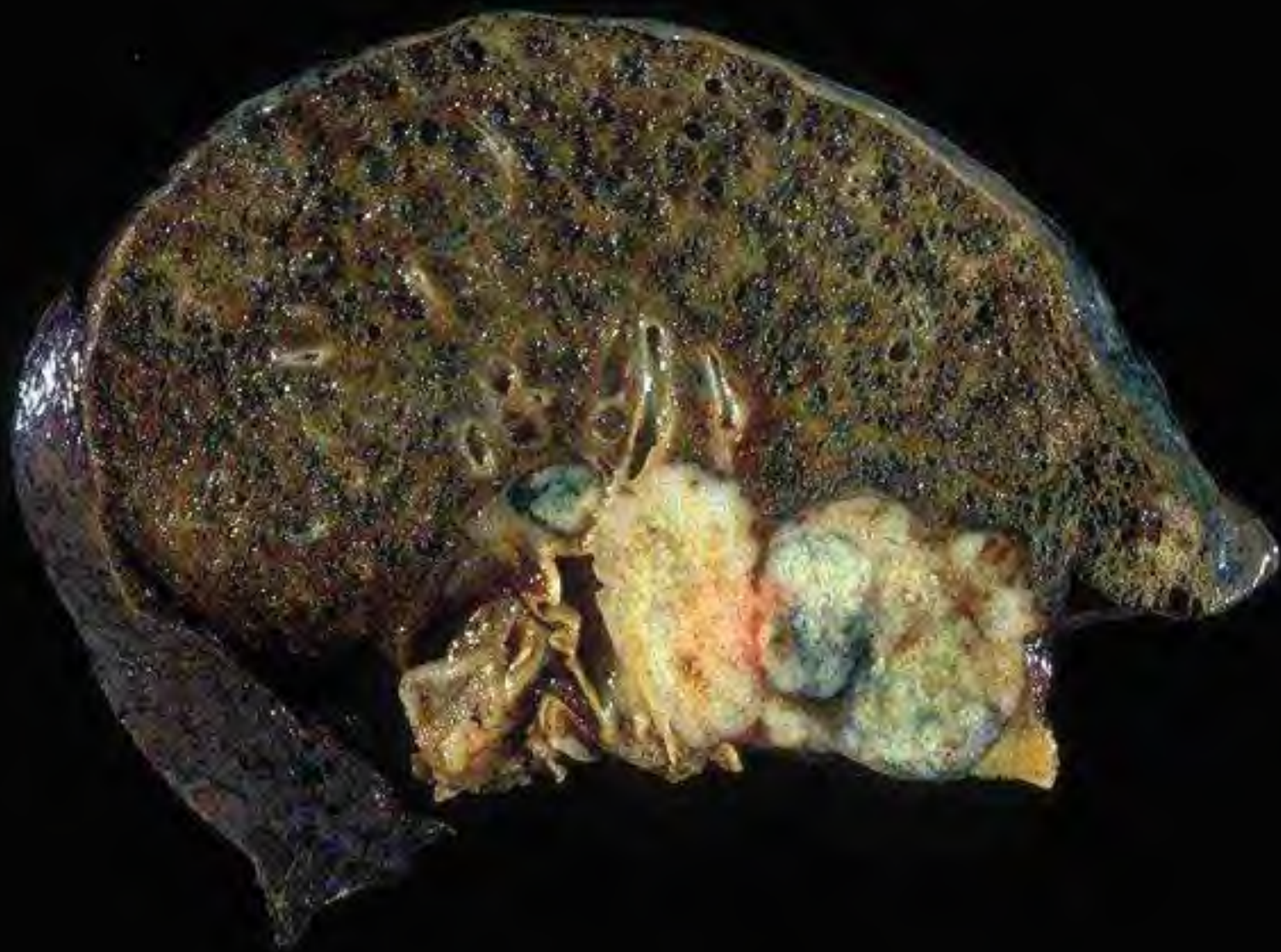
73 Carcinoid tumor

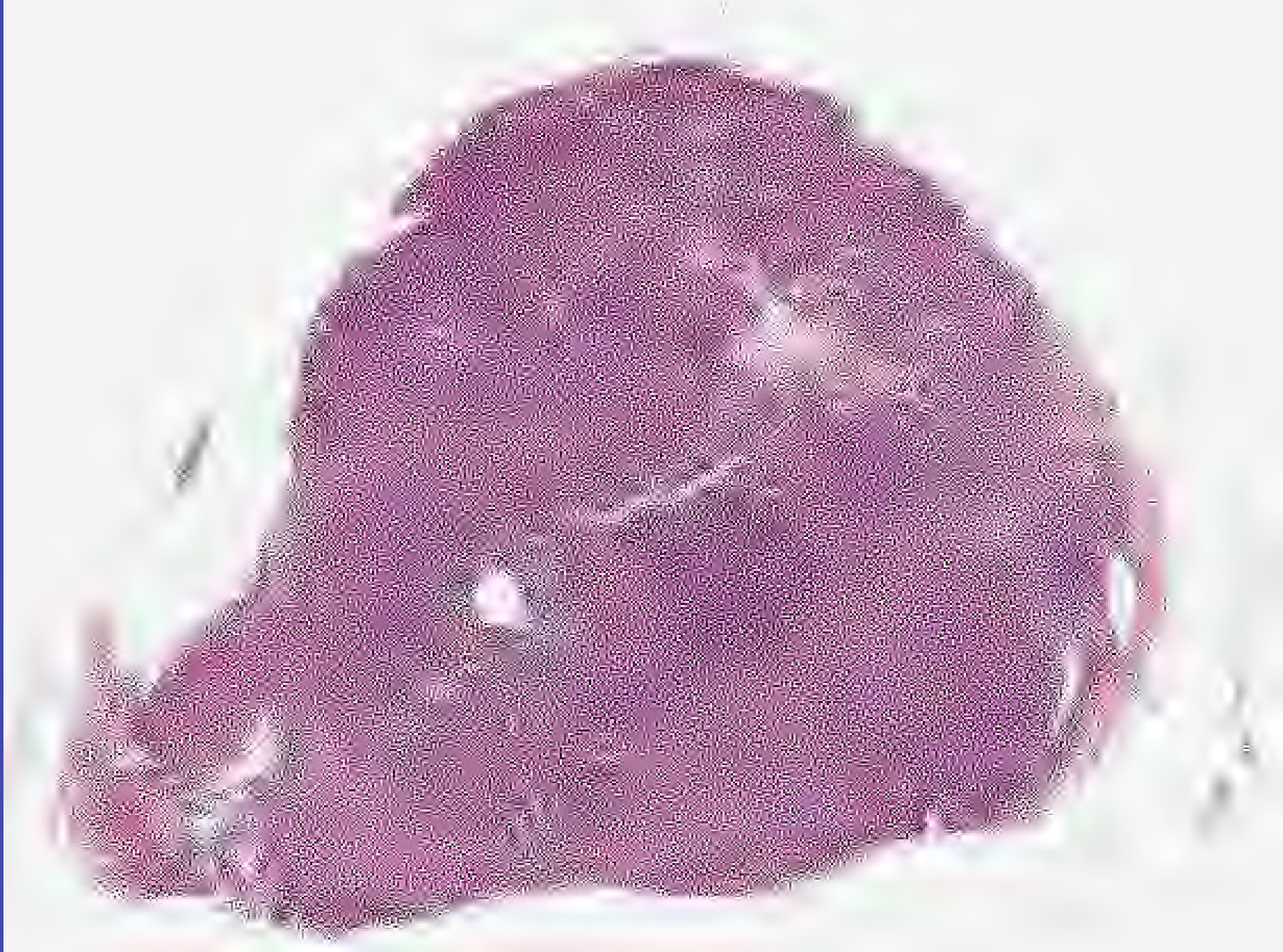
CPC

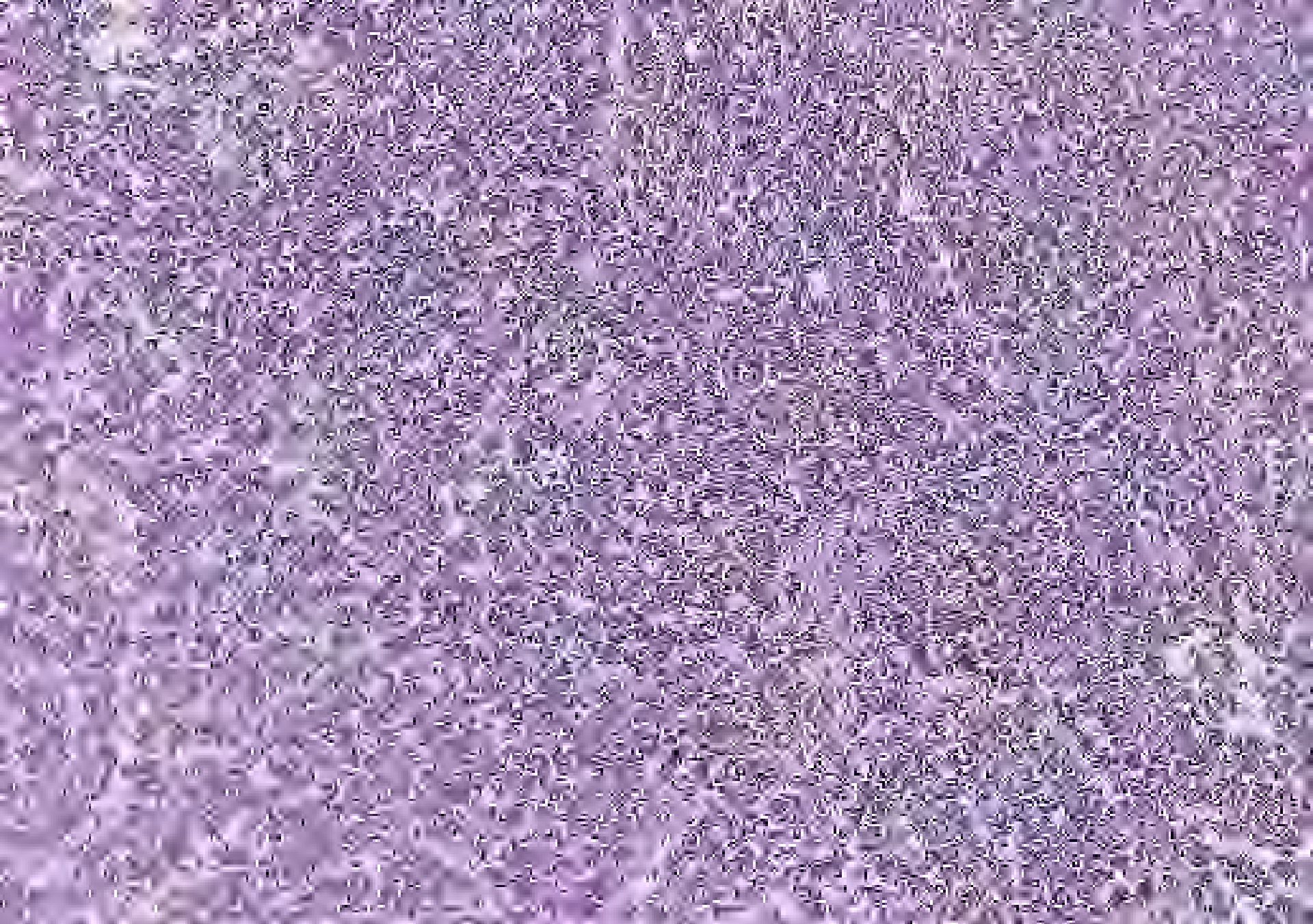


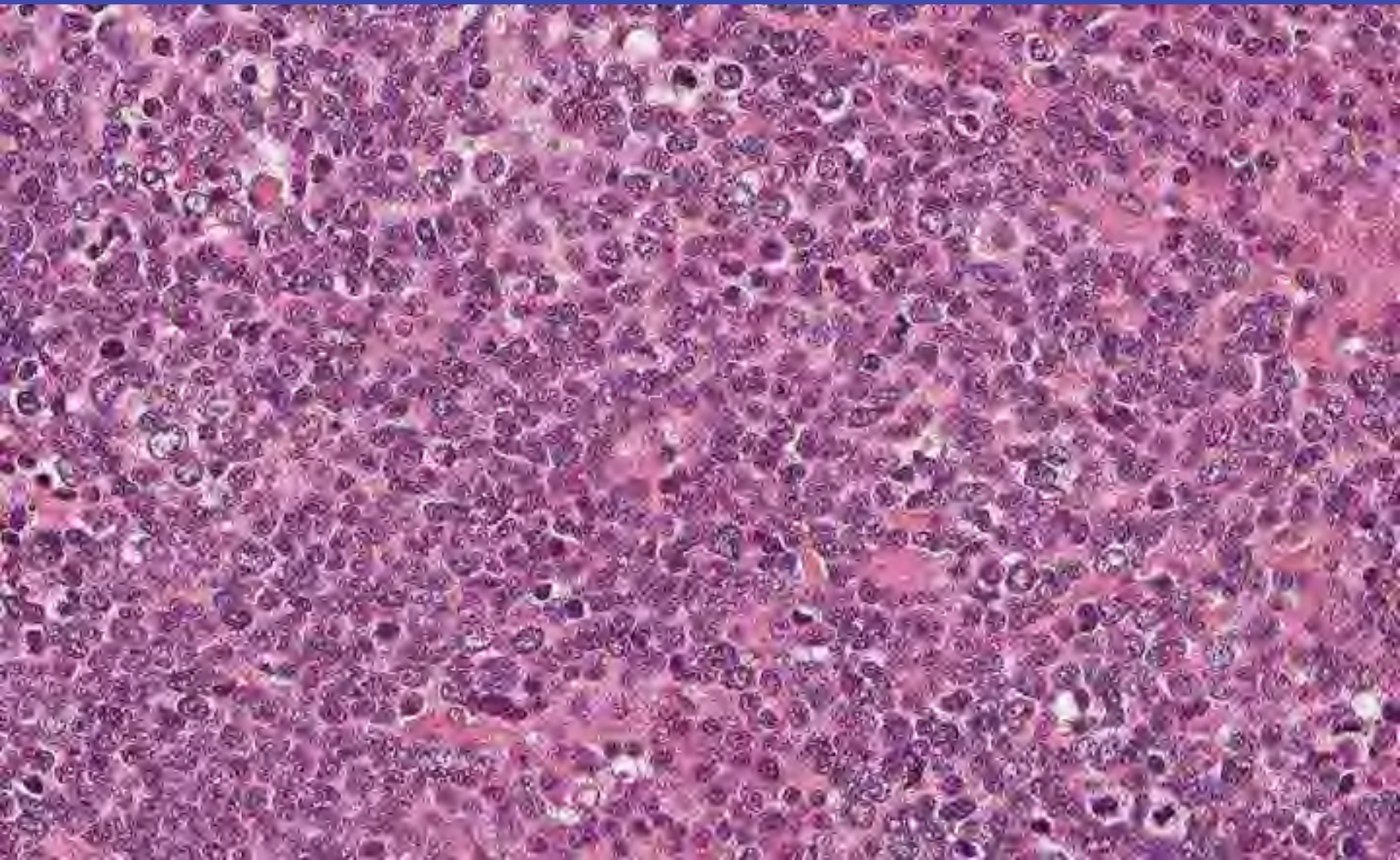


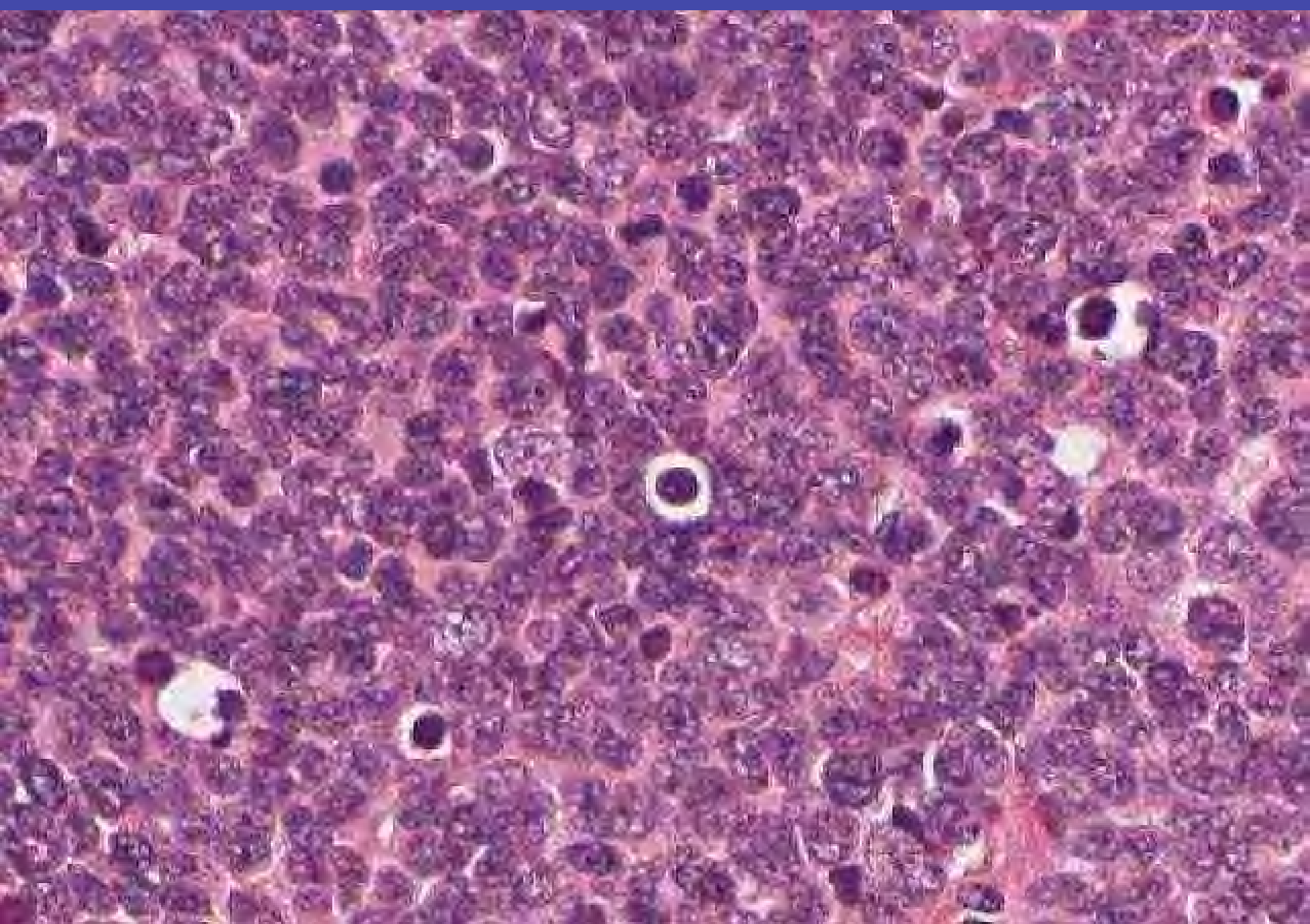


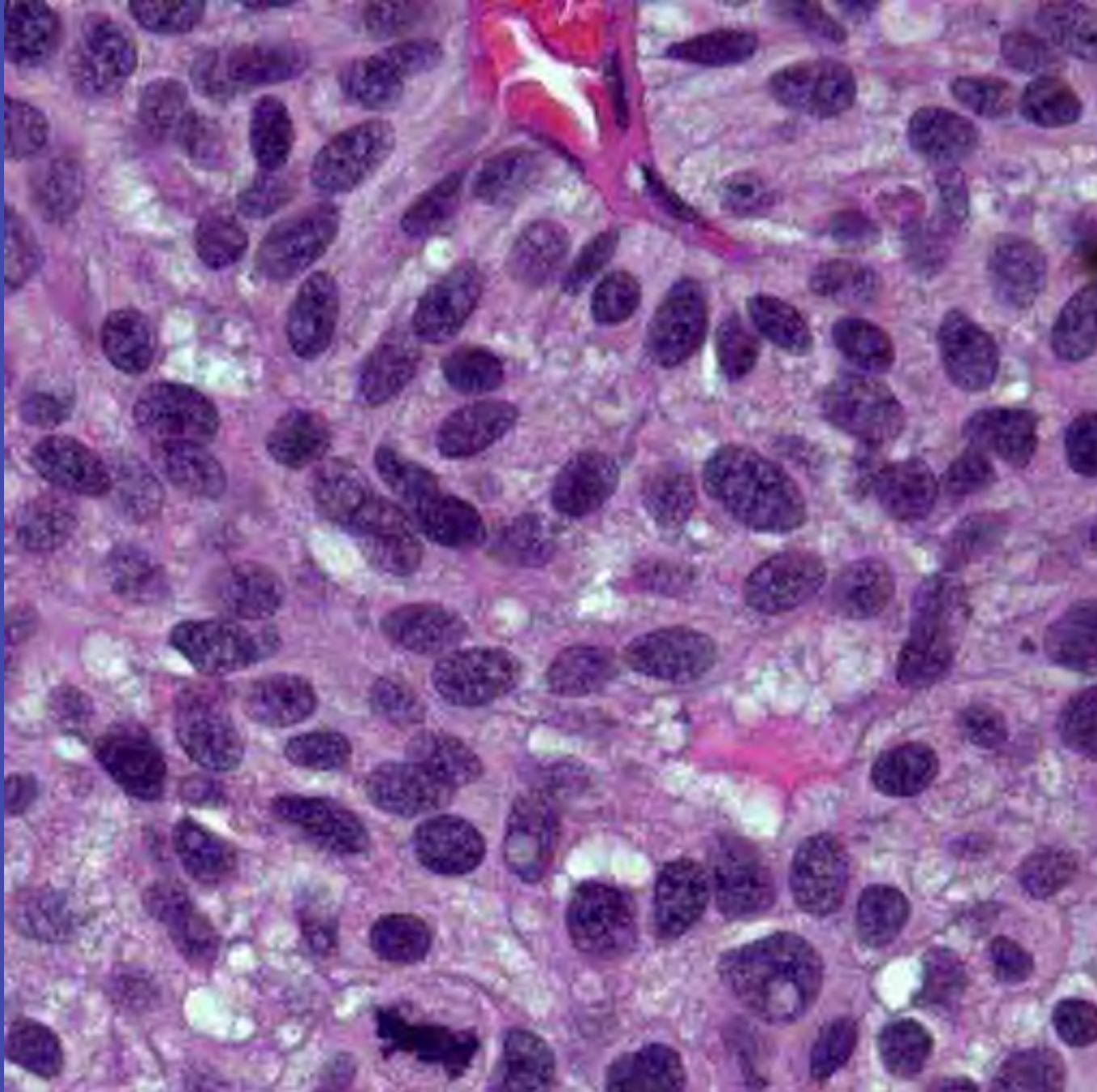


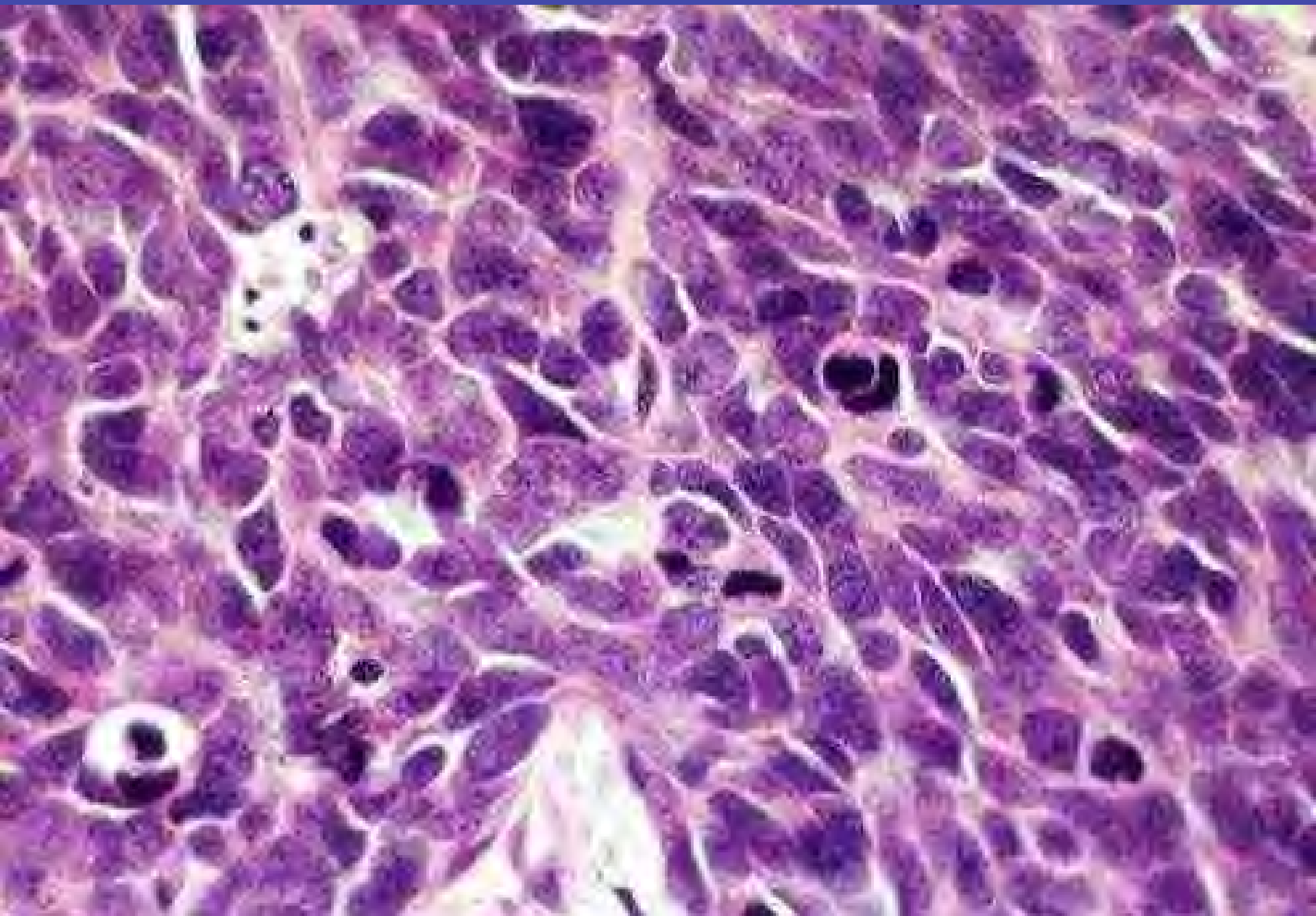












M-2 Respiratory Laboratory - 3

