

July 31, 2009

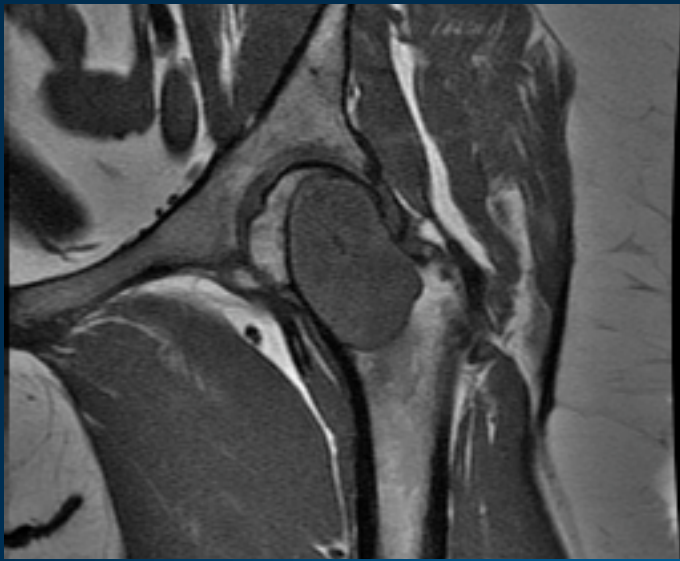
# Radiology-Pathology Conference

Daniel T Ginat, M.D., M.S.

**Sharlin Johnykutty, M.D.**

# Case 1: 23-year-old female who fell on her knee

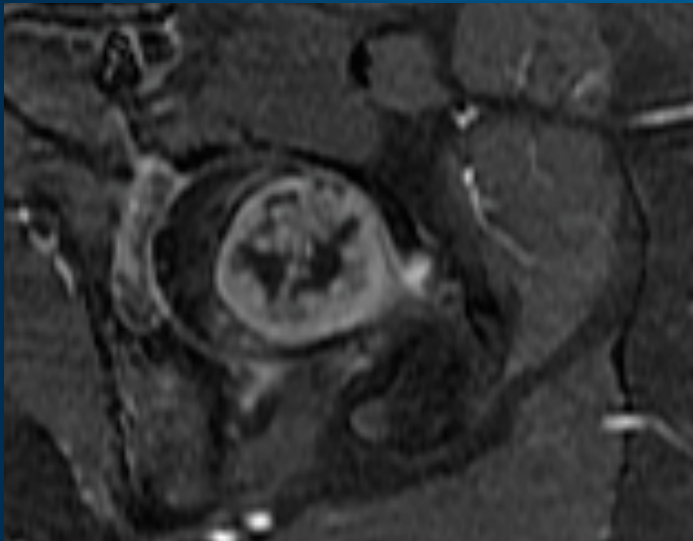




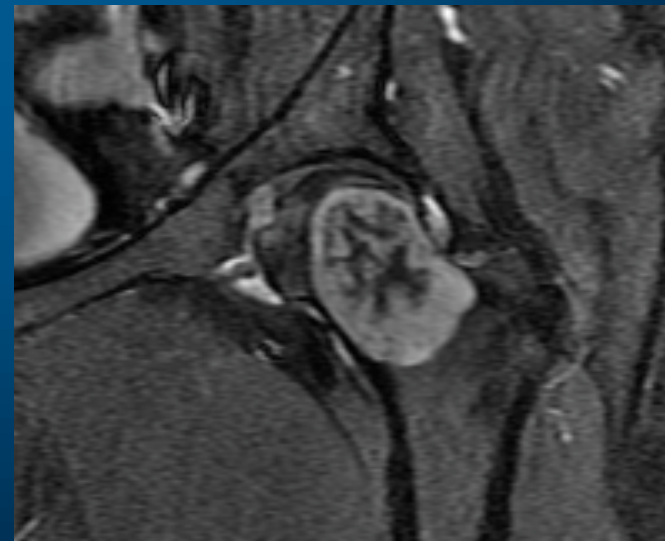
Coronal T1



Axial T1 fat saturated



Axial T2 fat saturated



Coronal T1 + Contrast

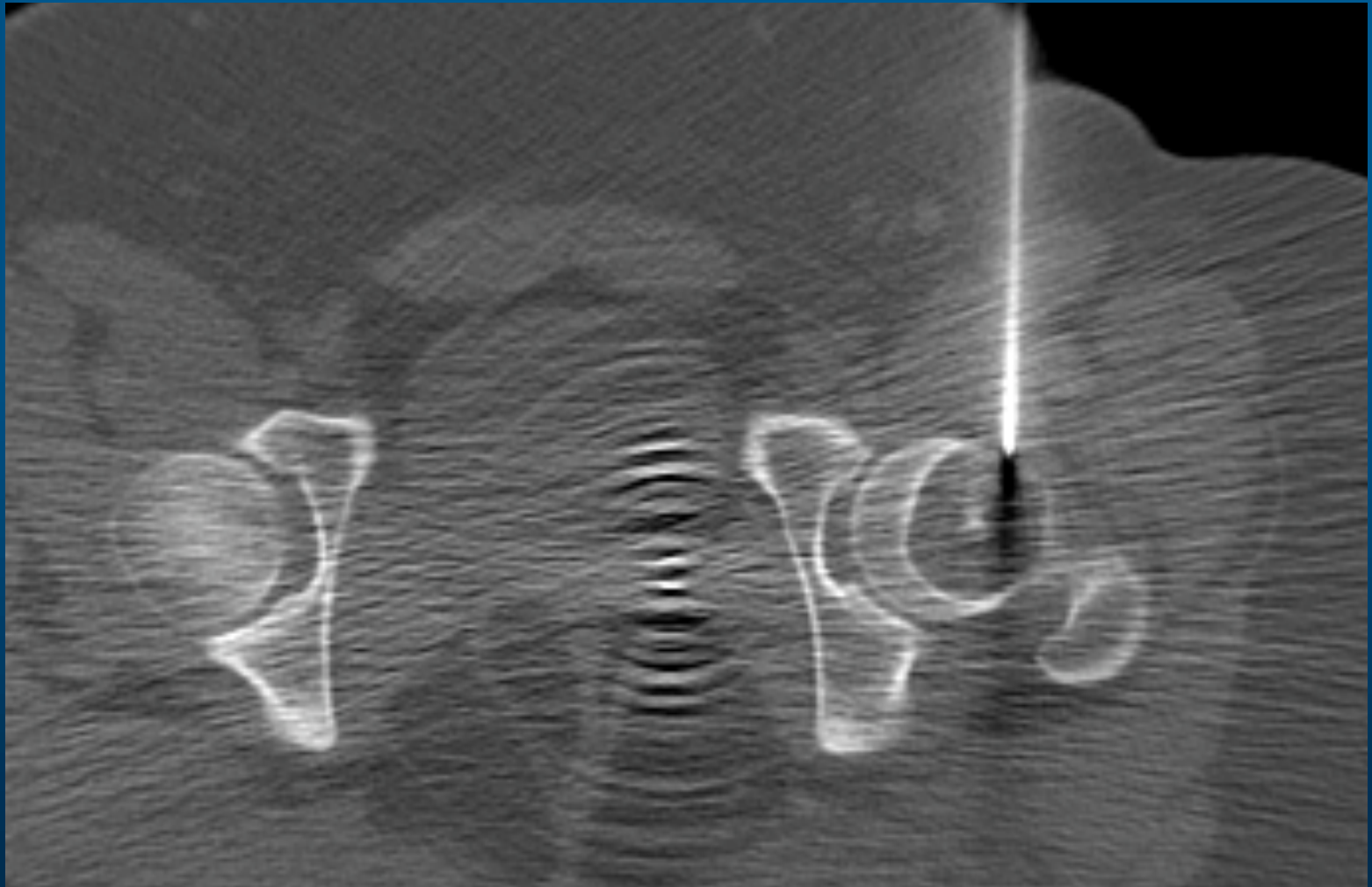
## Findings:

- X-ray: Left hip demonstrate expansile lucent lesion of the femur head and neck with partially circumscribed margins
- MRI: Expansile intramedullary lesion within the femoral head and neck which demonstrates low T1 signal, heterogeneous T2 signal, and heterogeneous enhancement on the postcontrast images. Mild cortical thinning along the medial anterior aspect of the femoral neck.