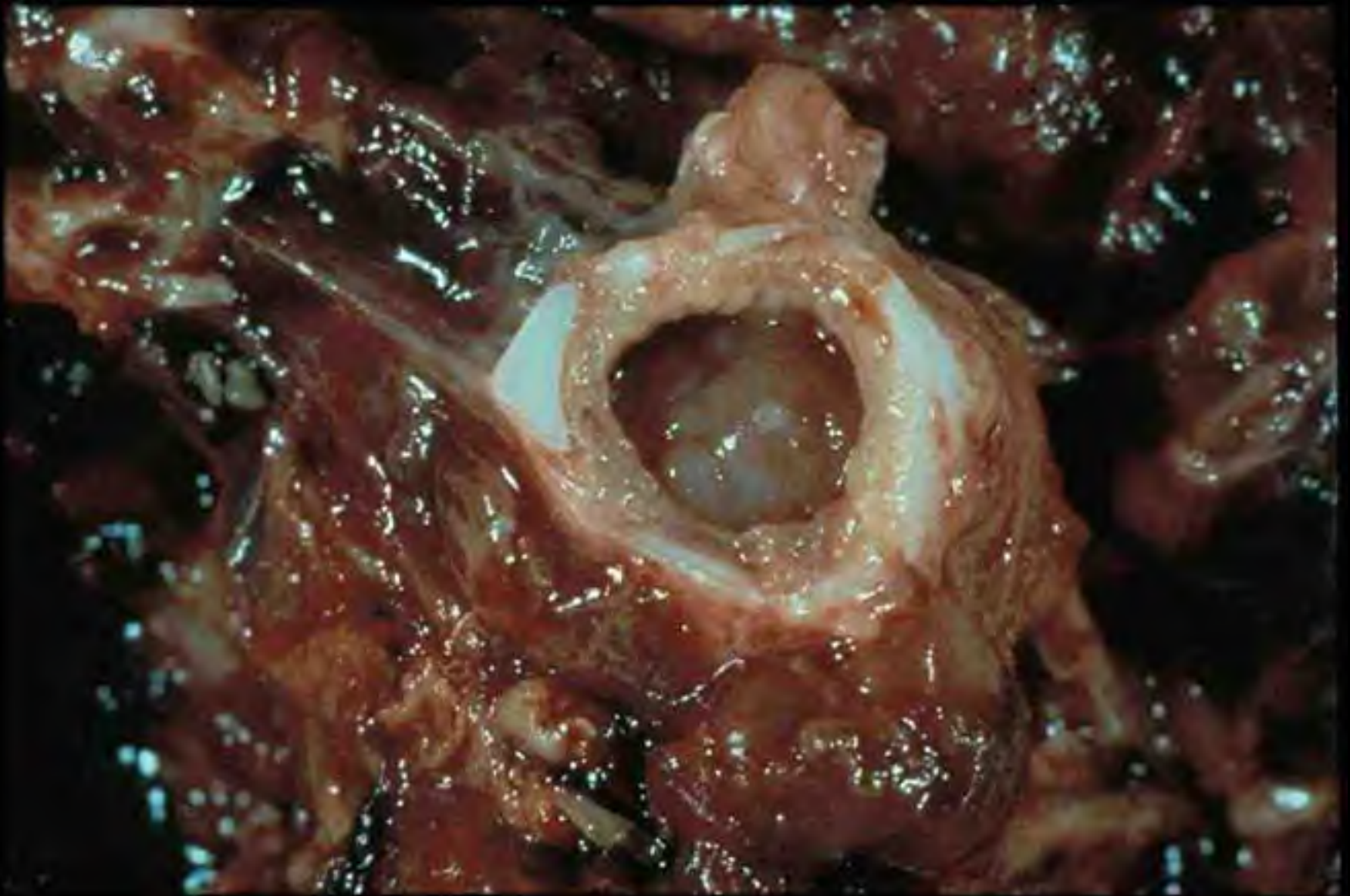
74 Squamous cell carcinoma

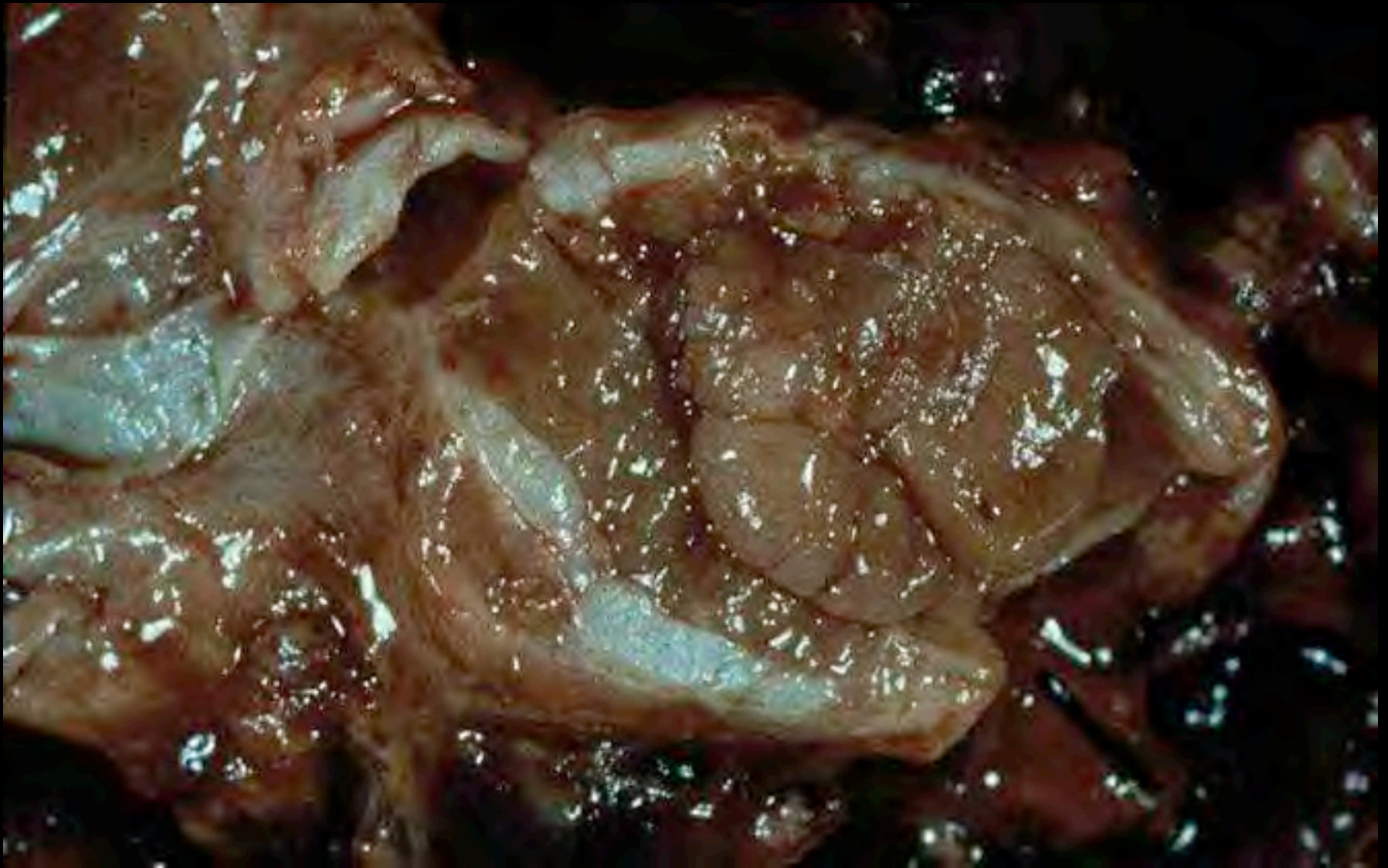
75 Adenocarcinoma

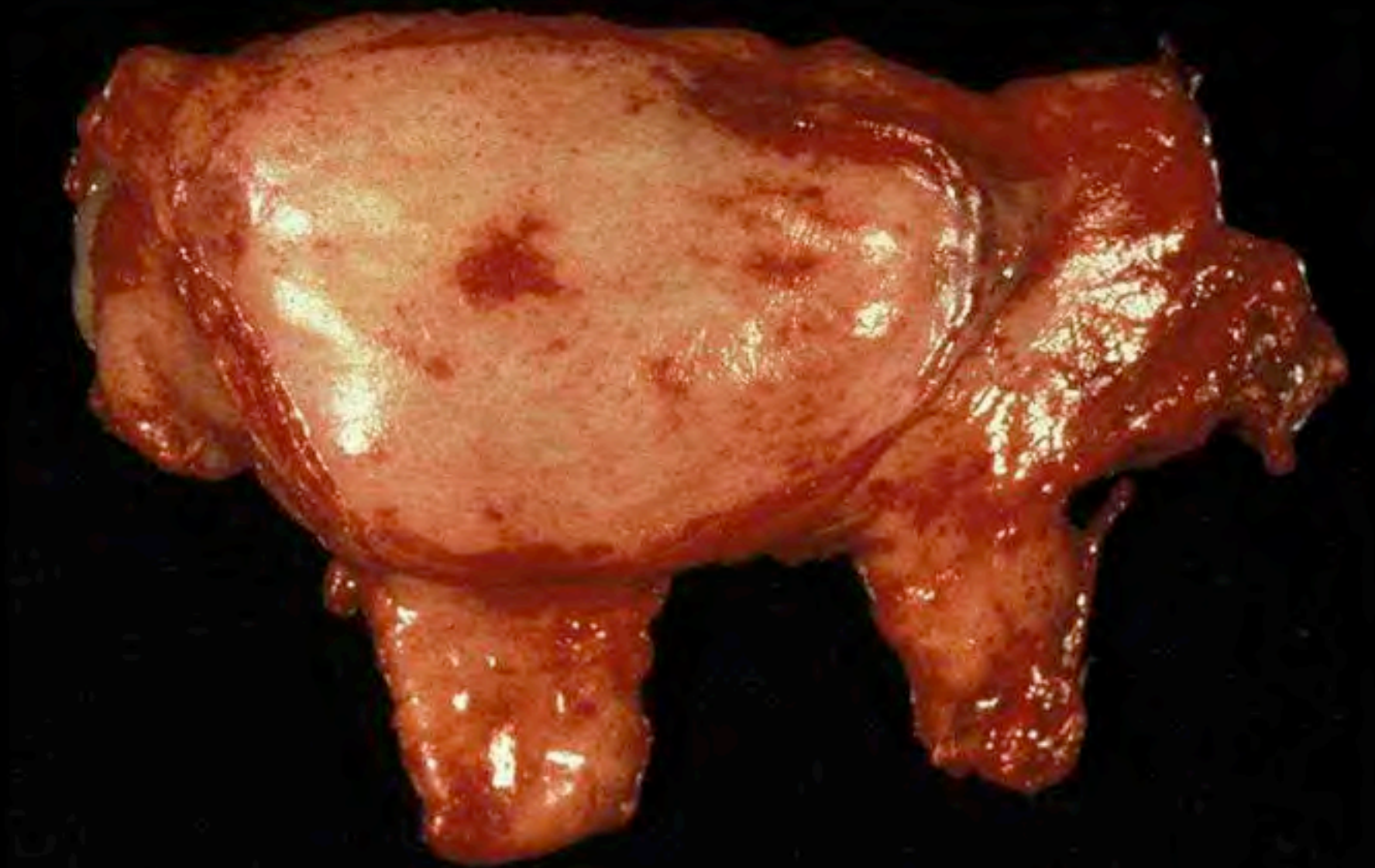
28 Small cell carcinoma

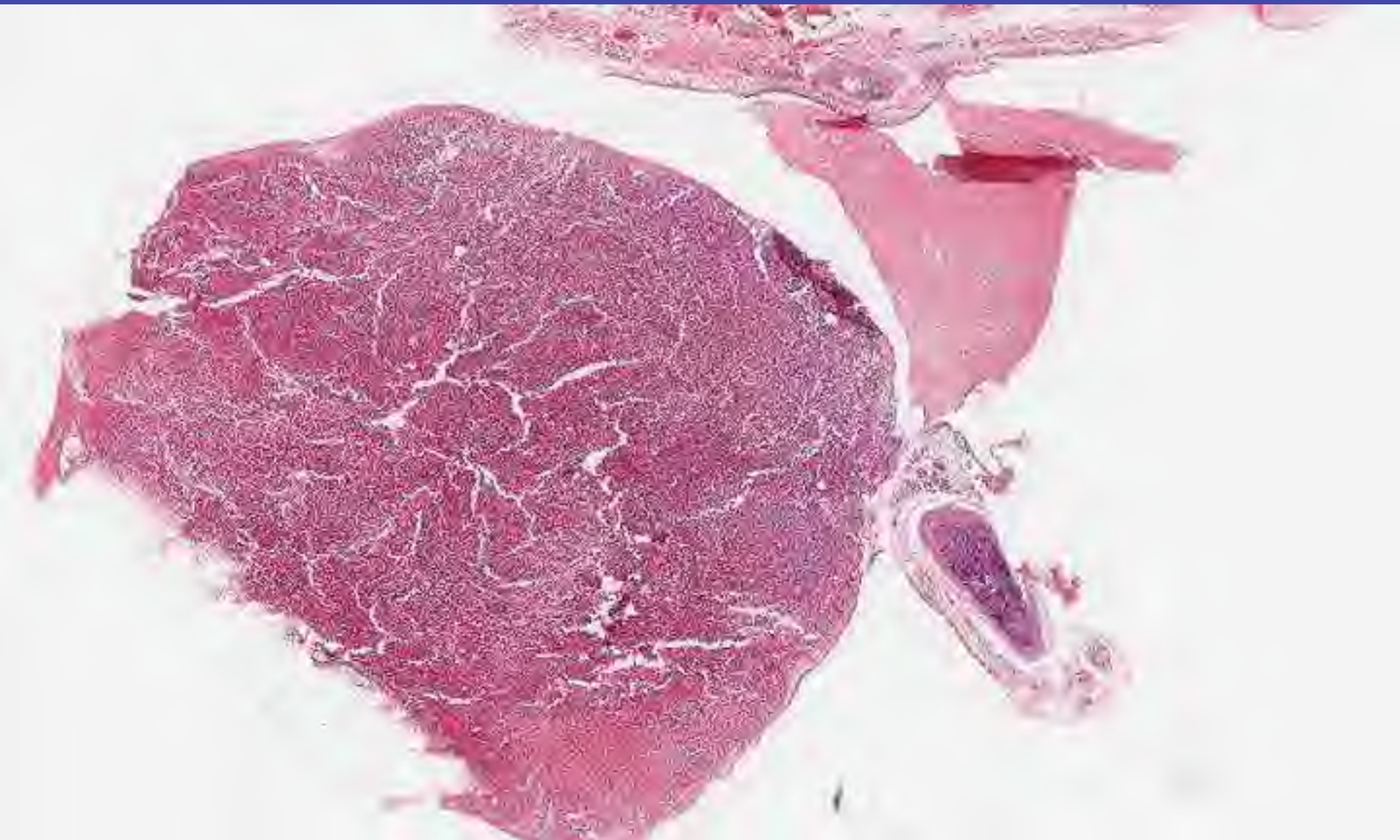
73 Carcinoid tumor

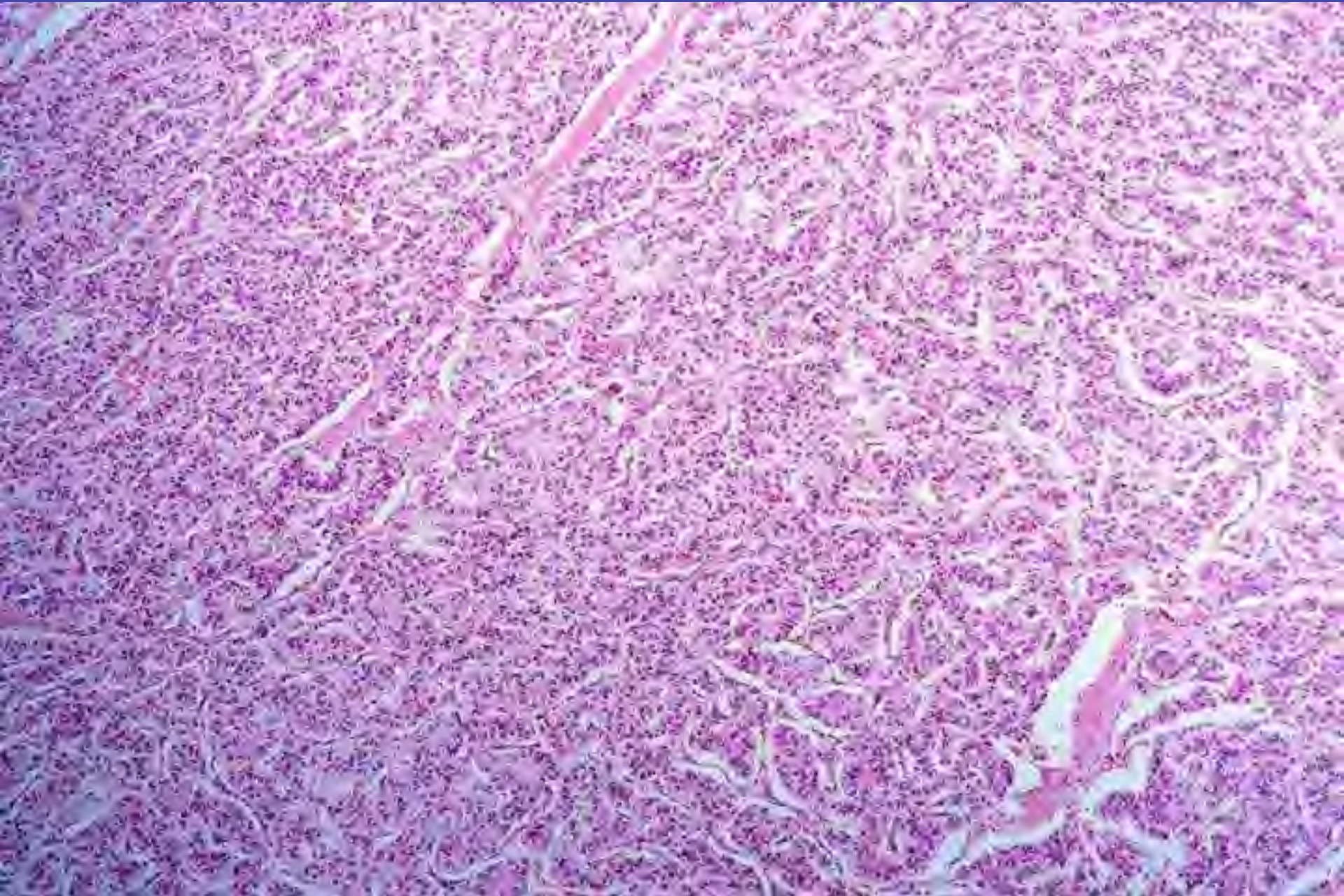
CPC

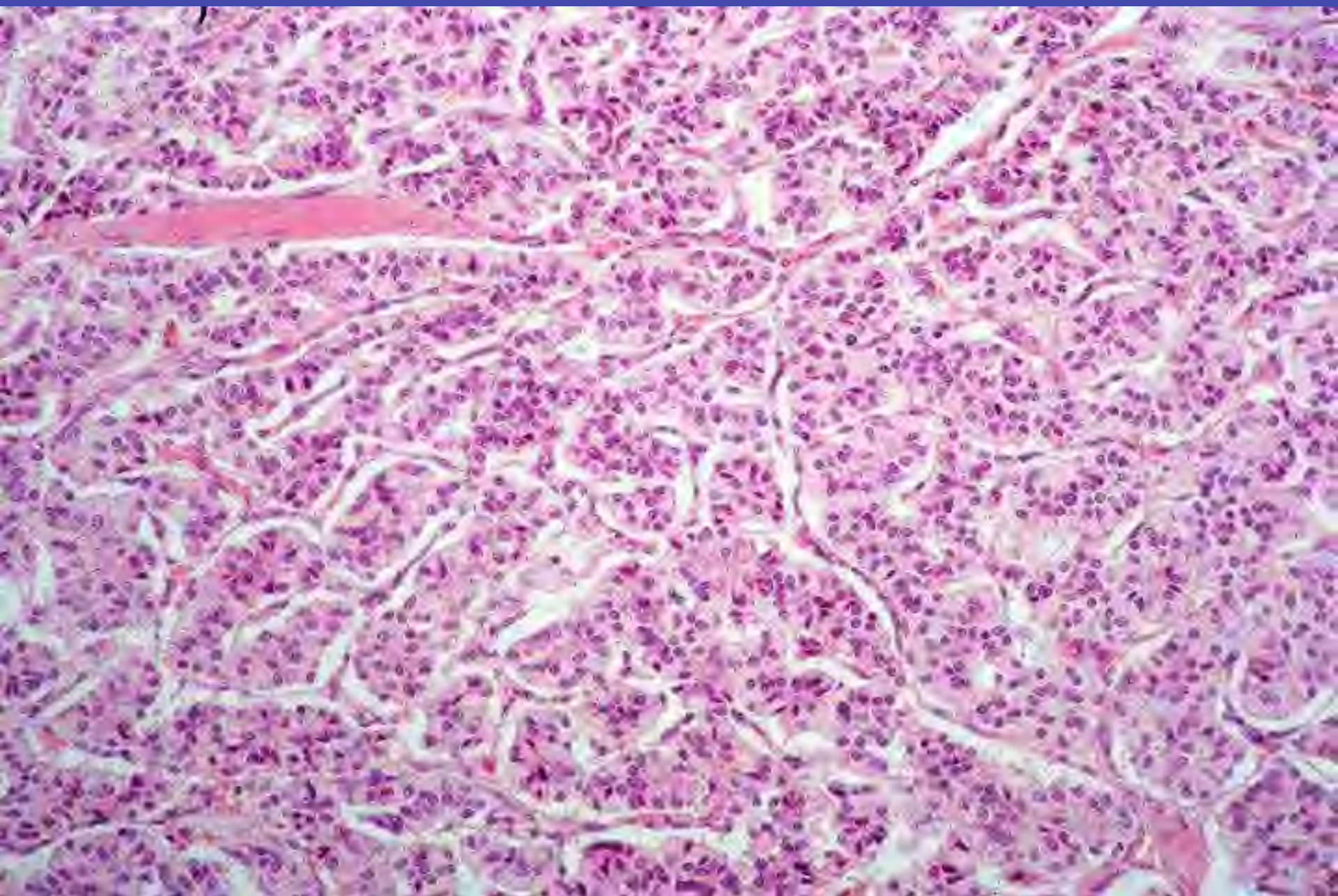