## Differential Diagnosis:

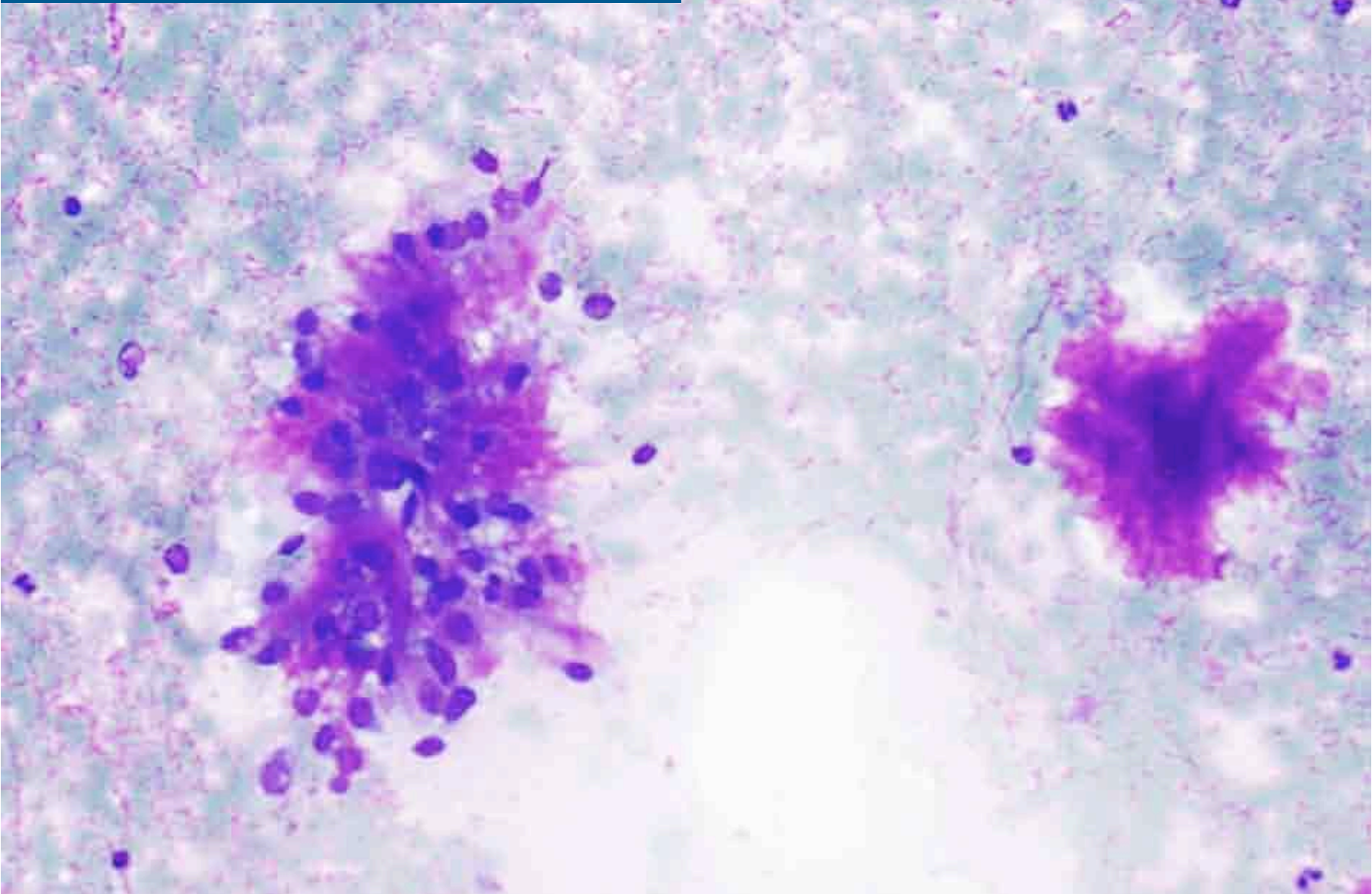
- Fibrous dysplasia
- Chondroid Matrix Lesions (enchondroma, chondrosarcoma, chondromyxofibroma)

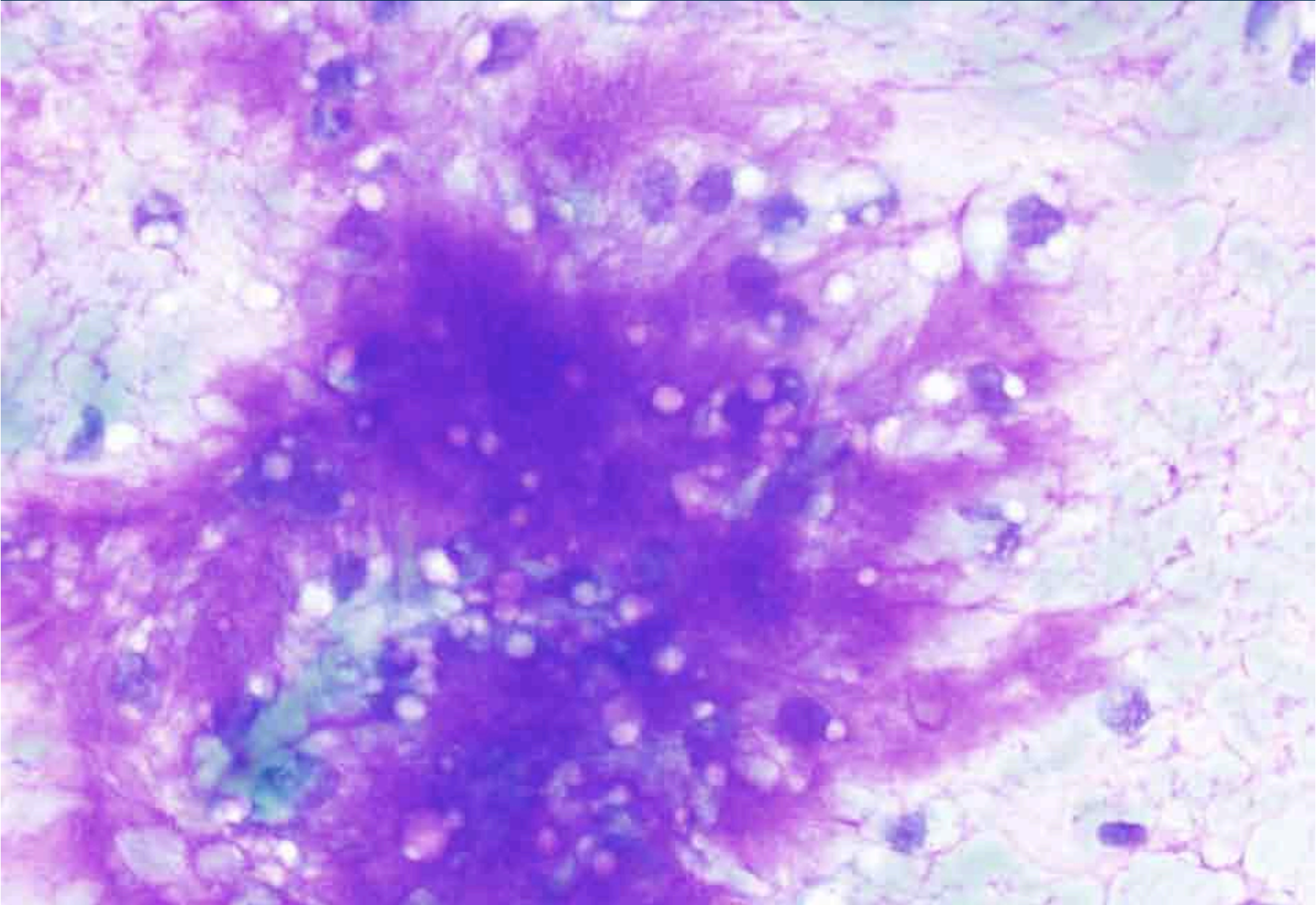
# CT-guided Bone Biopsy





**Bone, femoral head/neck, left , CT-guided FNA: Diff-Quik stain, 20x**