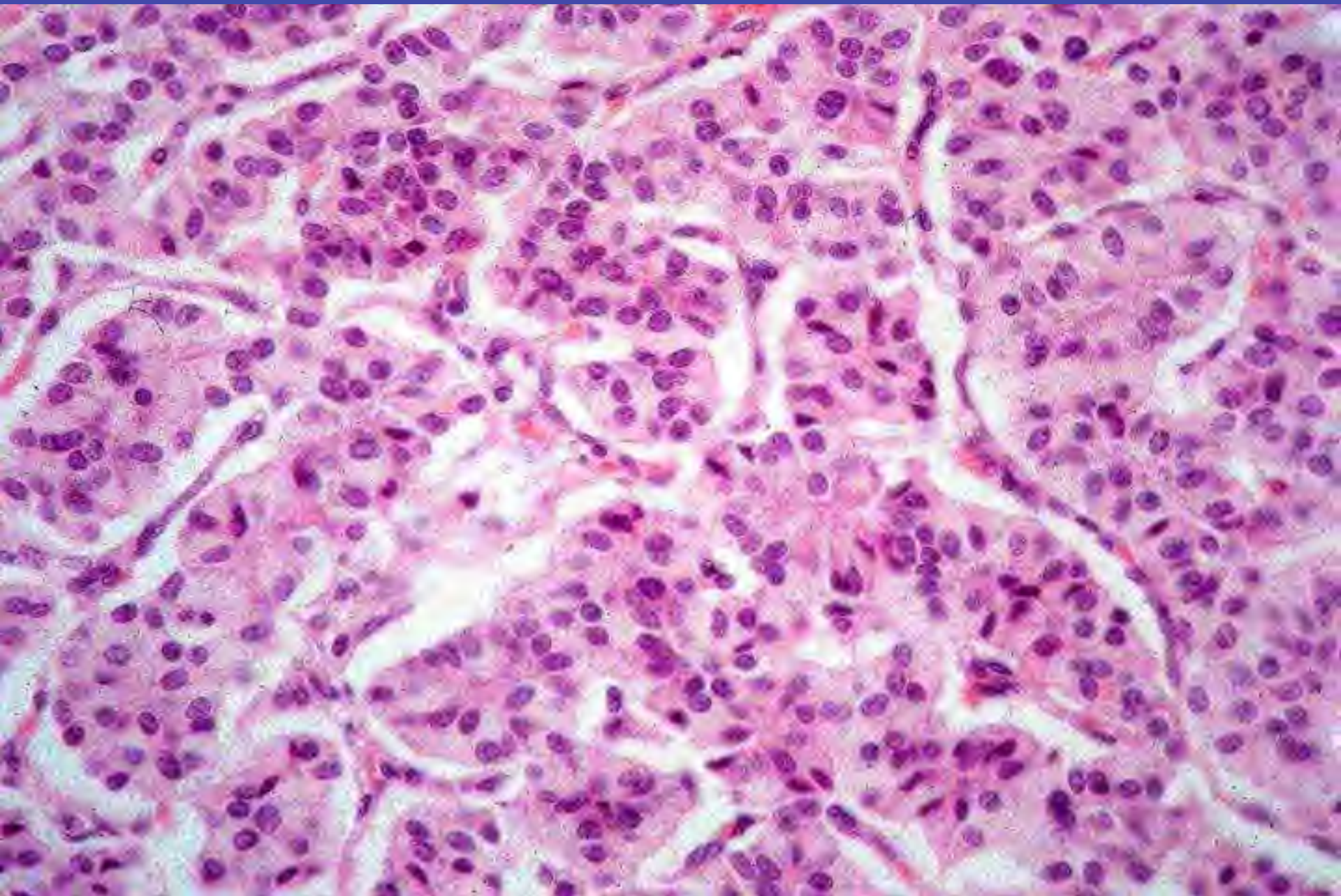


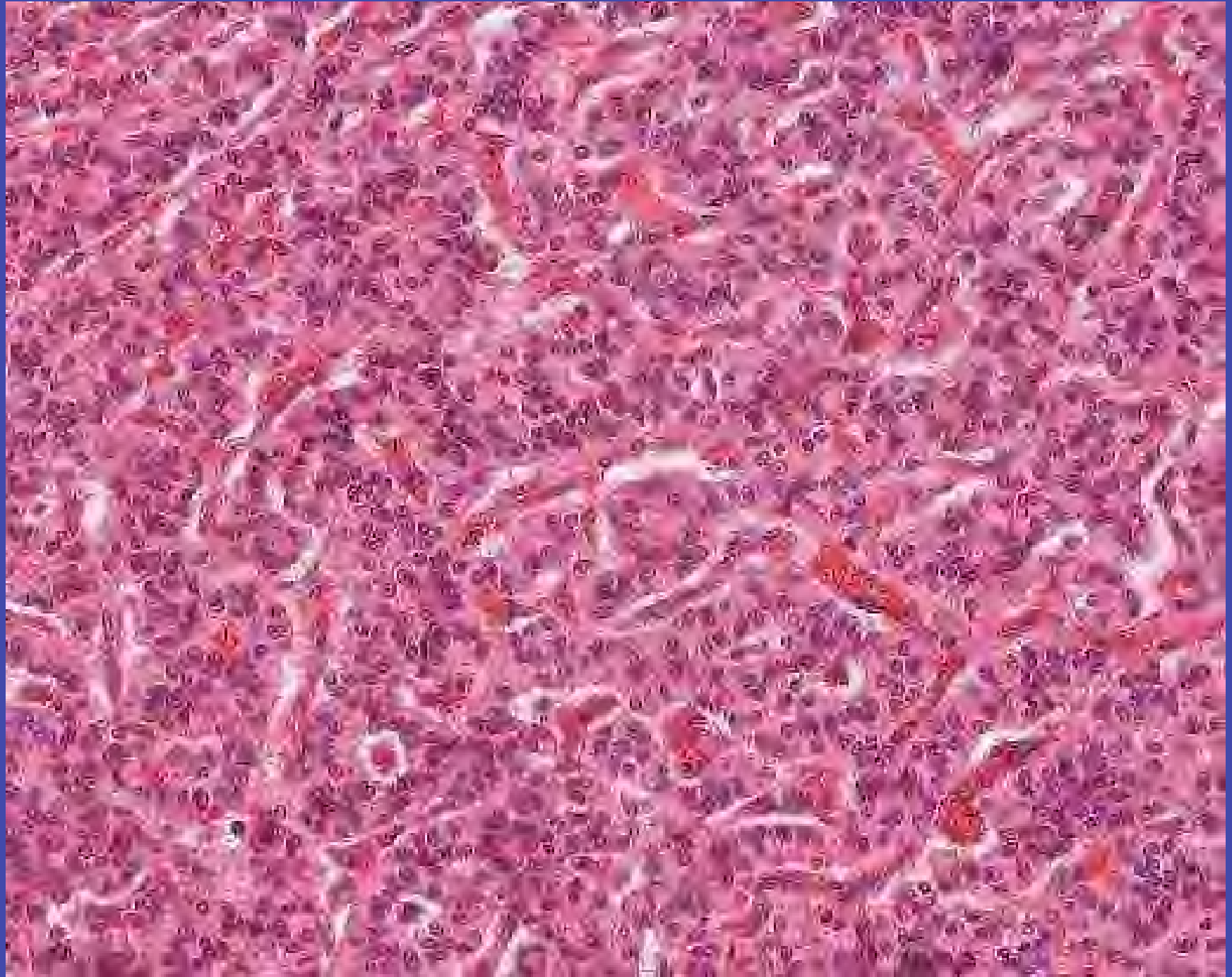


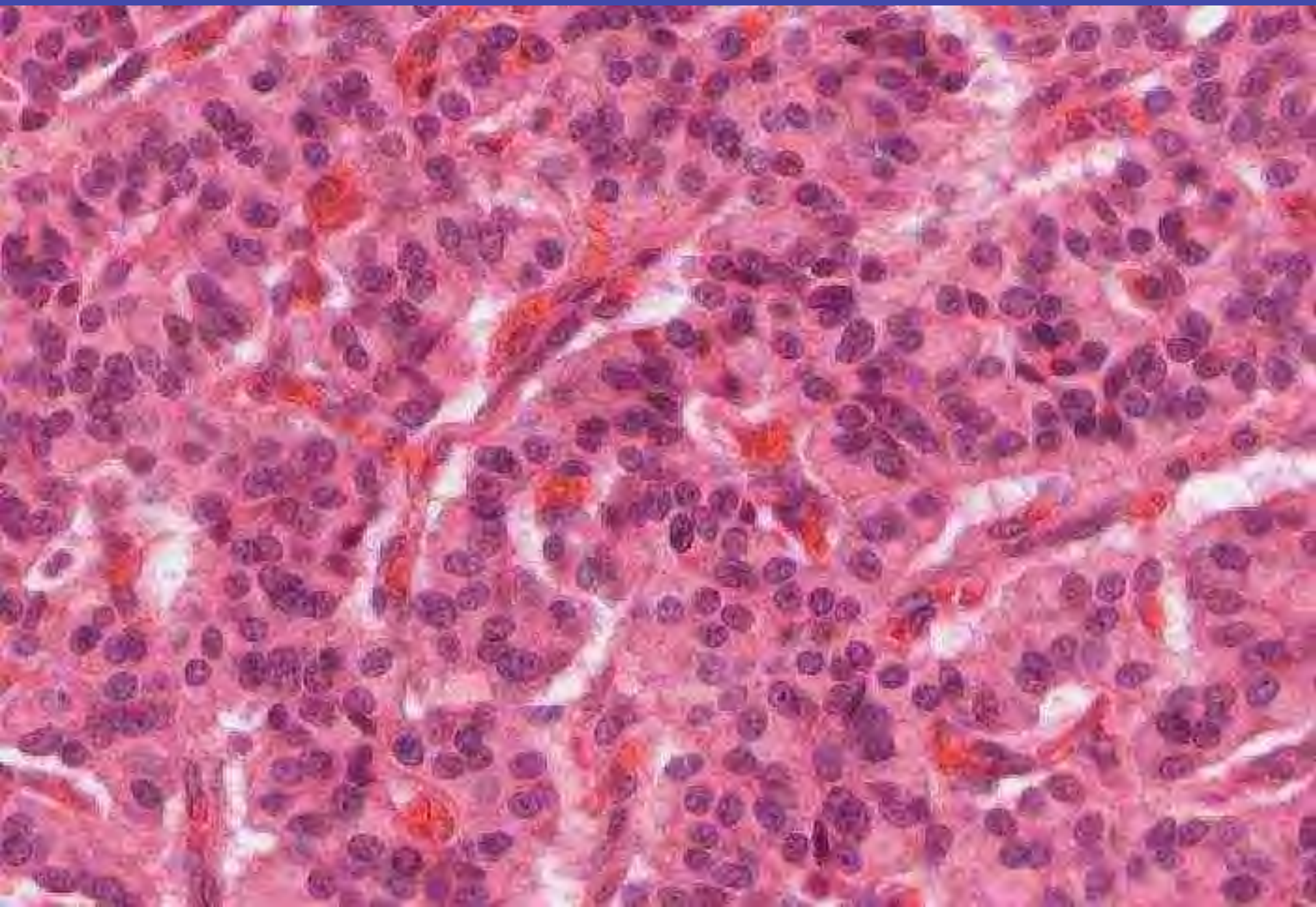


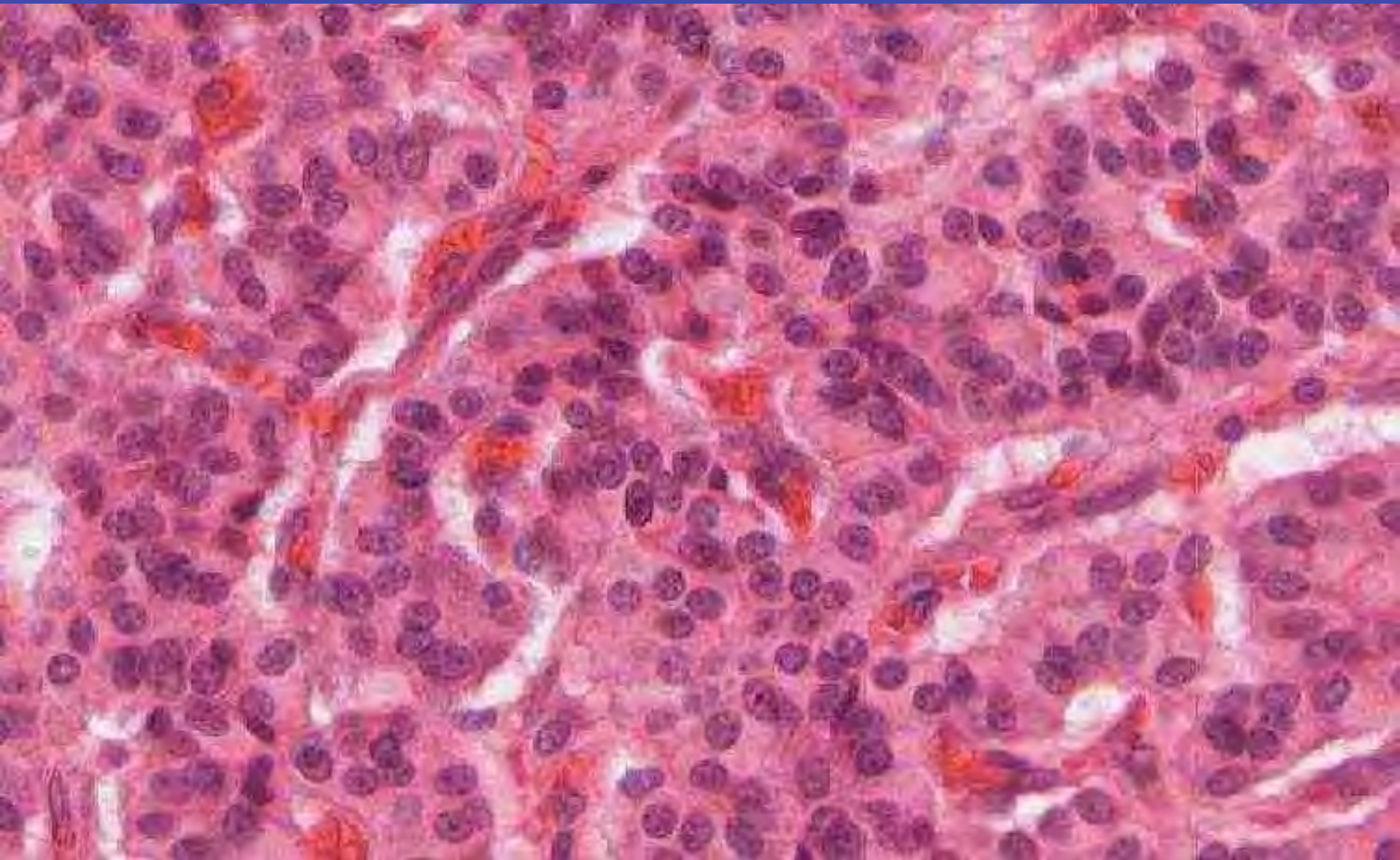












M-2 Respiratory Laboratory - 3

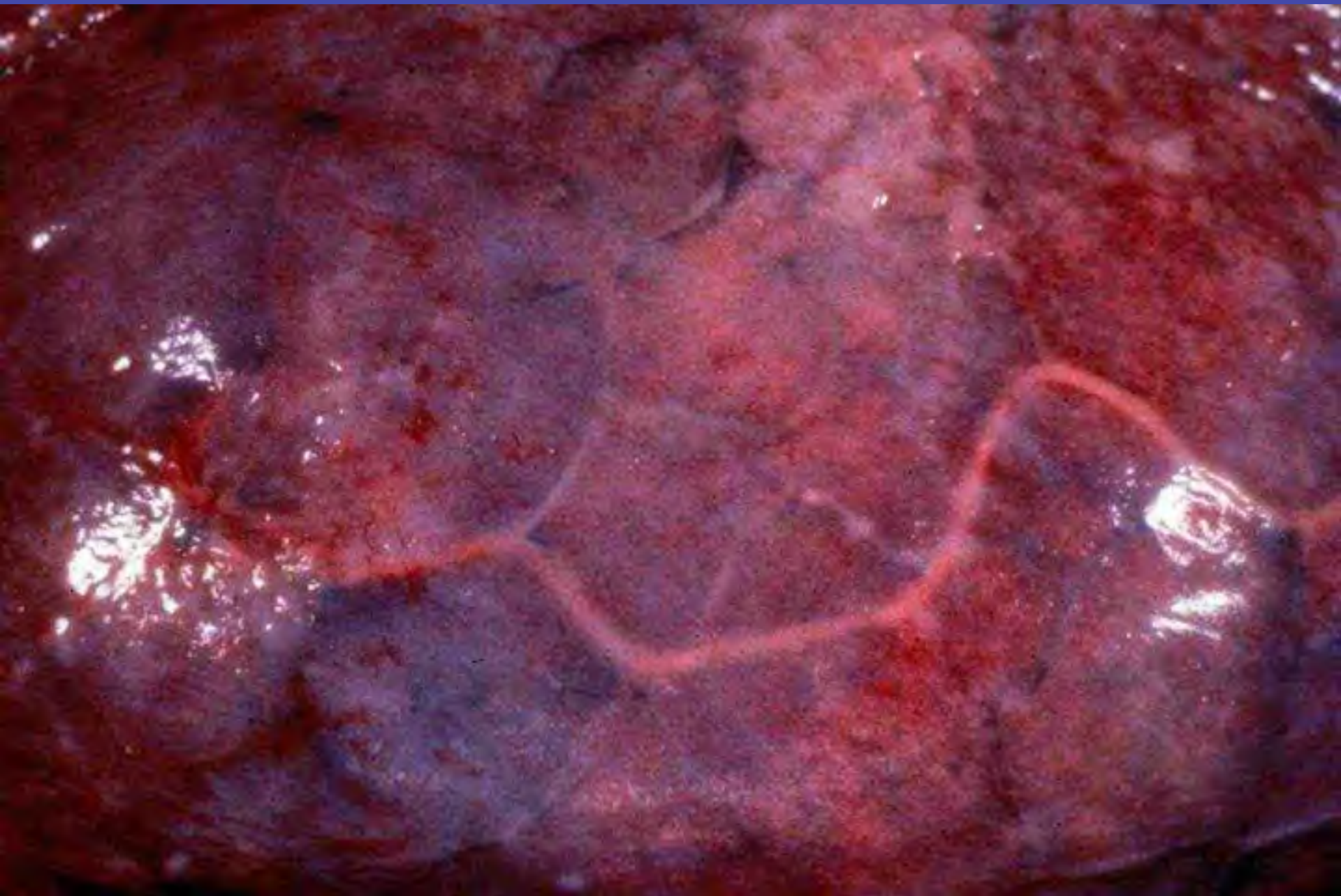
74 Squamous cell carcinoma

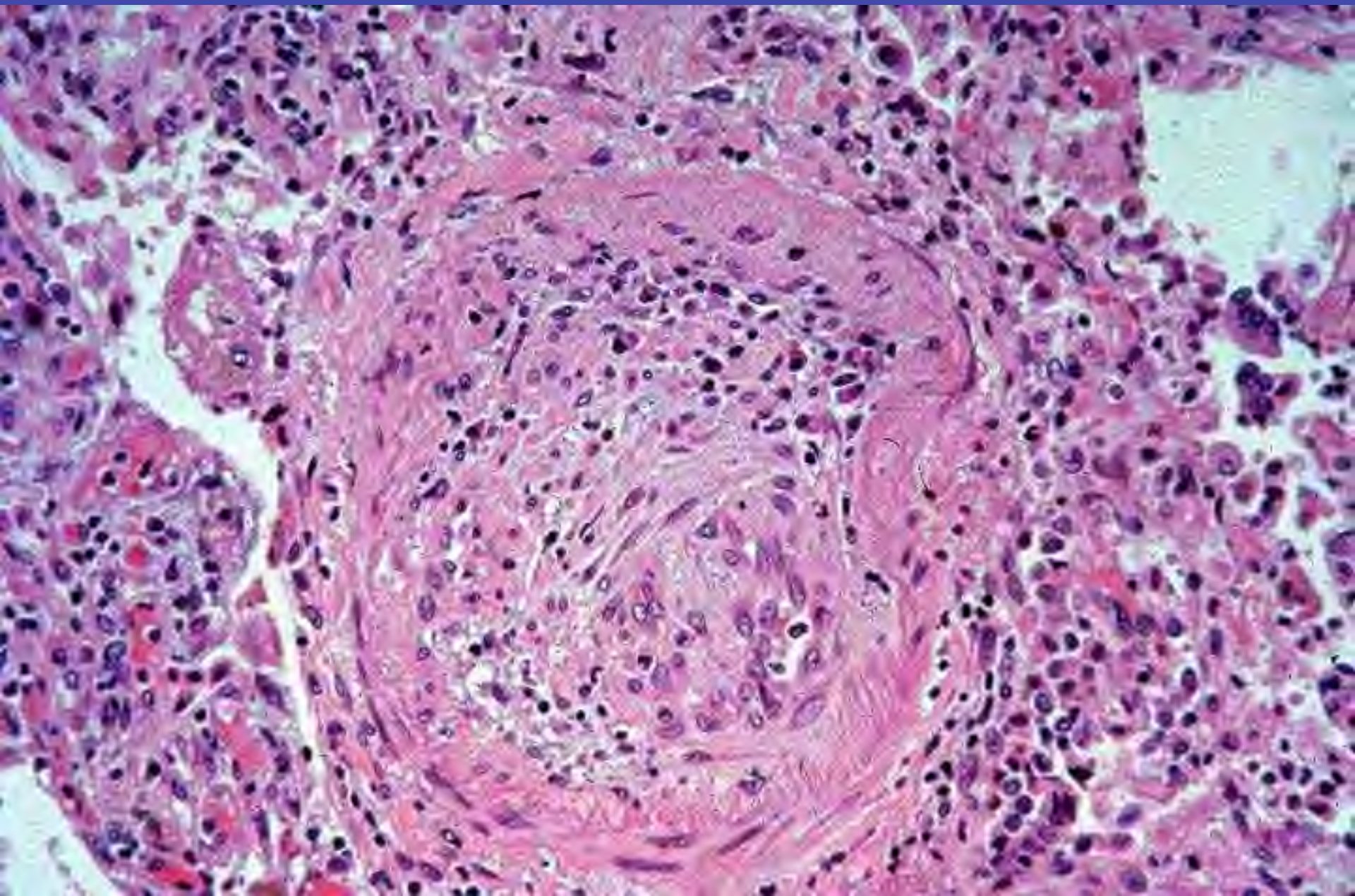
75 Adenocarcinoma

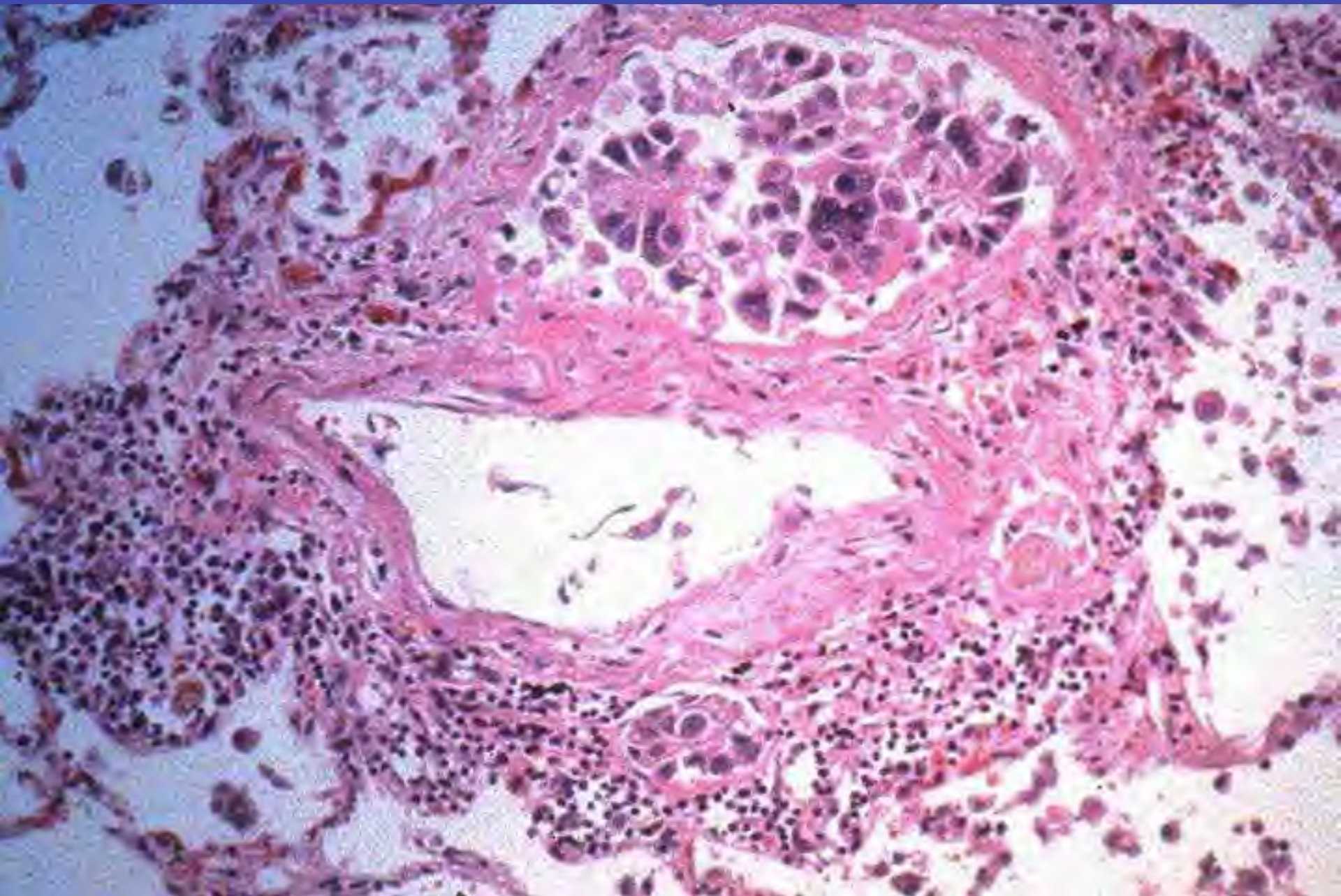