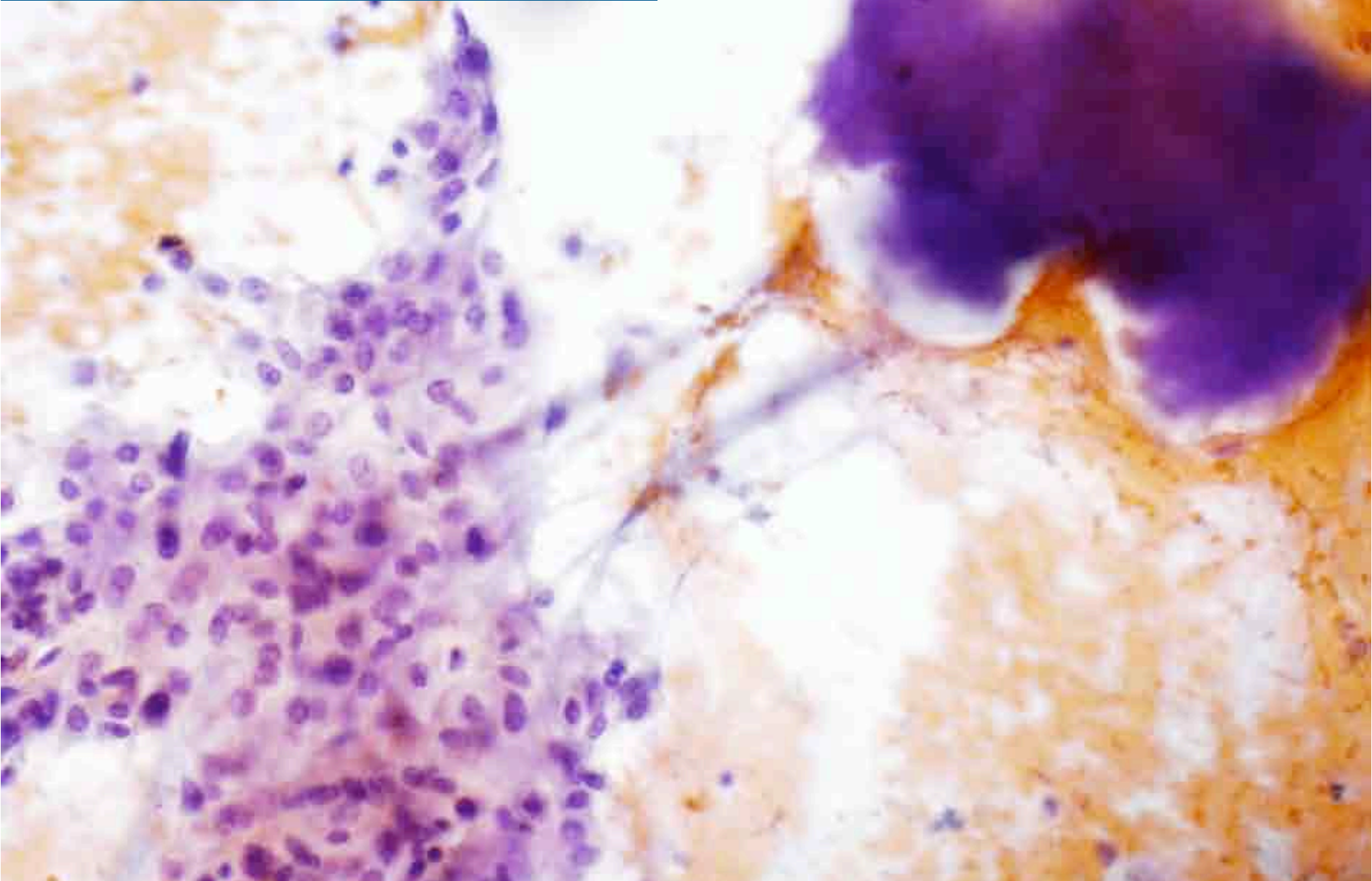




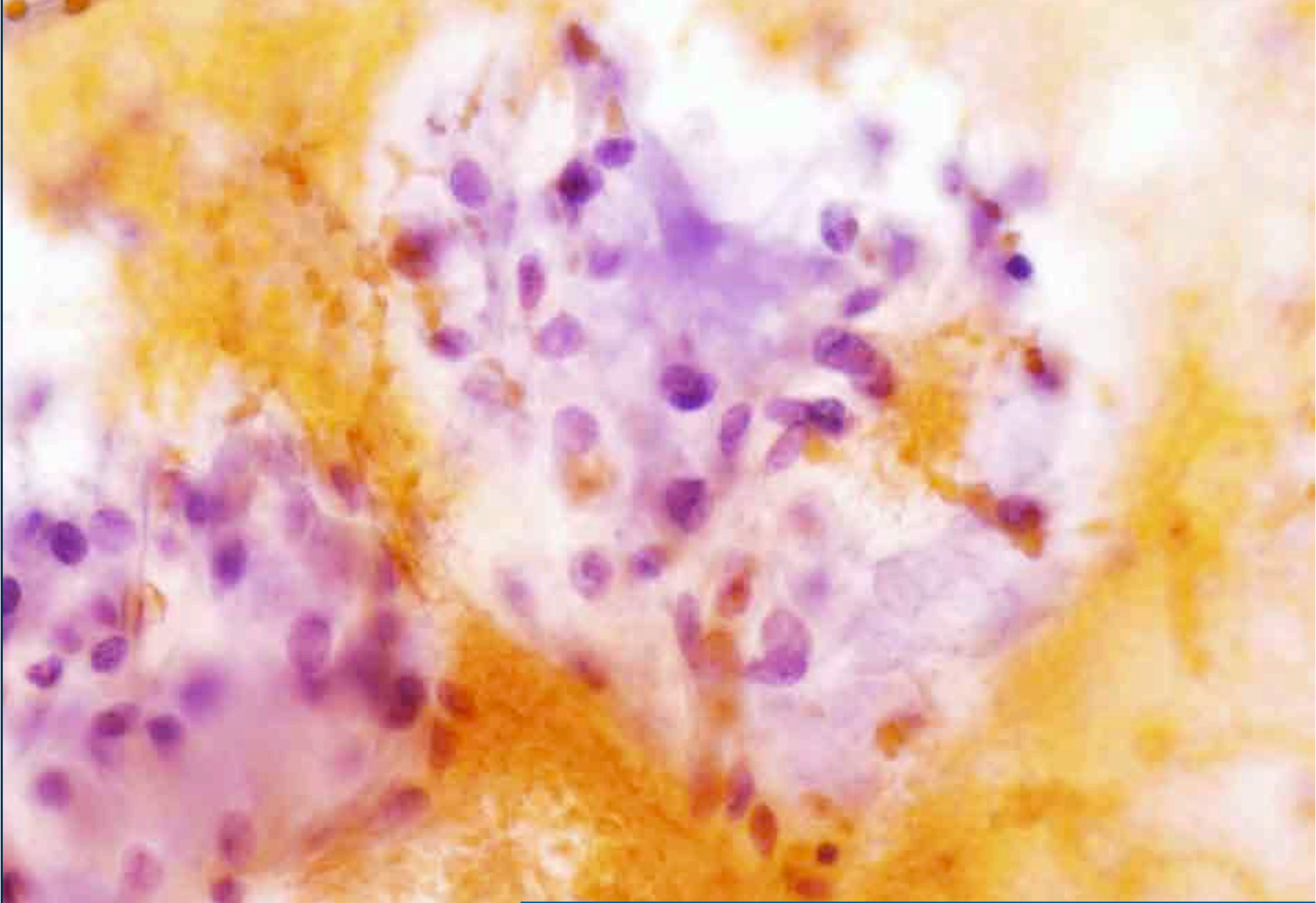
**Bone, femoral head/neck, left , CT-guided**  
**FNA: Diff-Quik stain, 40x**



Bone, femoral head/neck, left , CT-guided FNA: Papanicolaou stain, 20x

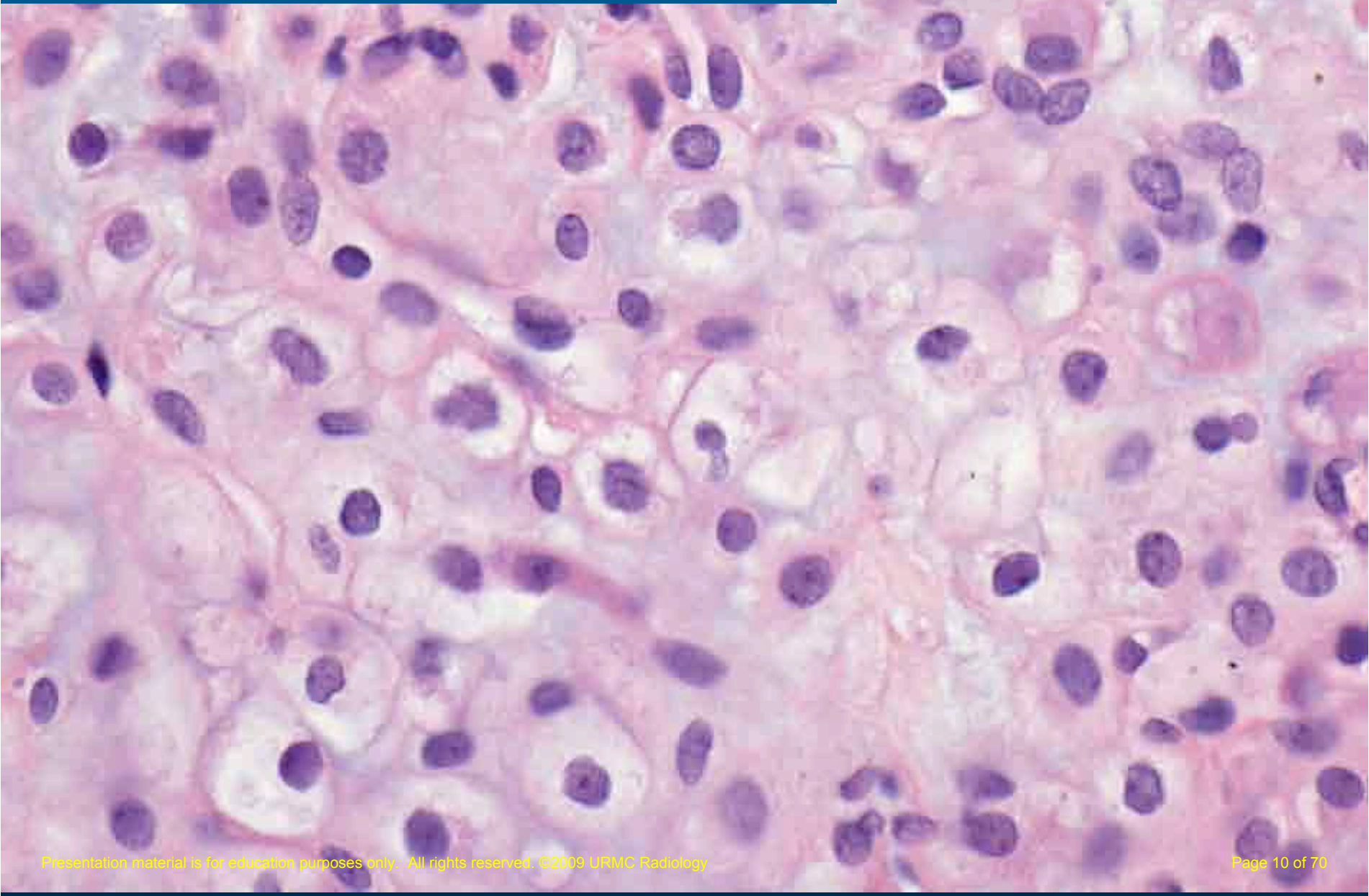






**Bone, femoral head/neck, left , CT-guided  
FNA:Papanicolaou stain, 40x**

**Bone, femoral head/neck, left, CT-guided  
FNA: Cell Block, Hematoxylin and eosin stain,  
40x**



# Bone, femoral head/neck, left, CT-guided fine needle aspiration:

**Chondromyxoid neoplasm, probably low grade.**

Comment: This case was evaluated in conjunction with the core biopsy specimen. *Differential diagnosis includes chondrosarcoma and clear cell chondrosarcoma.* Chondroblastoma is also a consideration, but seems less likely based on this material. Additional tissue biopsy is recommended in order to facilitate more definitive classification.