28 Small cell carcinoma

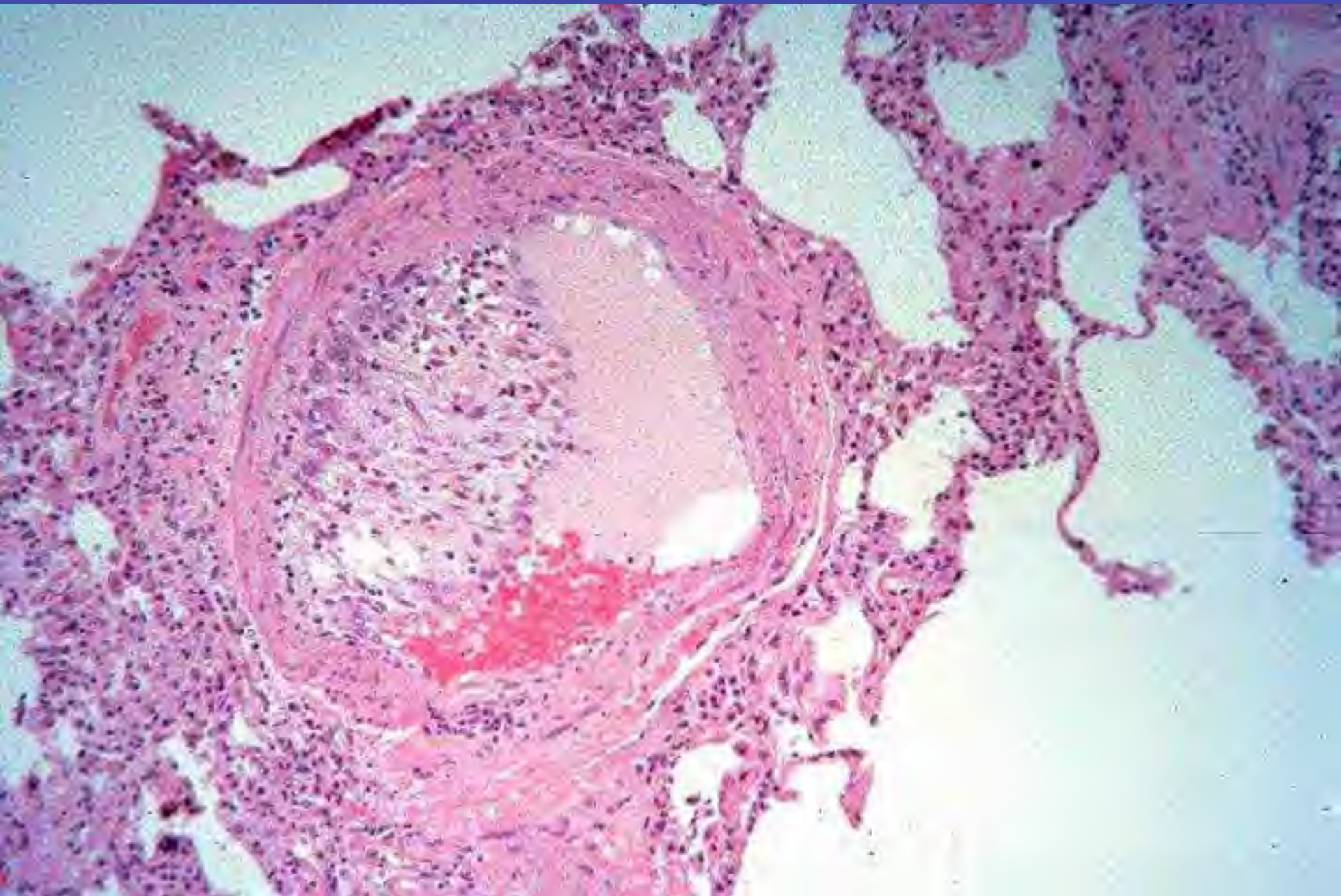
73 Carcinoid tumor

CPC










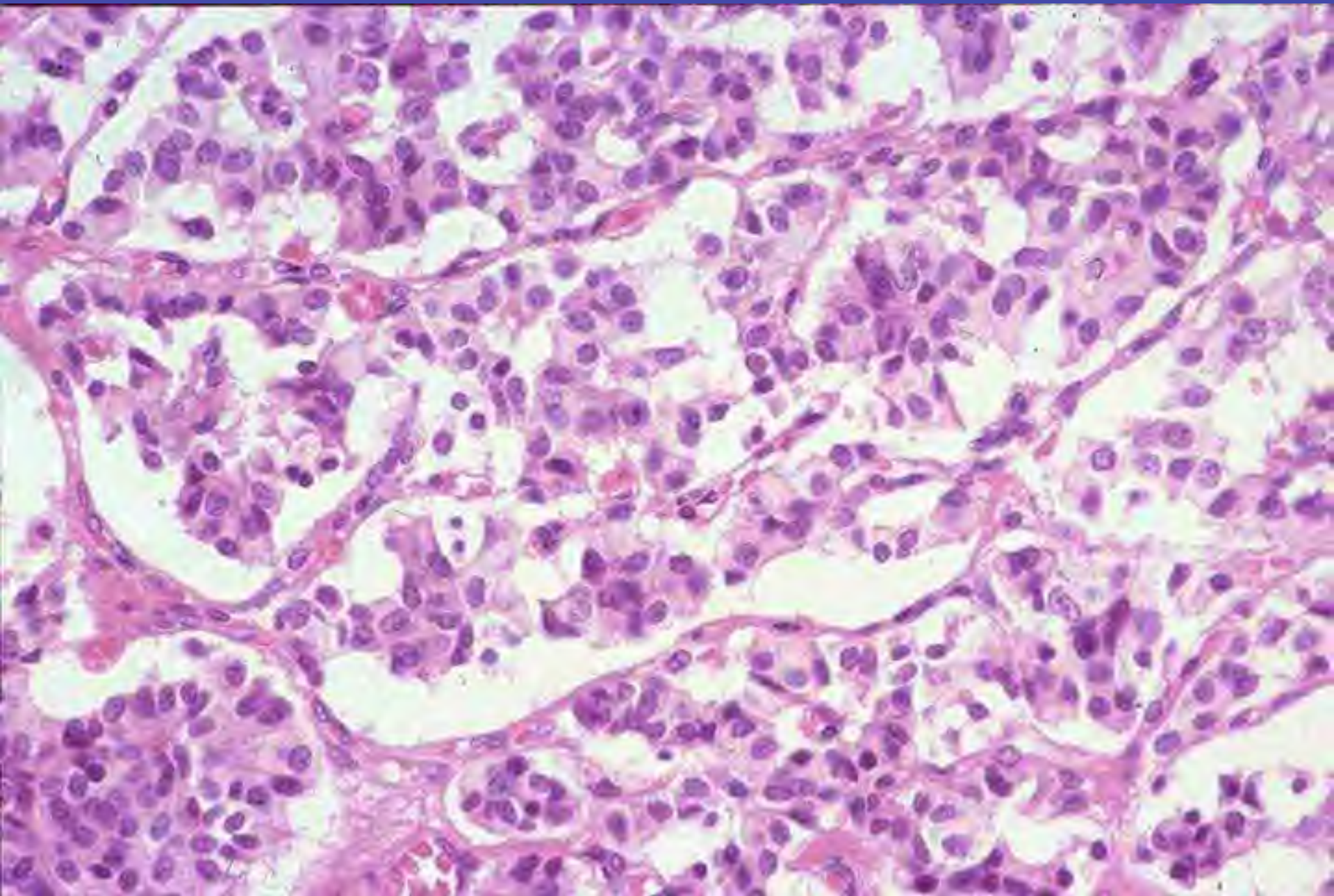
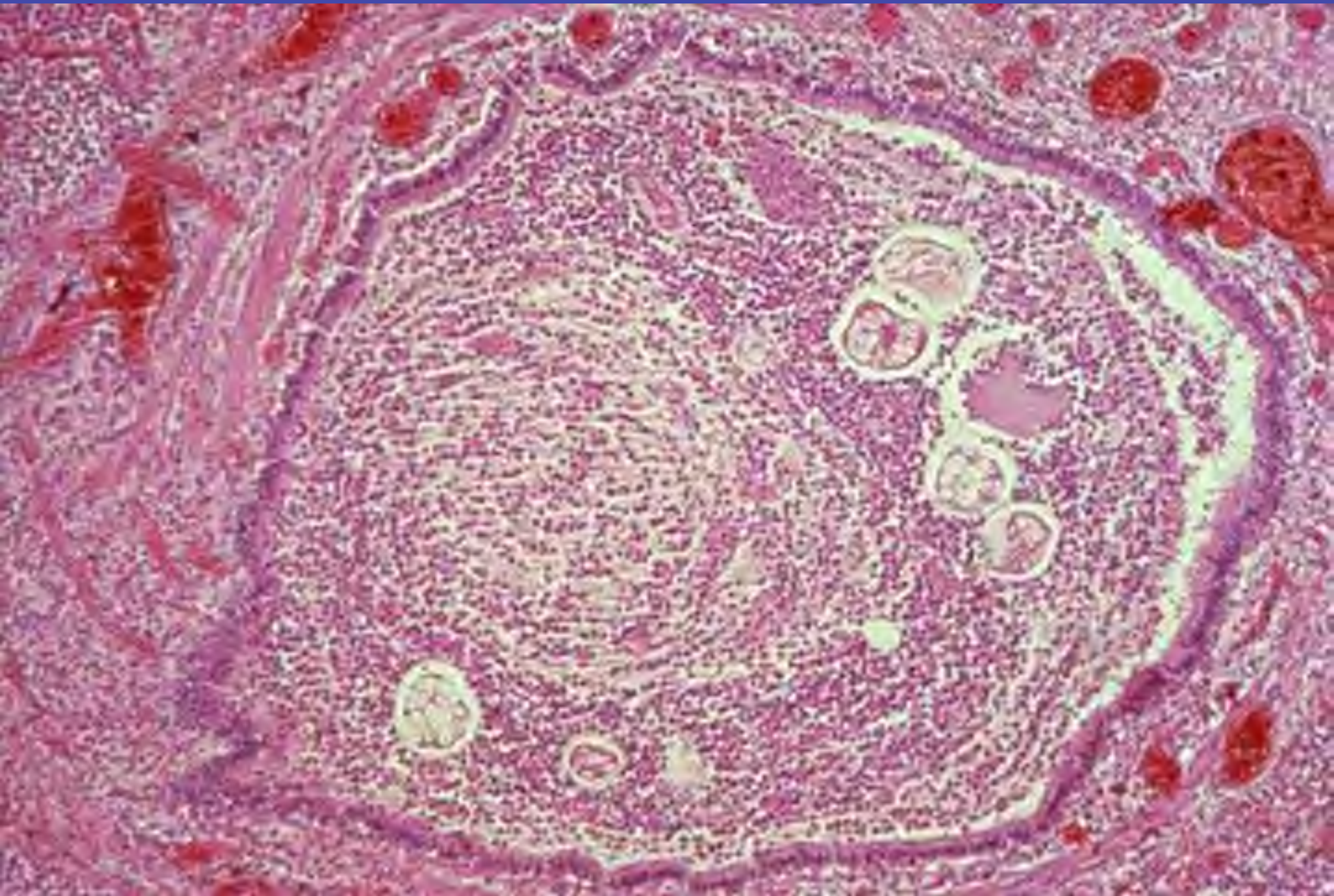
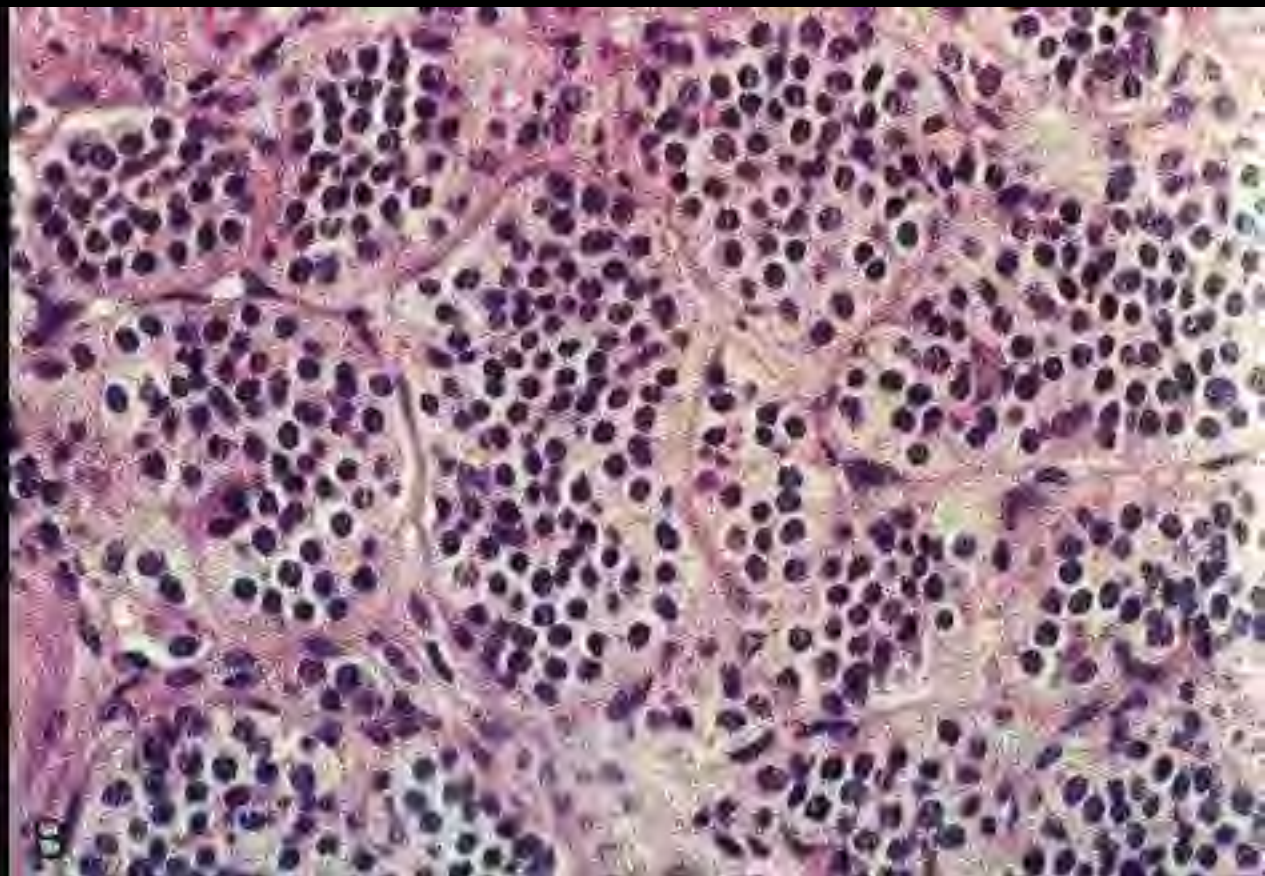
A rectangular box with a light beige background and a thin black border. Inside the box, the text "Image of Olympic rings removed" is centered.