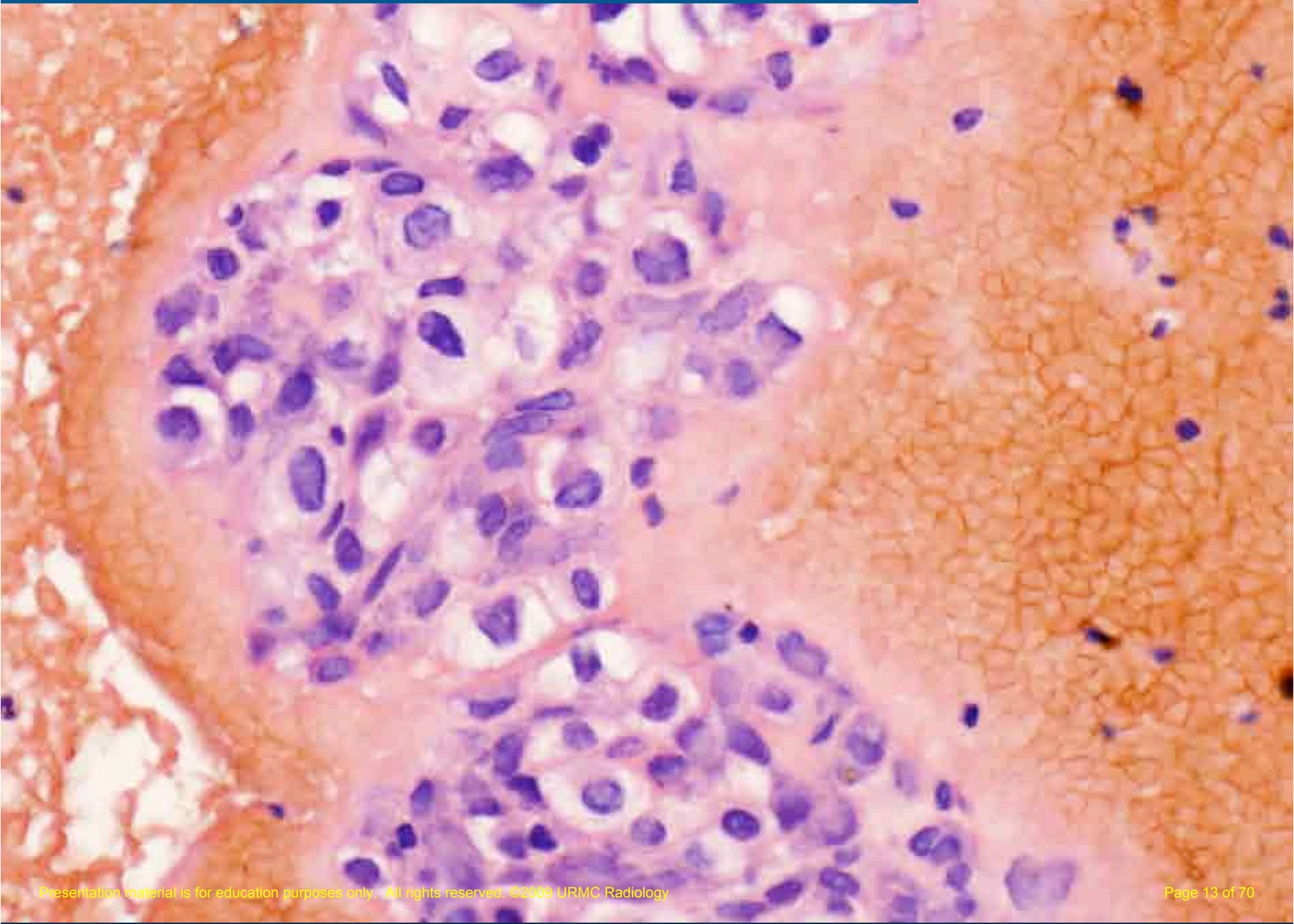
Cell block and cytologic preparations examined.



# Bone, left femoral neck, core needle biopsy:

Blood clot with scanty fragments of tissue showing  
chondromyxoid neoplasm with necrosis and bone formation.

Comment: The tissue is too minimal for a definitive diagnosis.  
A low grade chondroid forming neoplasm is favored.