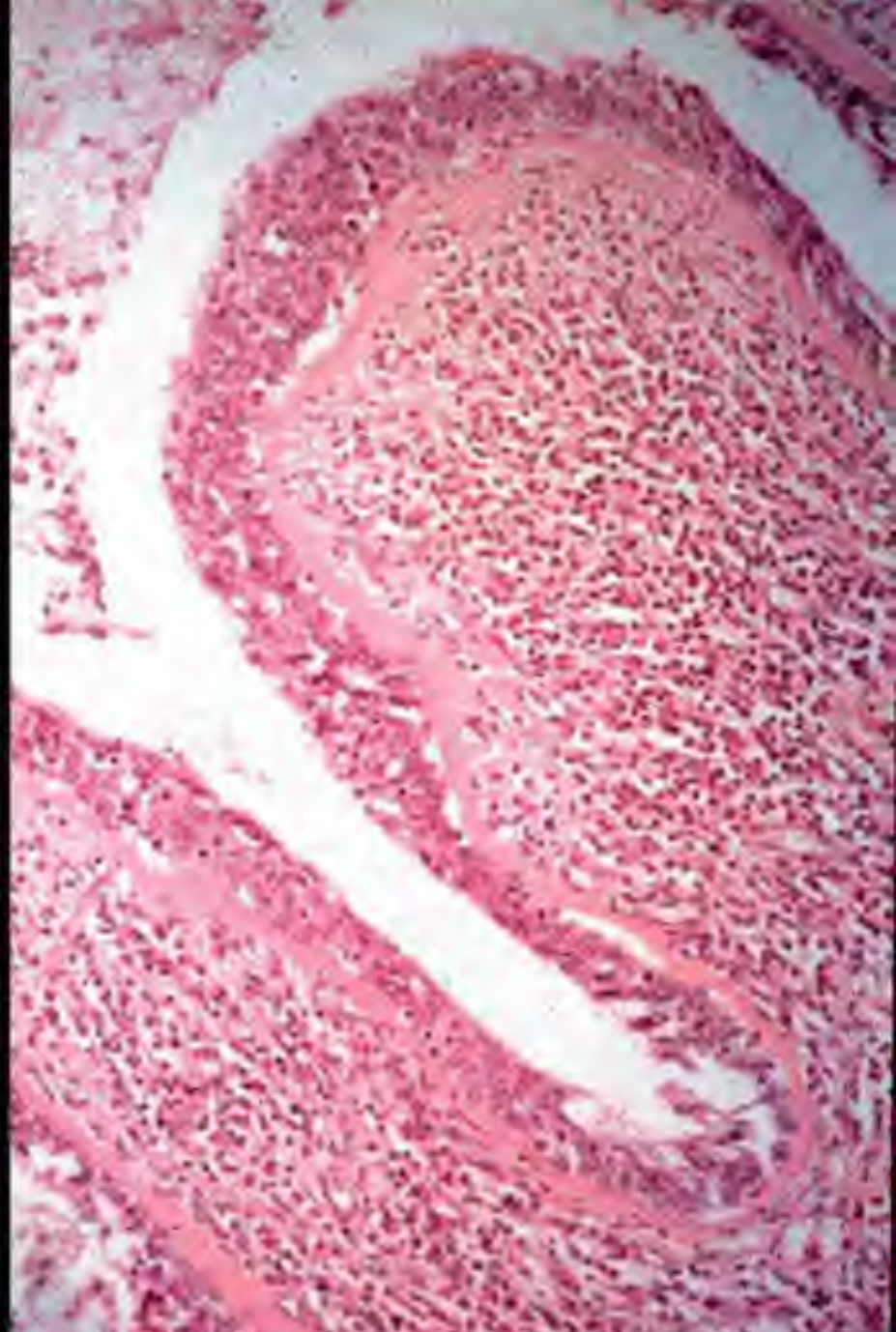
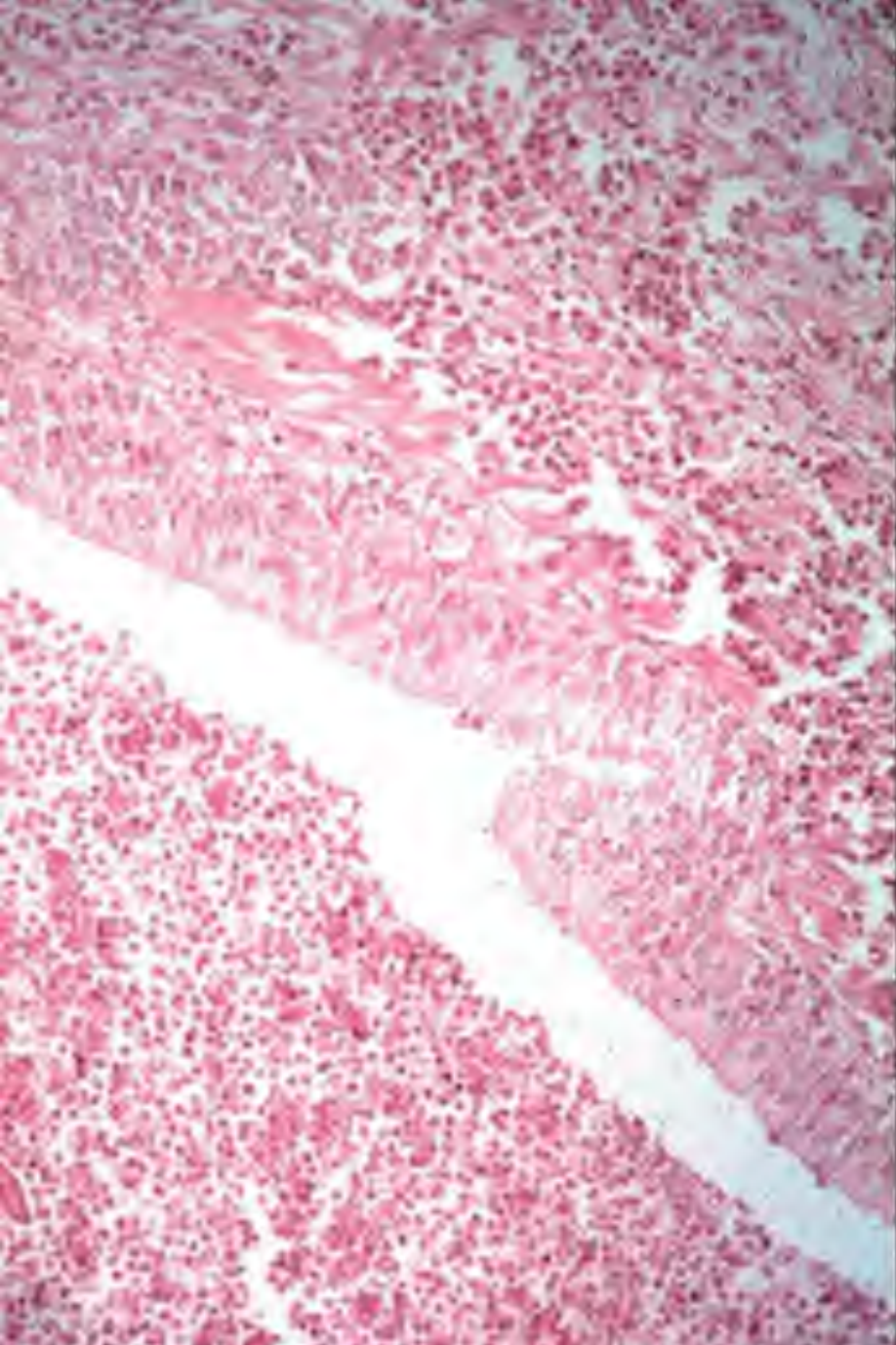
Image of Olympic
rings removed

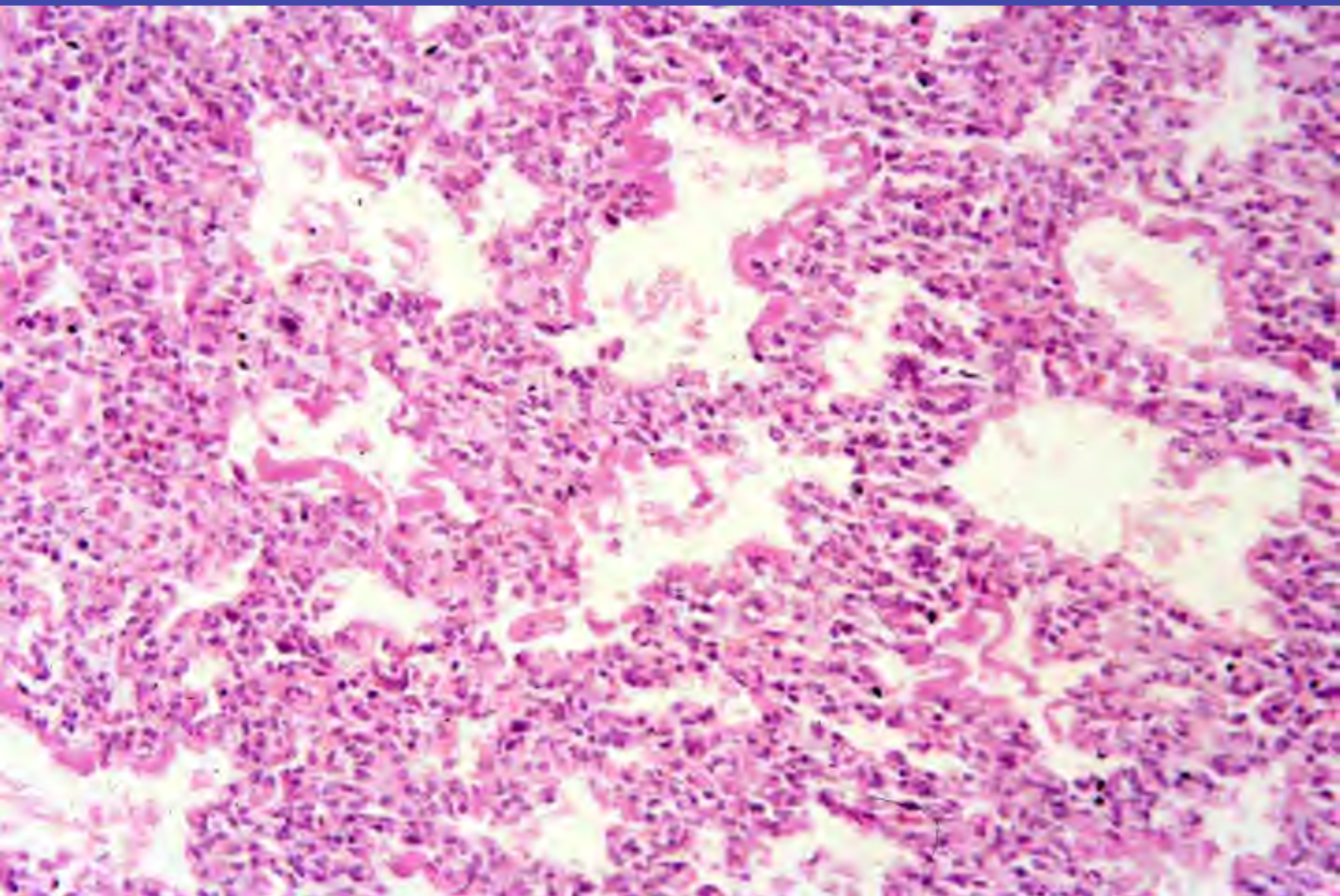
Following slides are intended for review

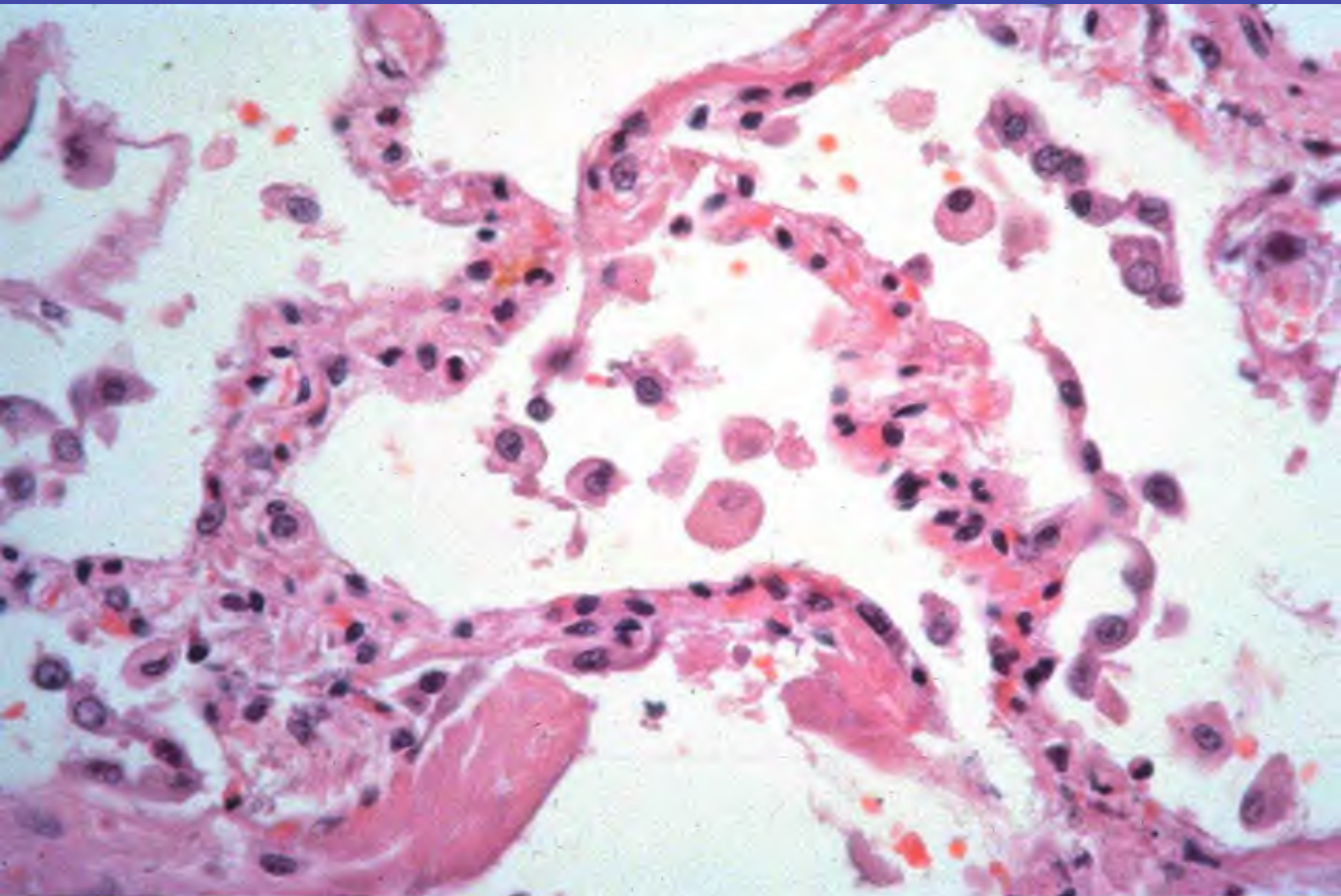


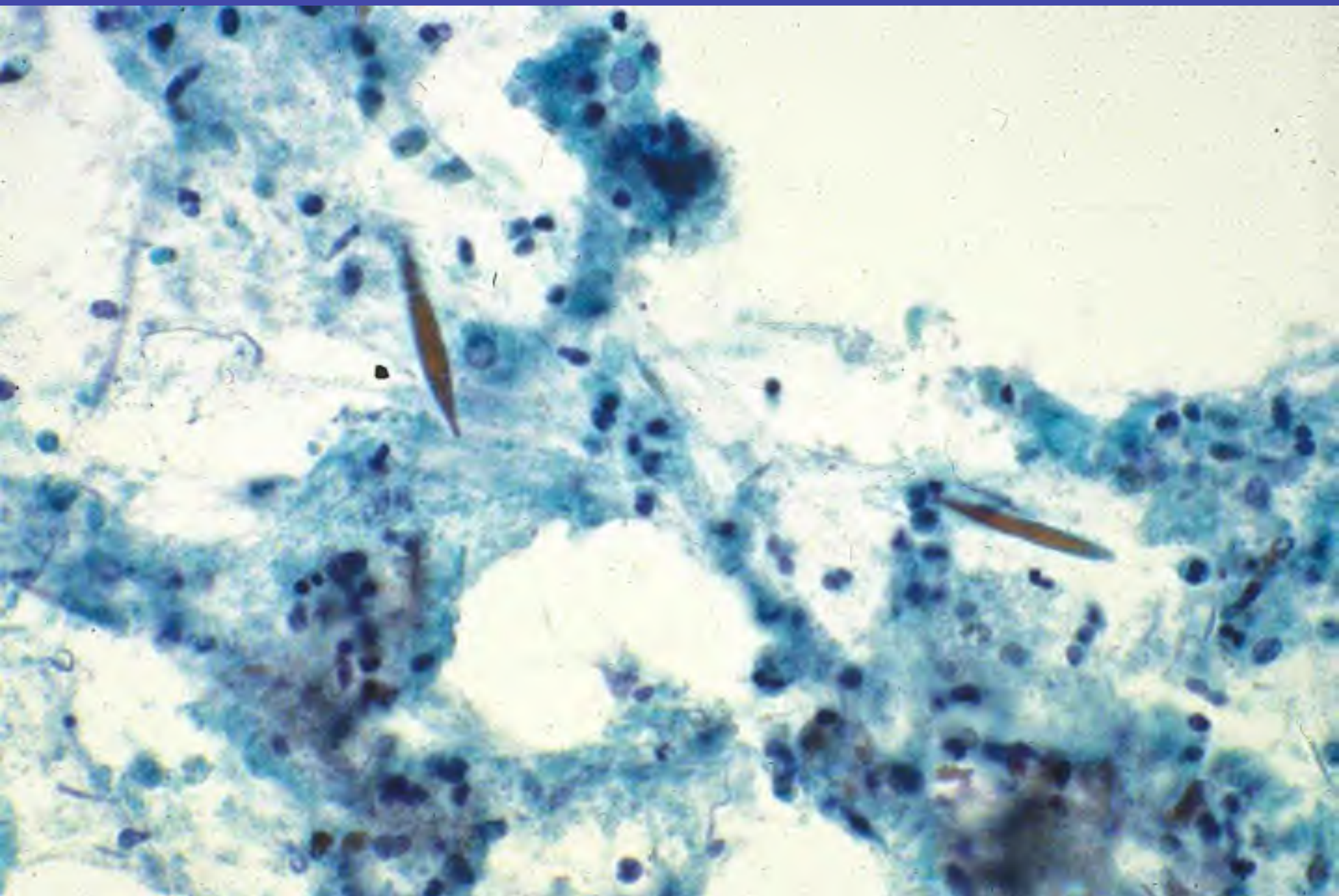


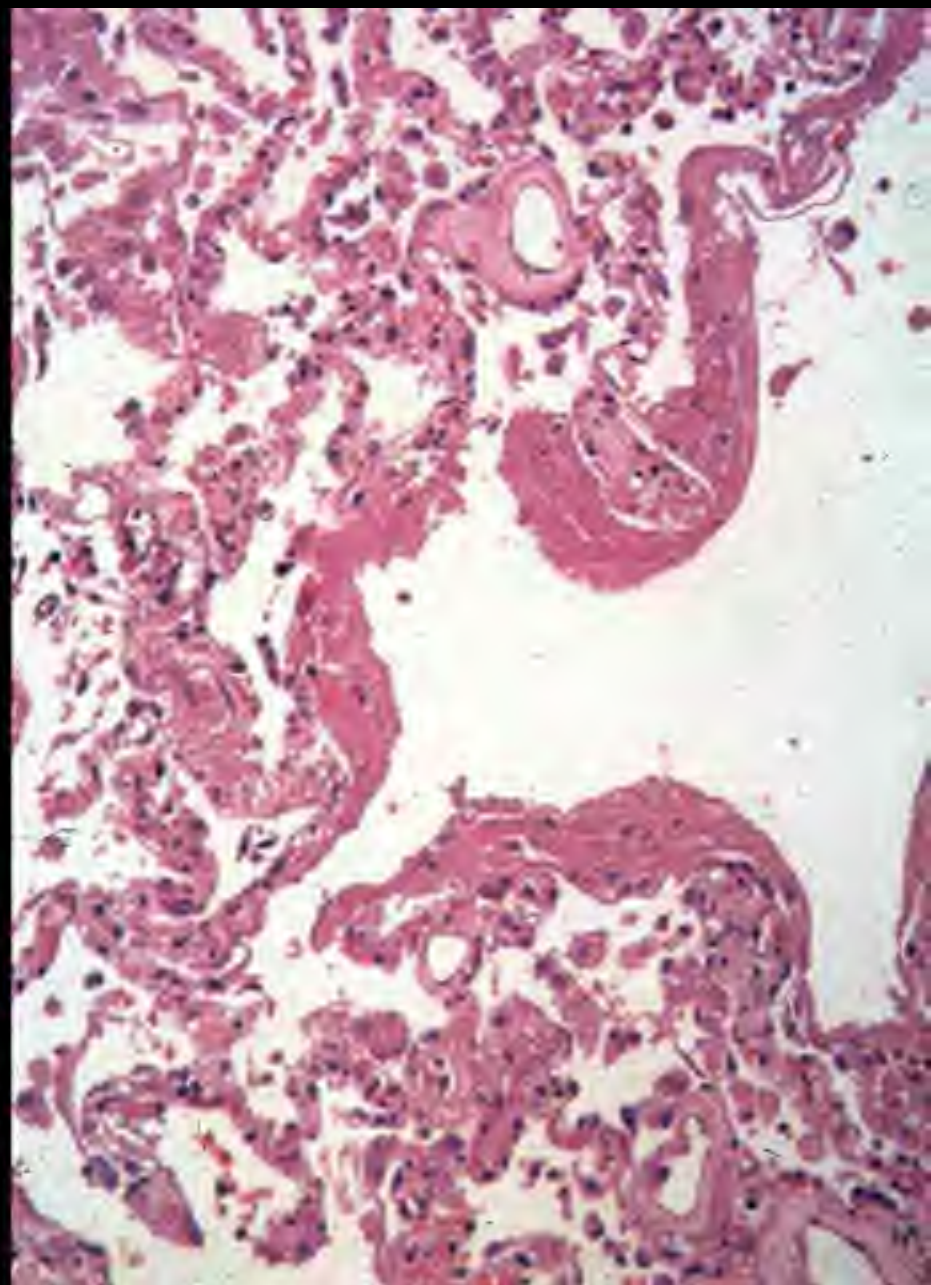
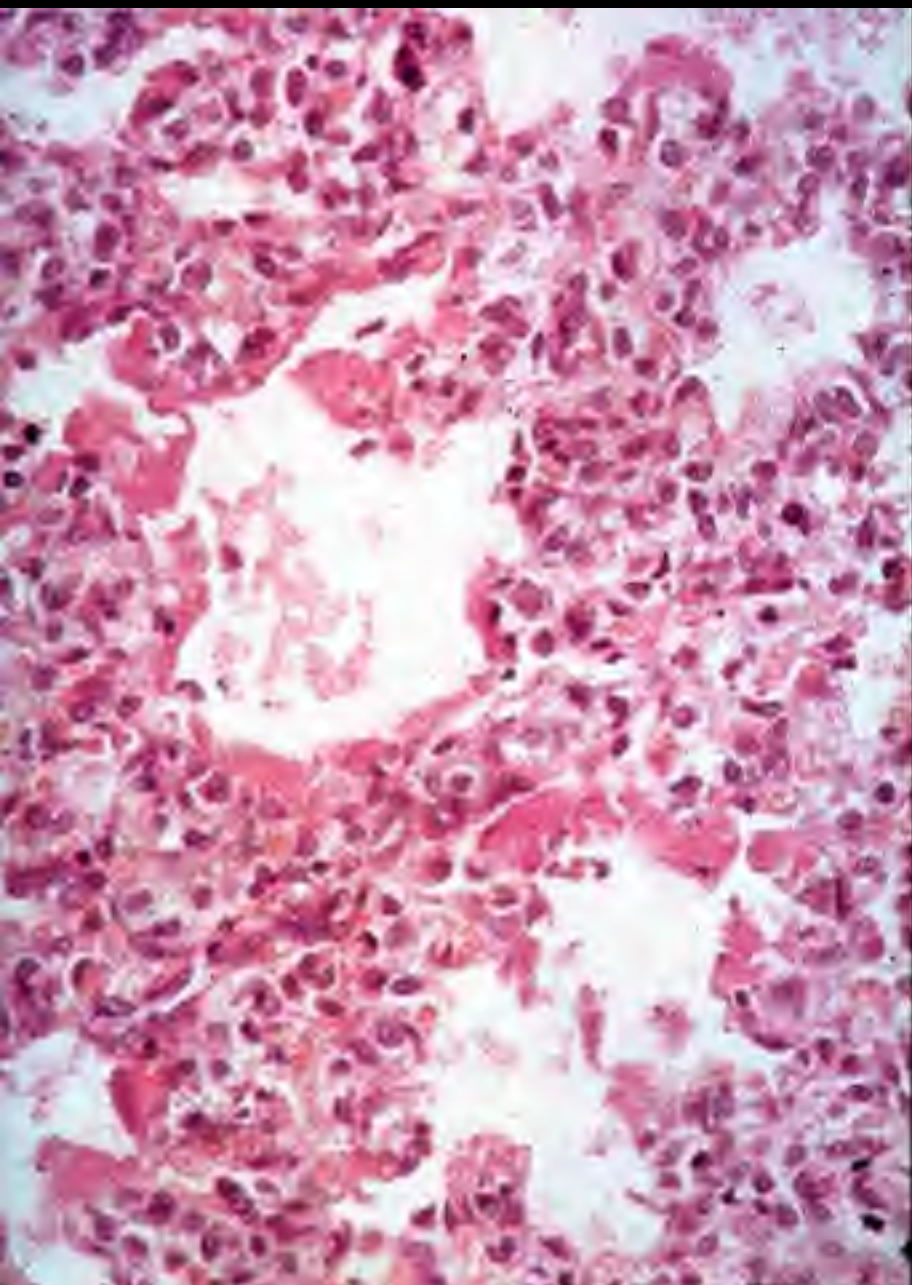


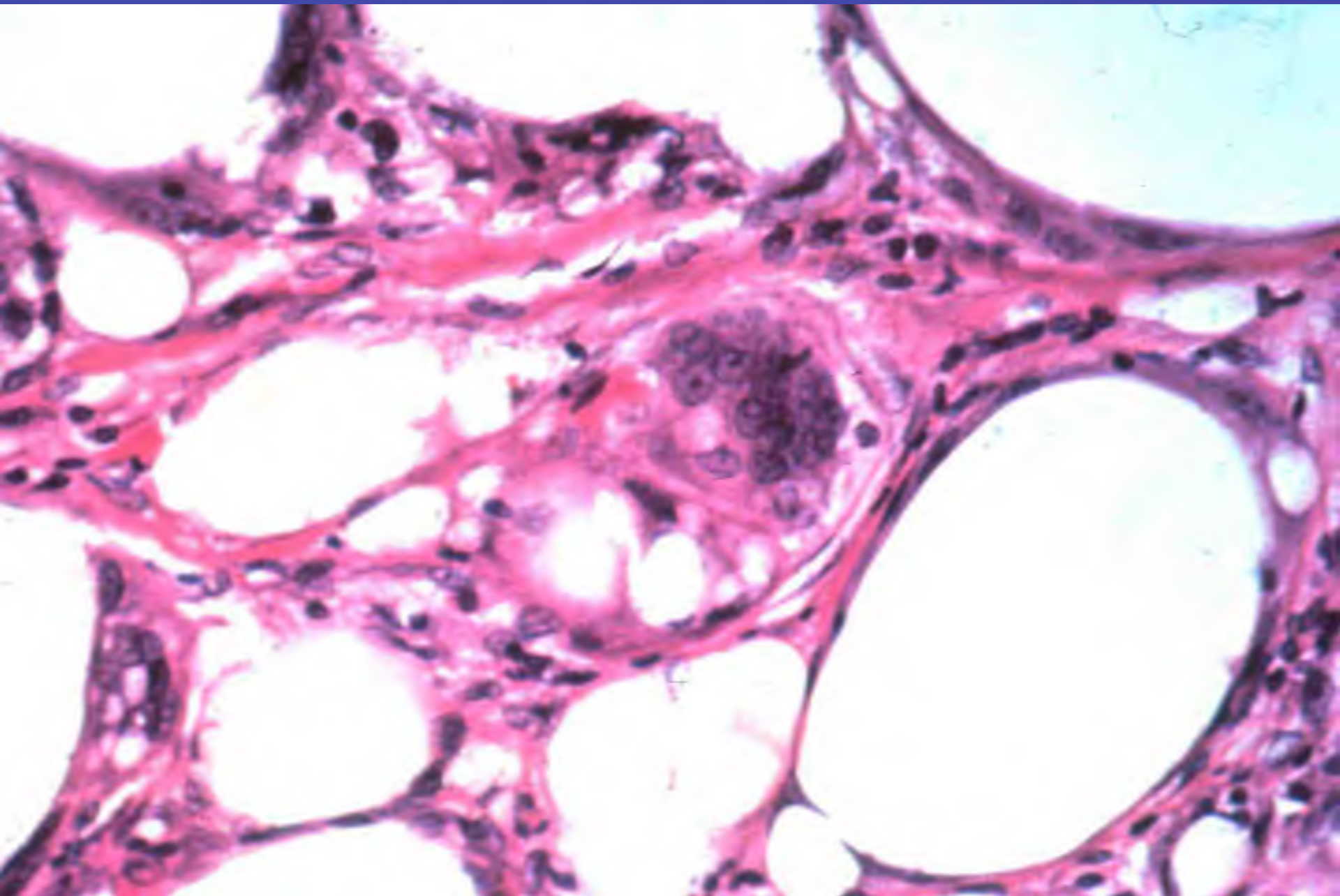


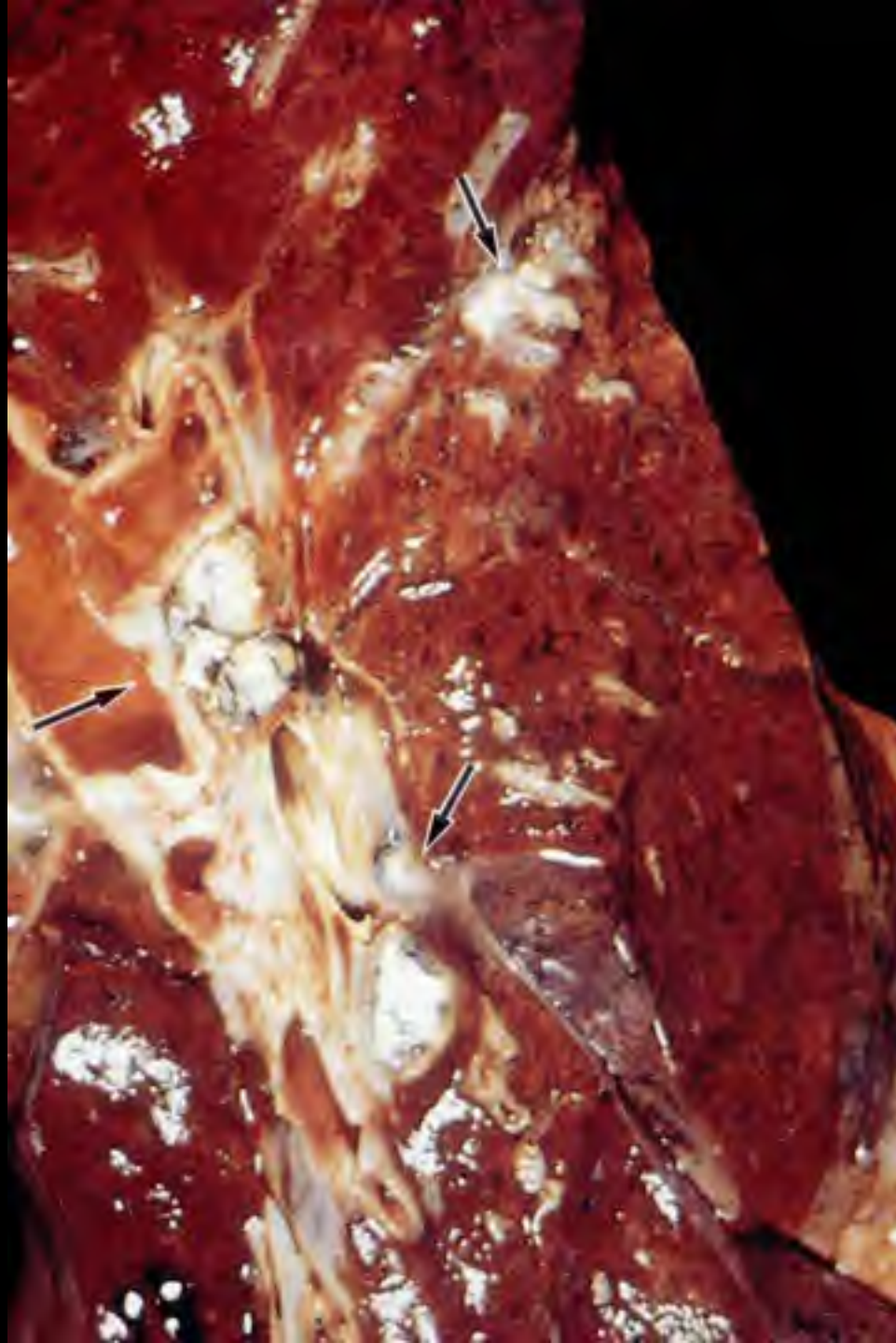


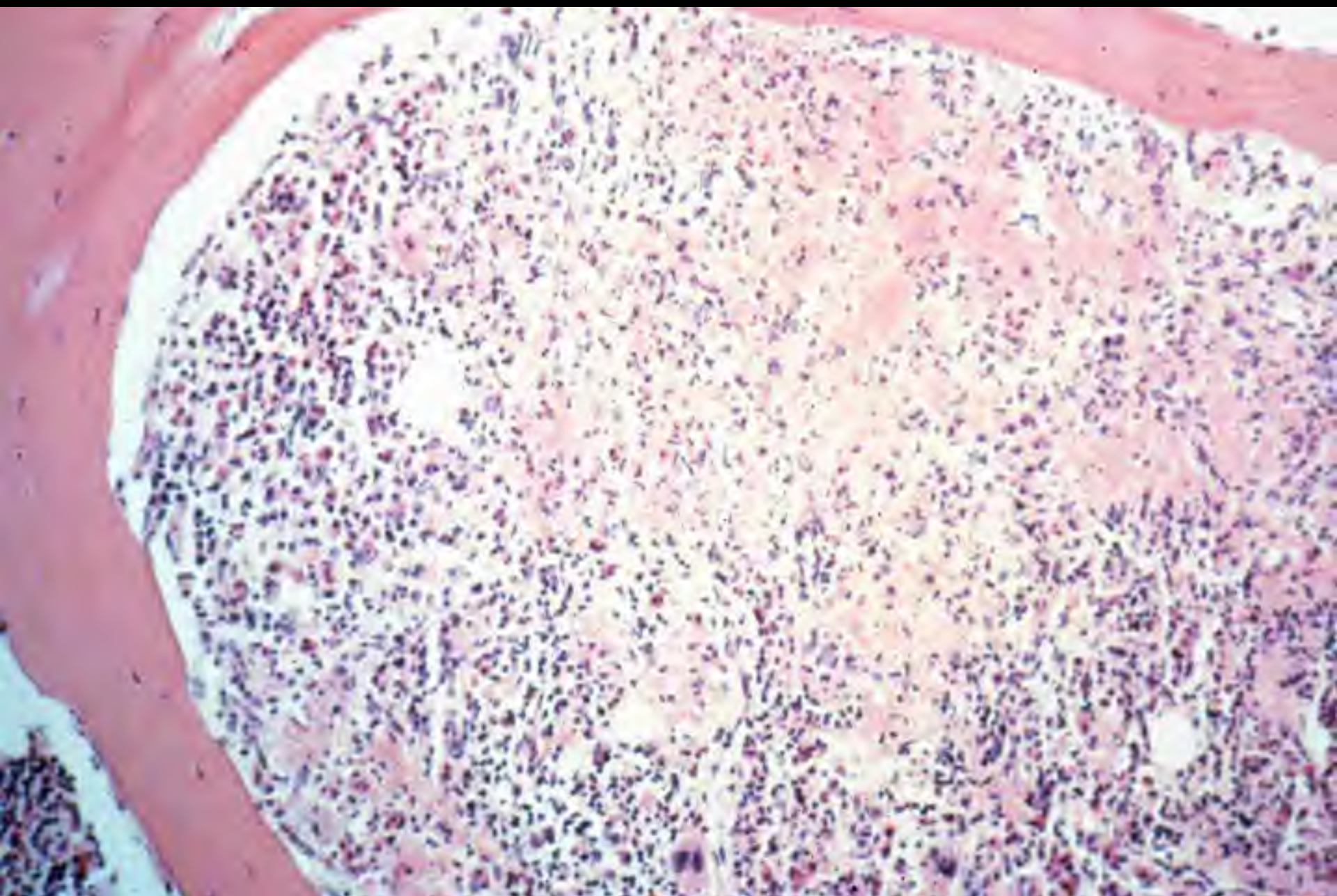


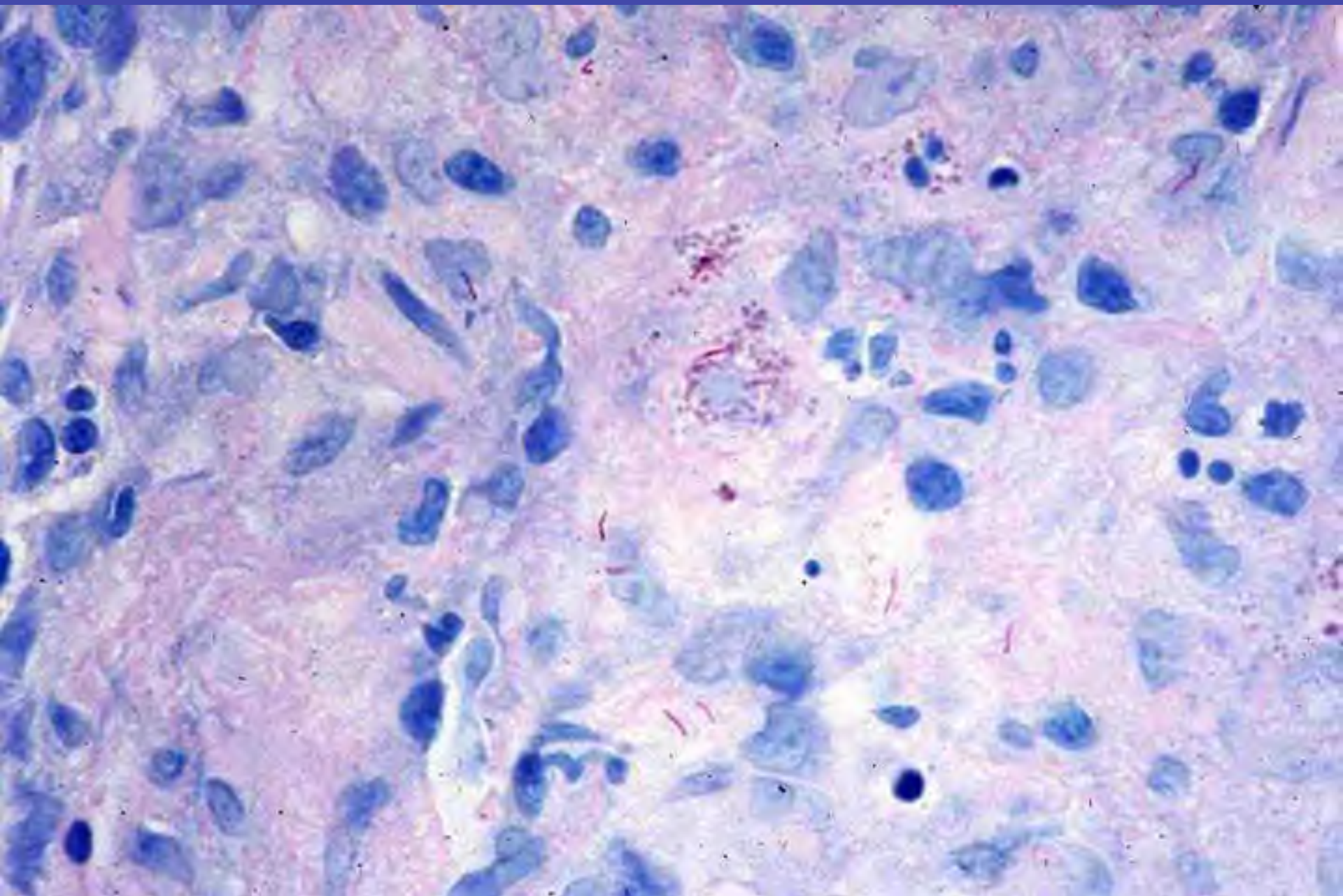


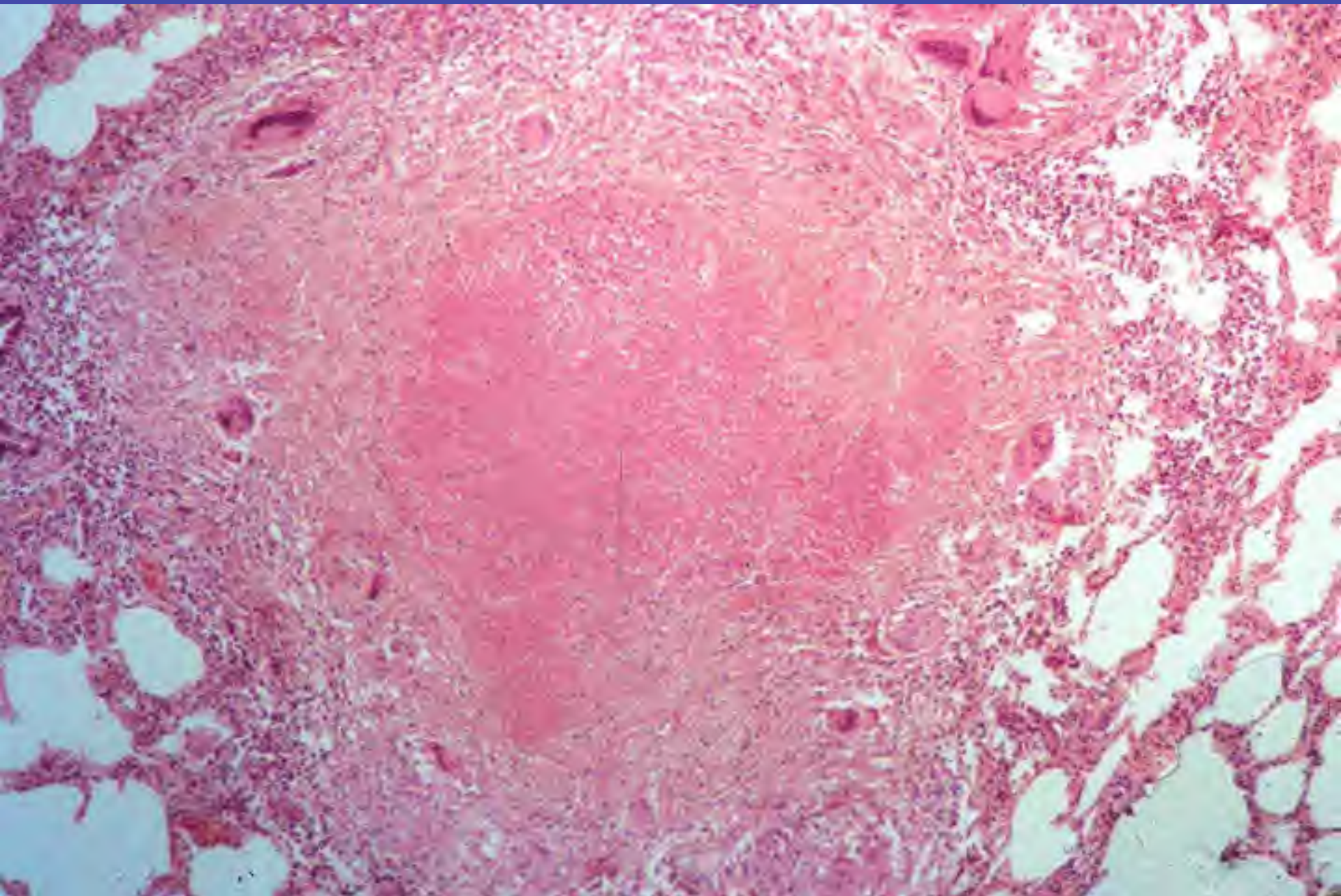


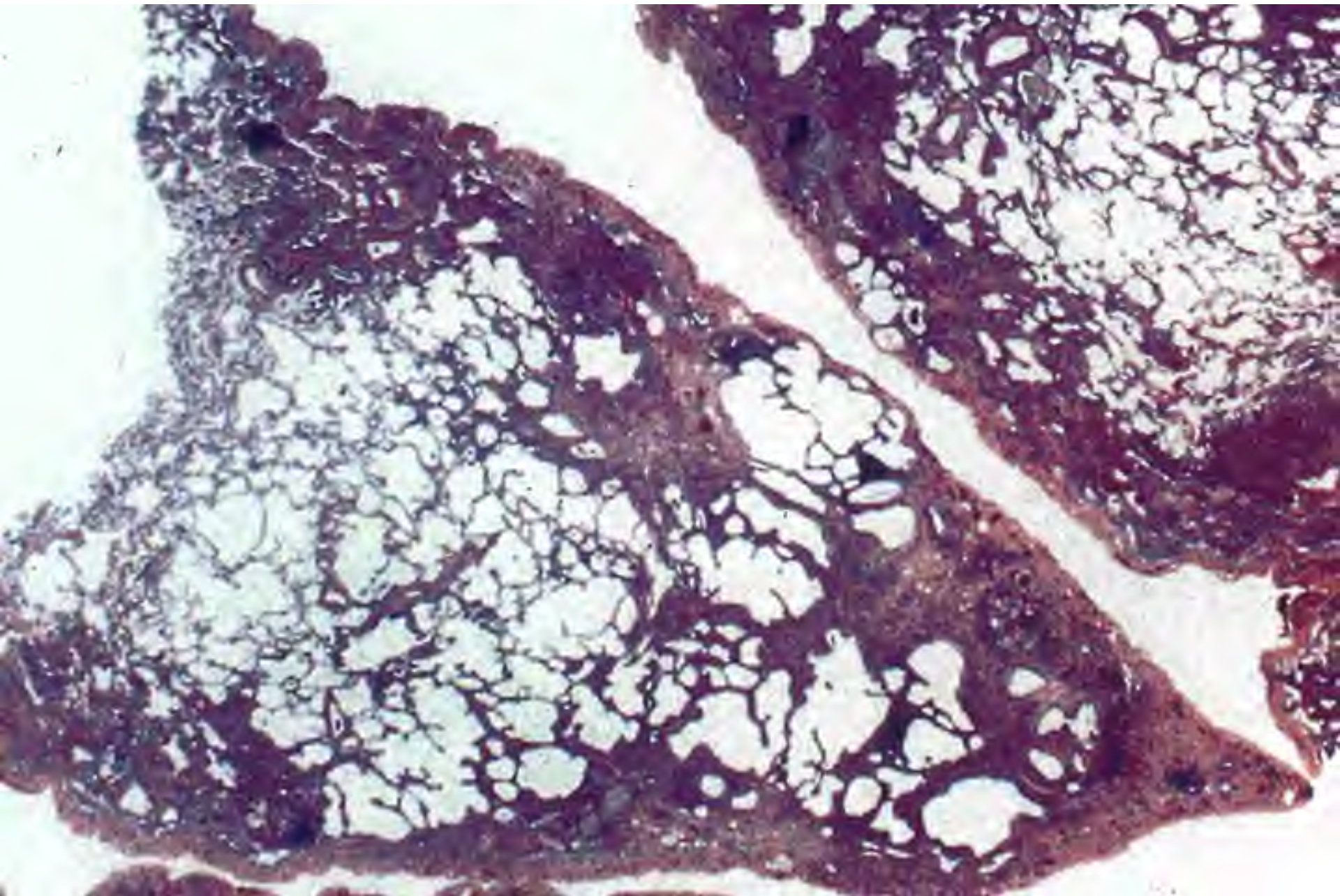


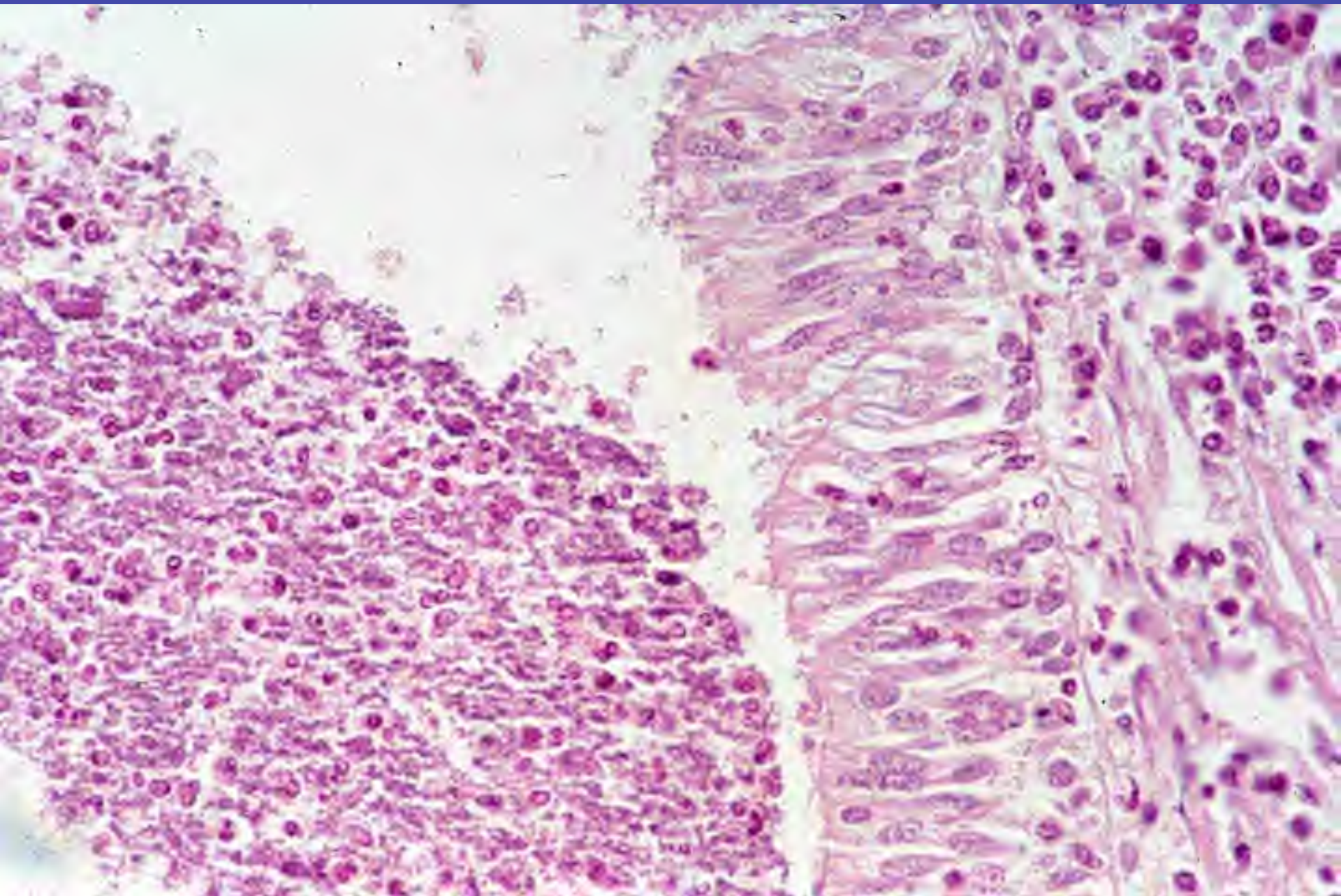


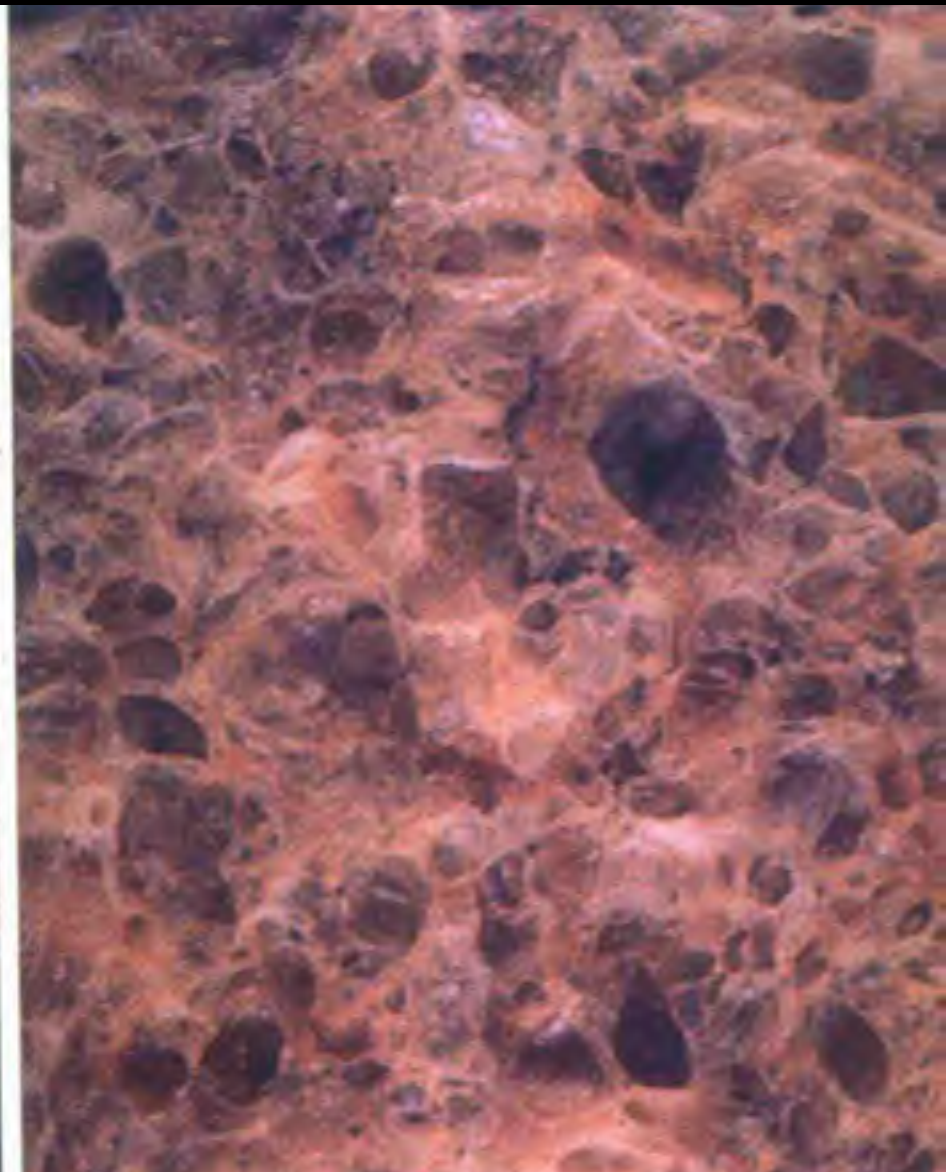
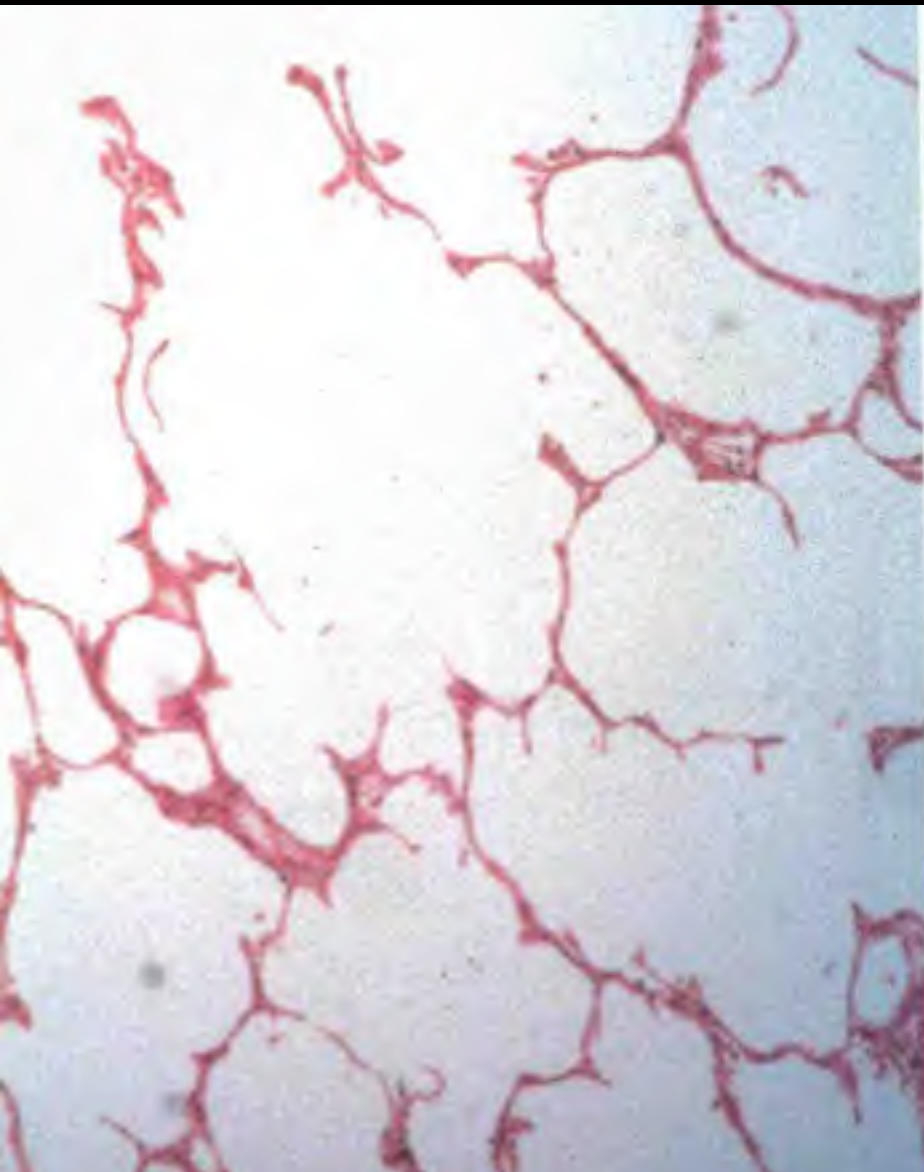


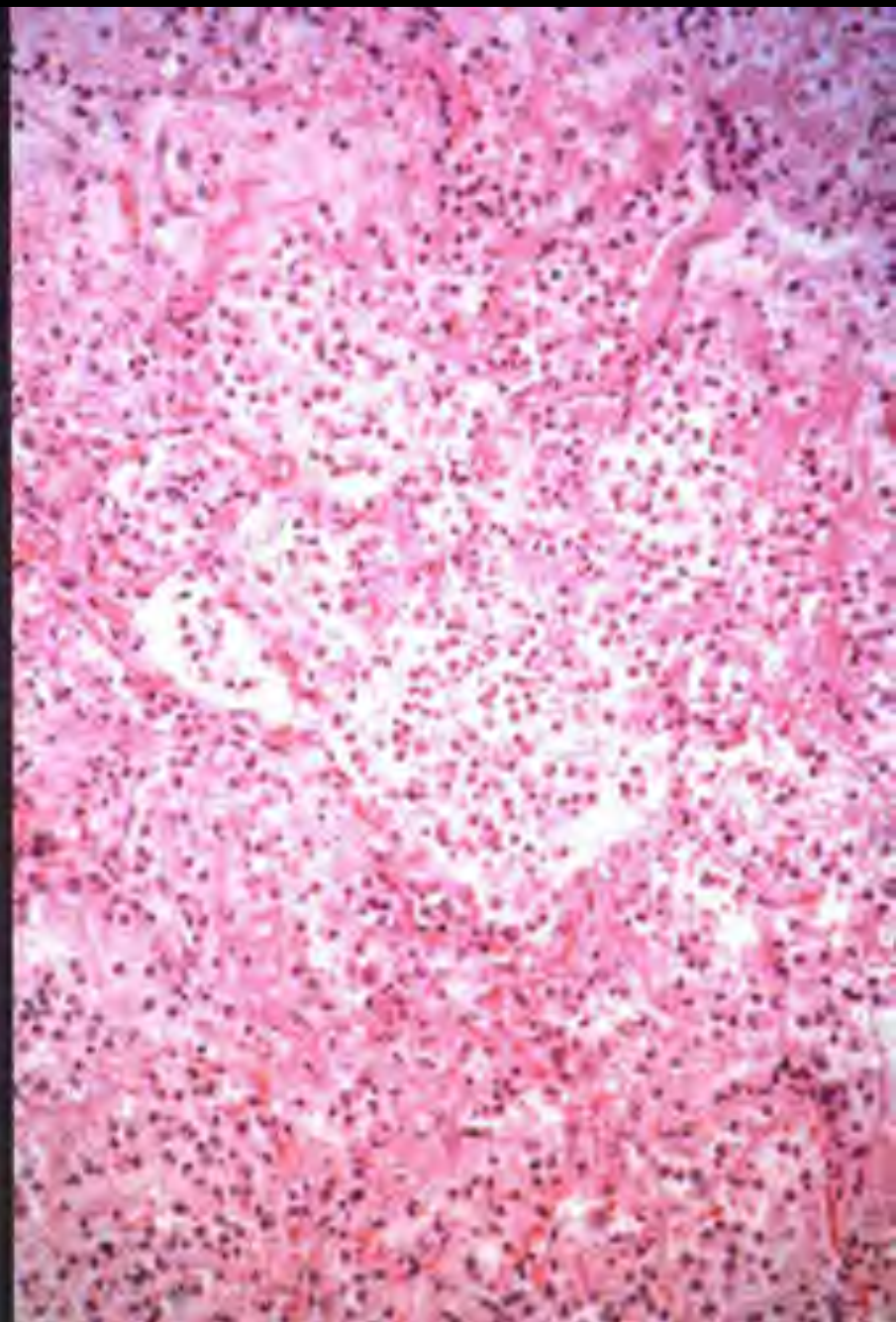
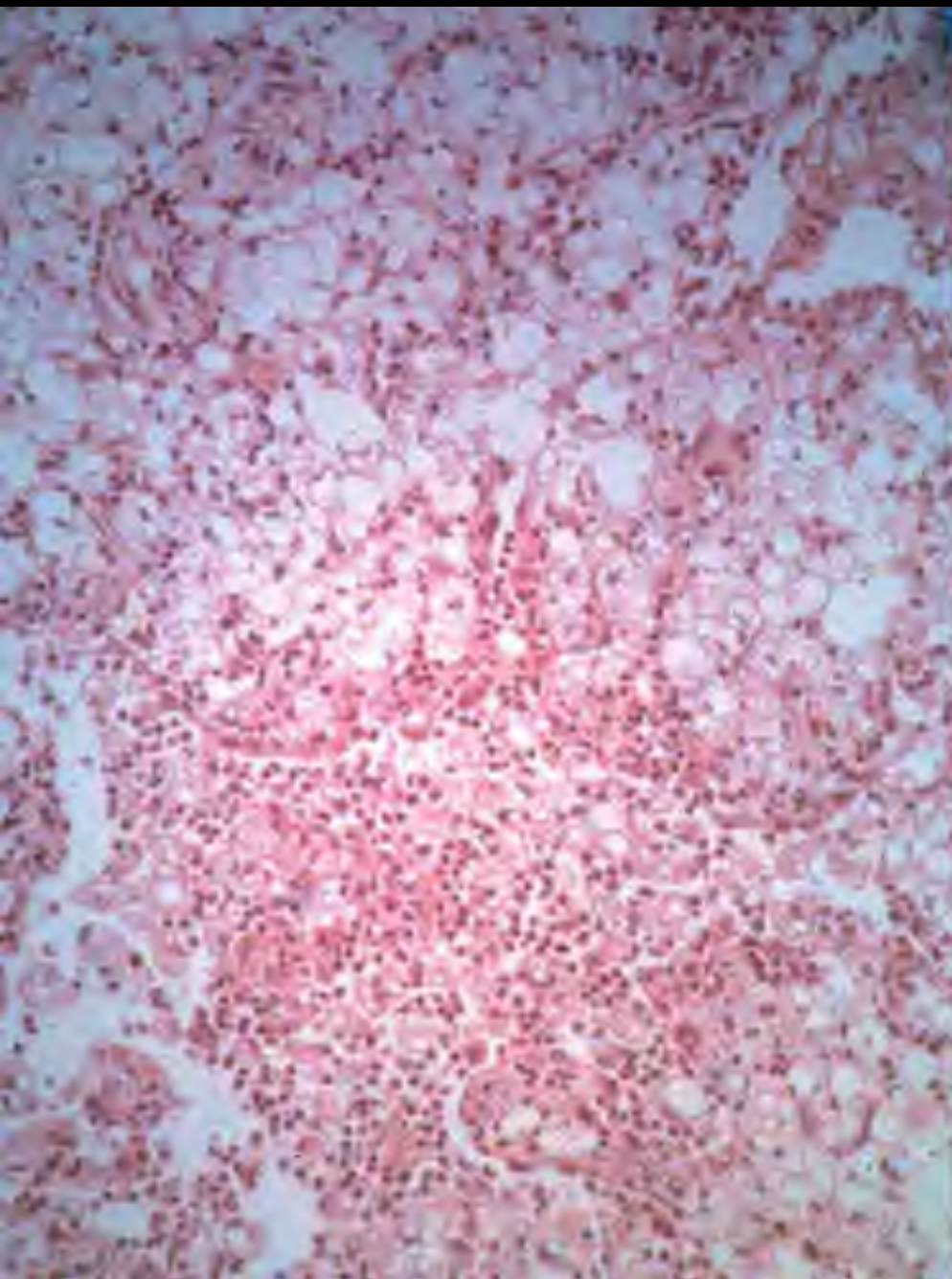


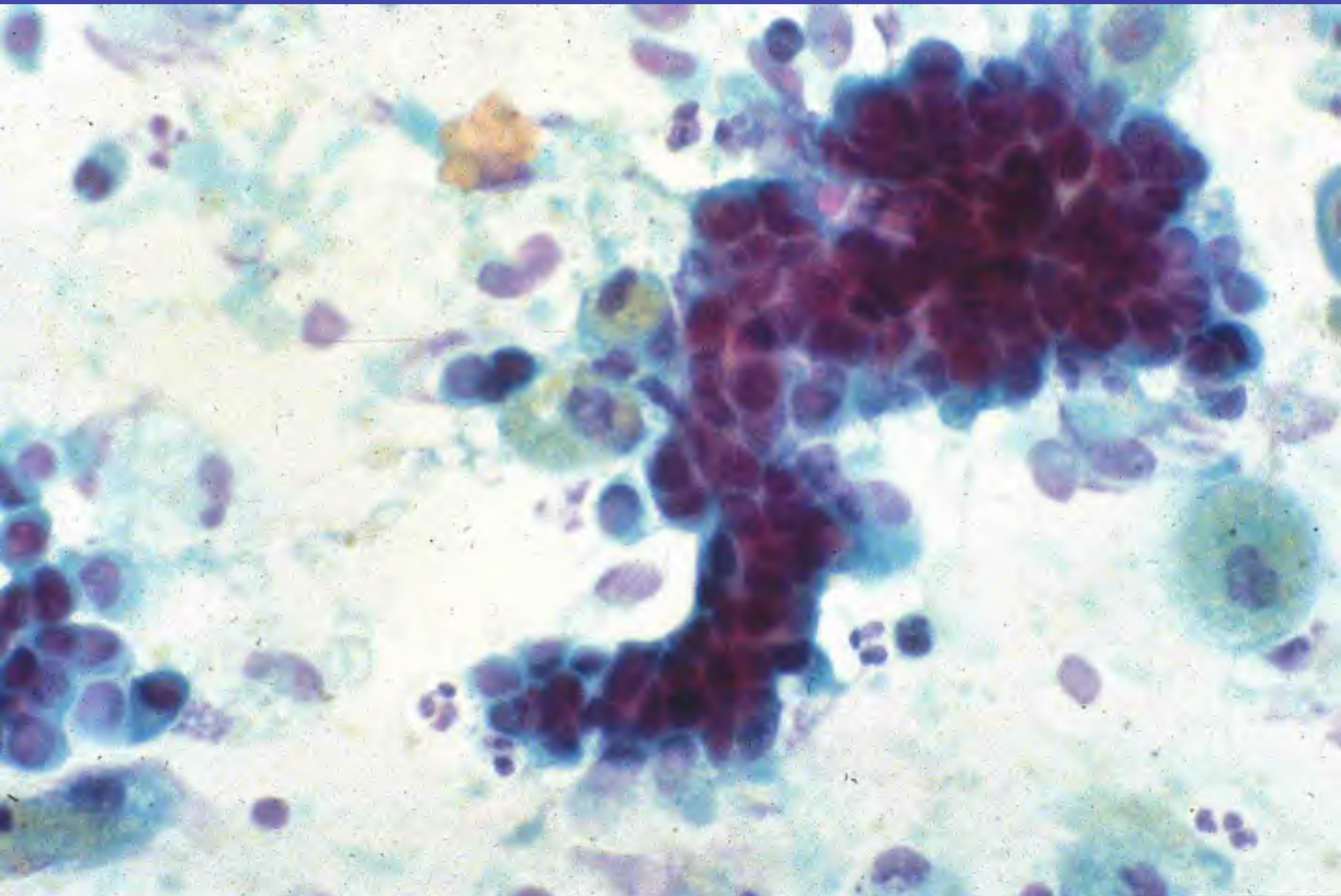


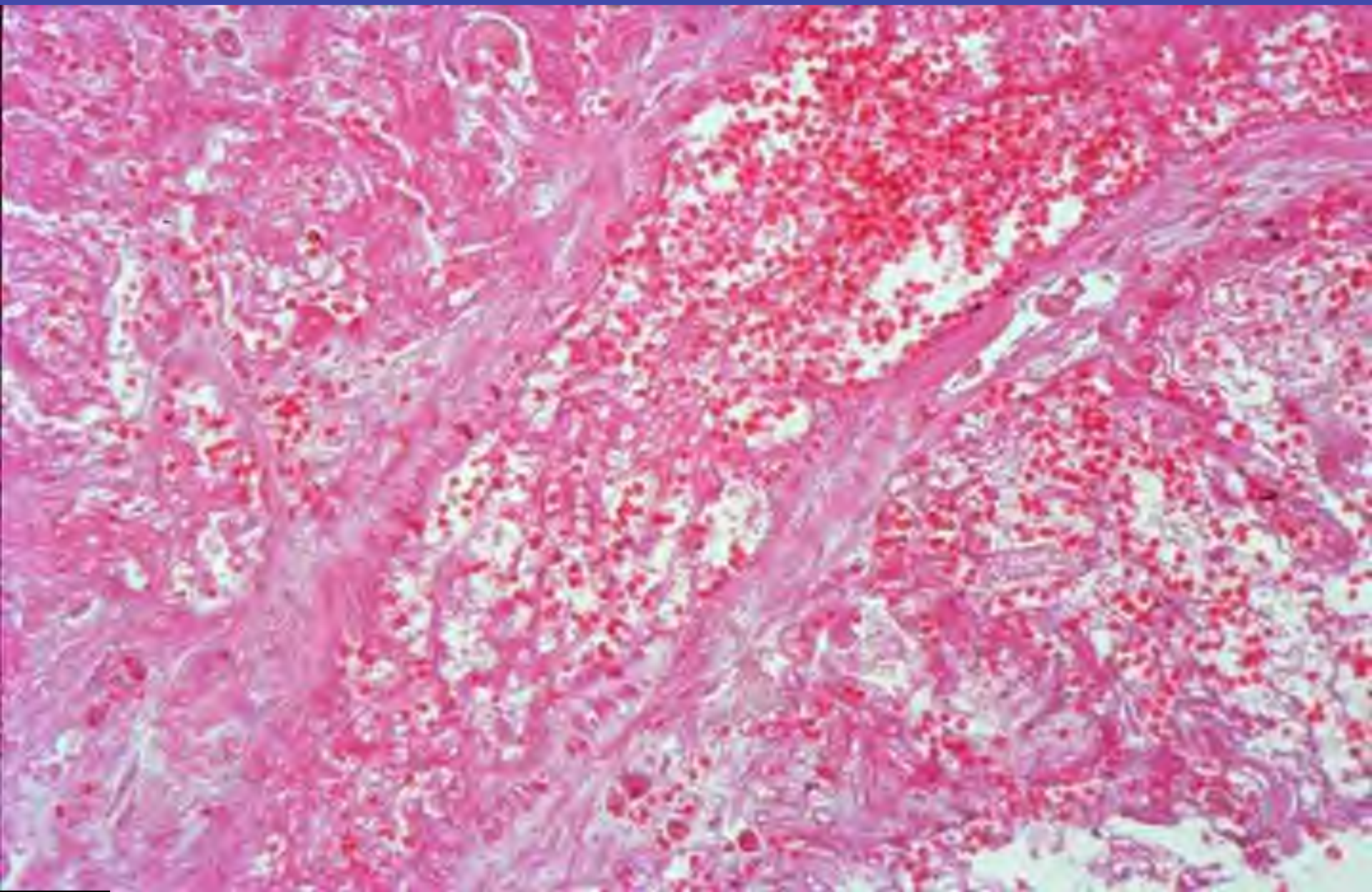


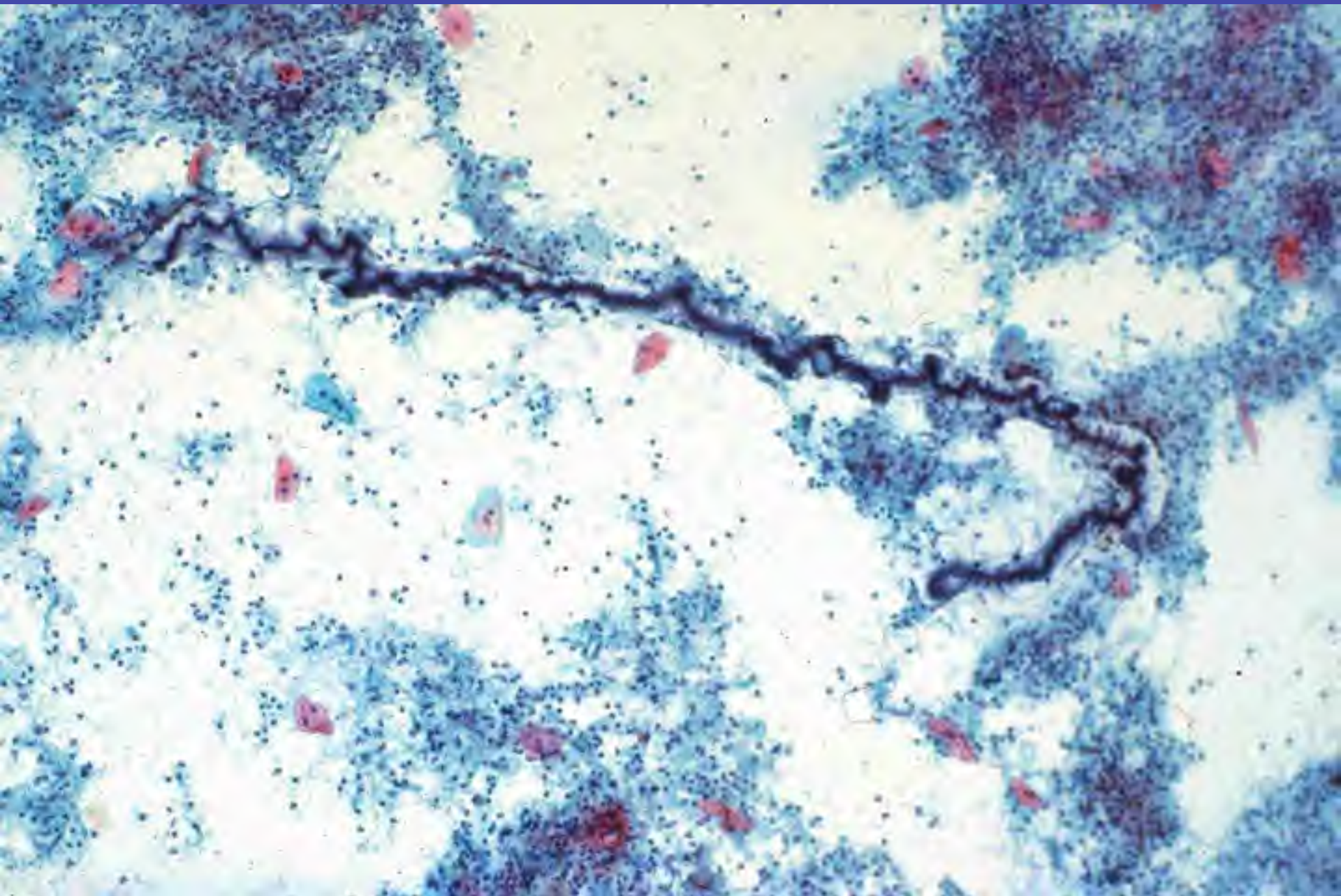


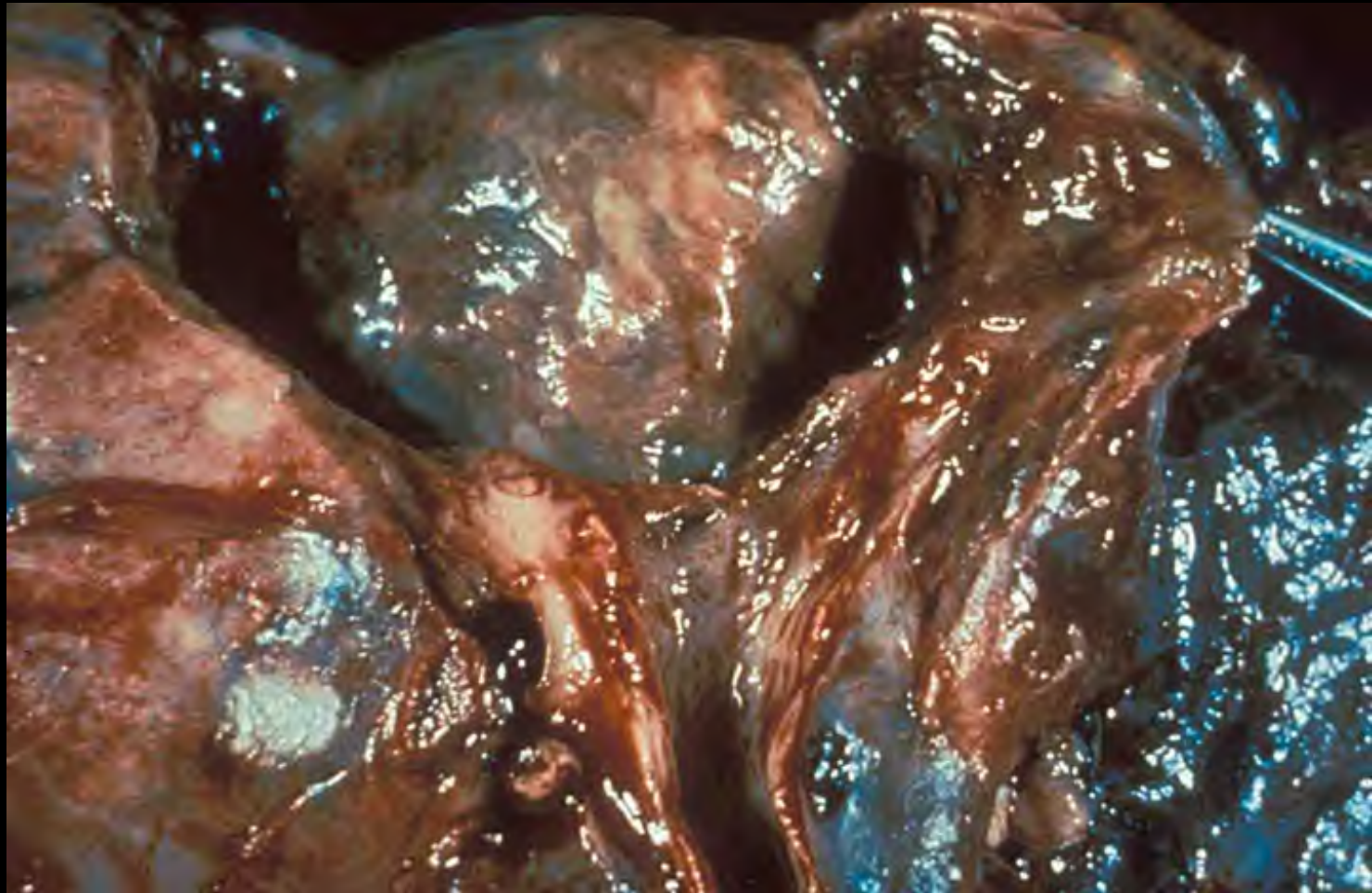




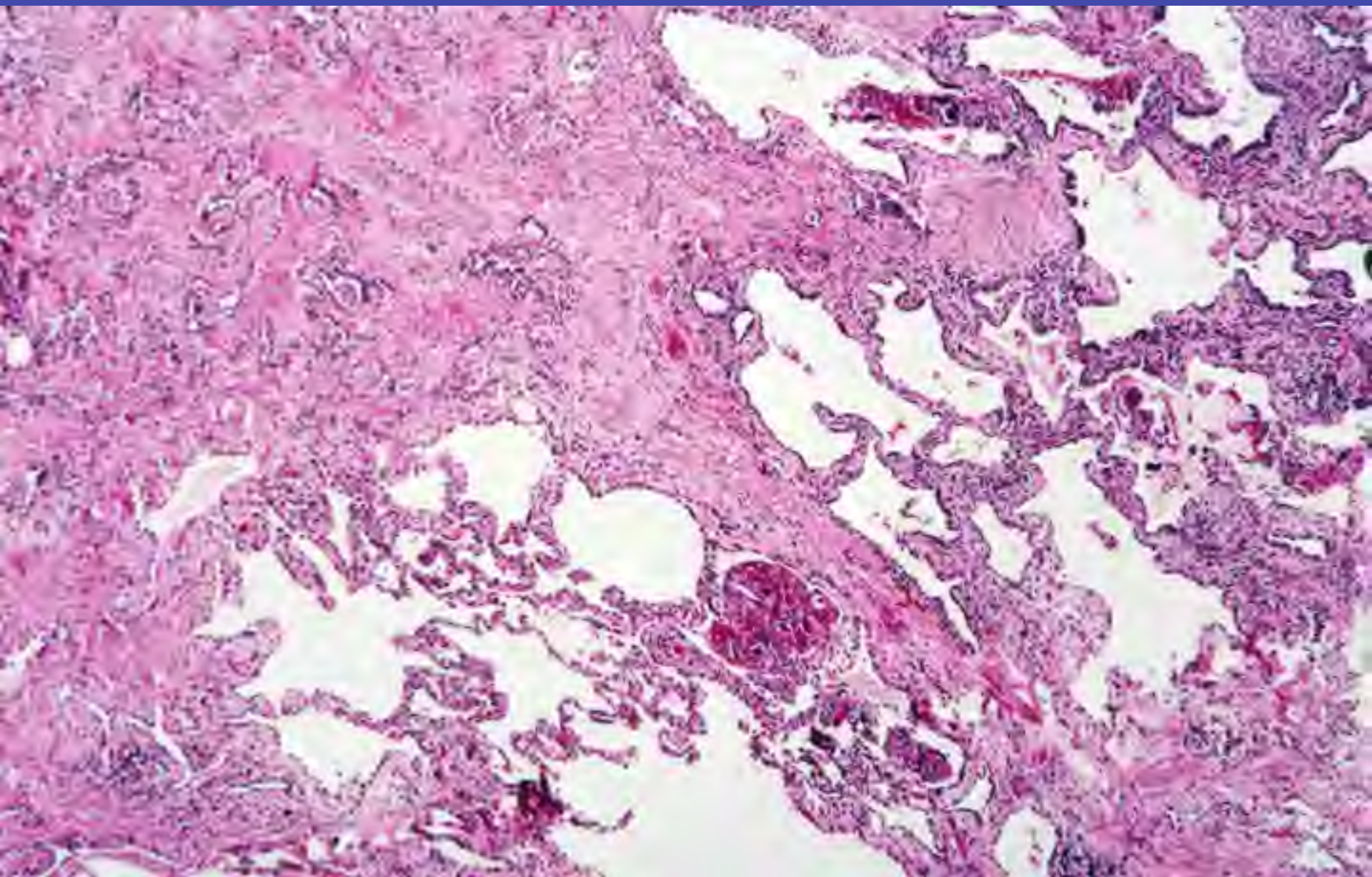












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