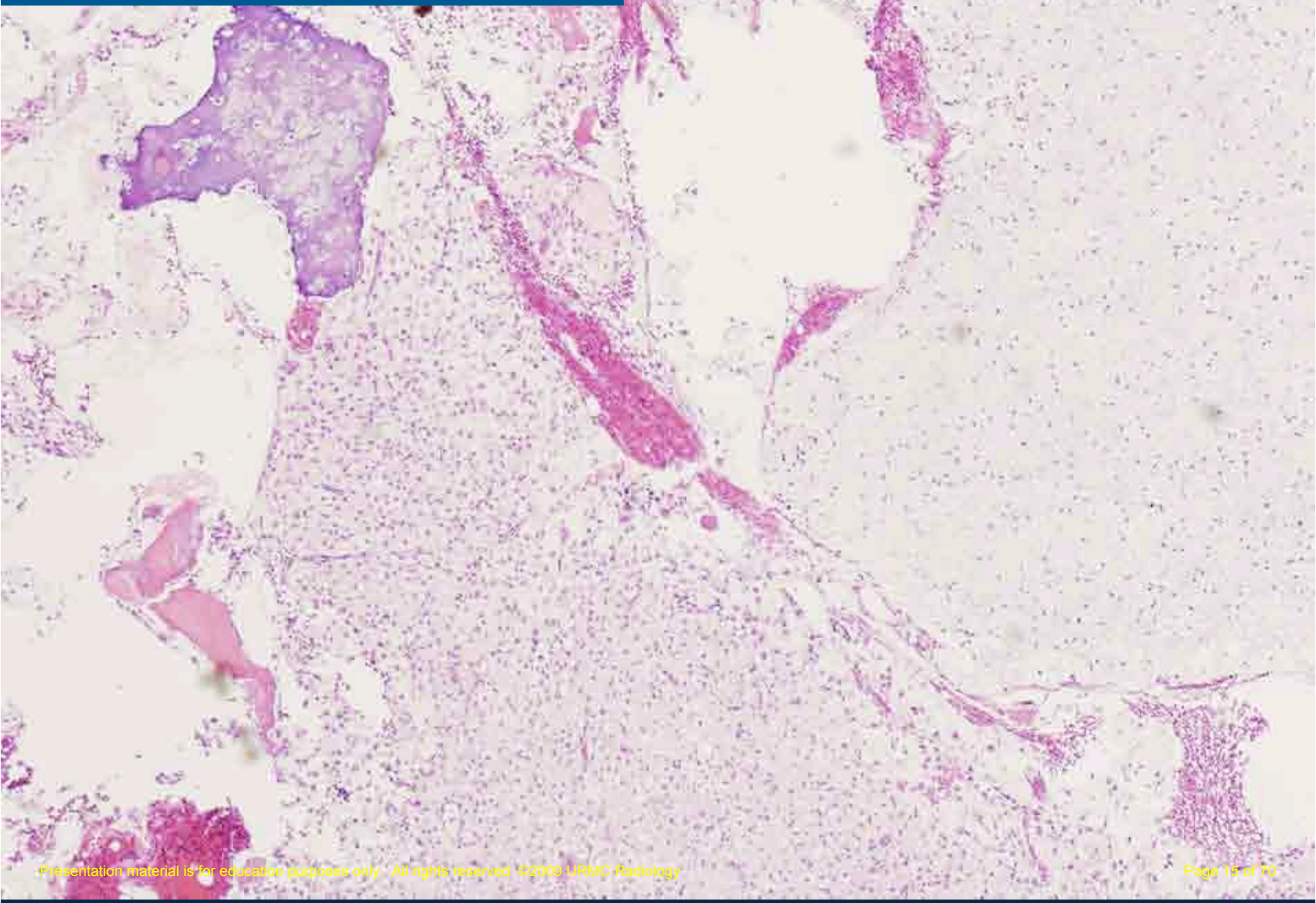


Bone, left femoral neck,  
curettage:

Clear cell chondrosarcoma.

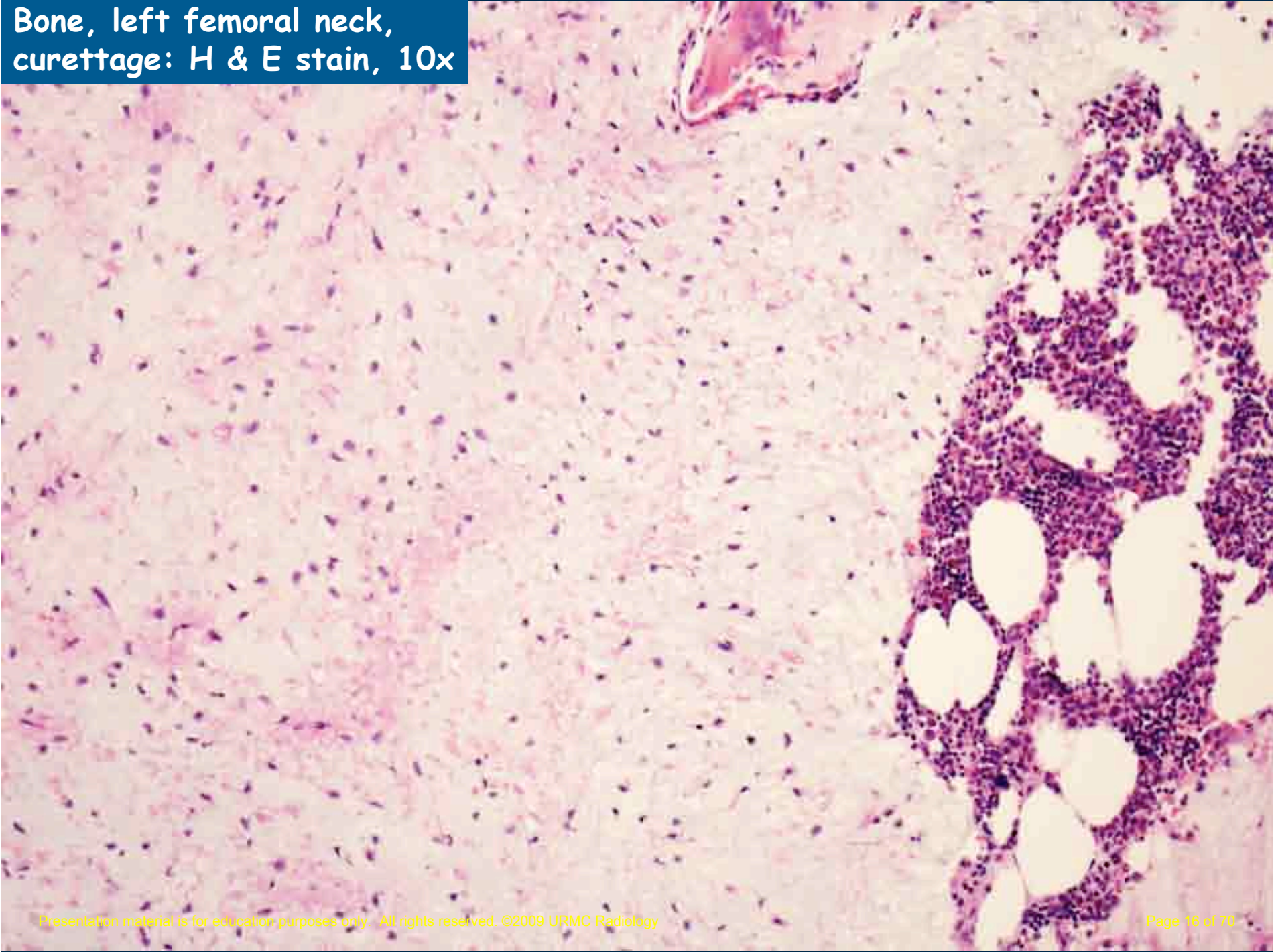


**Bone, left femoral neck, curettage:  
H & E stain, 4x**



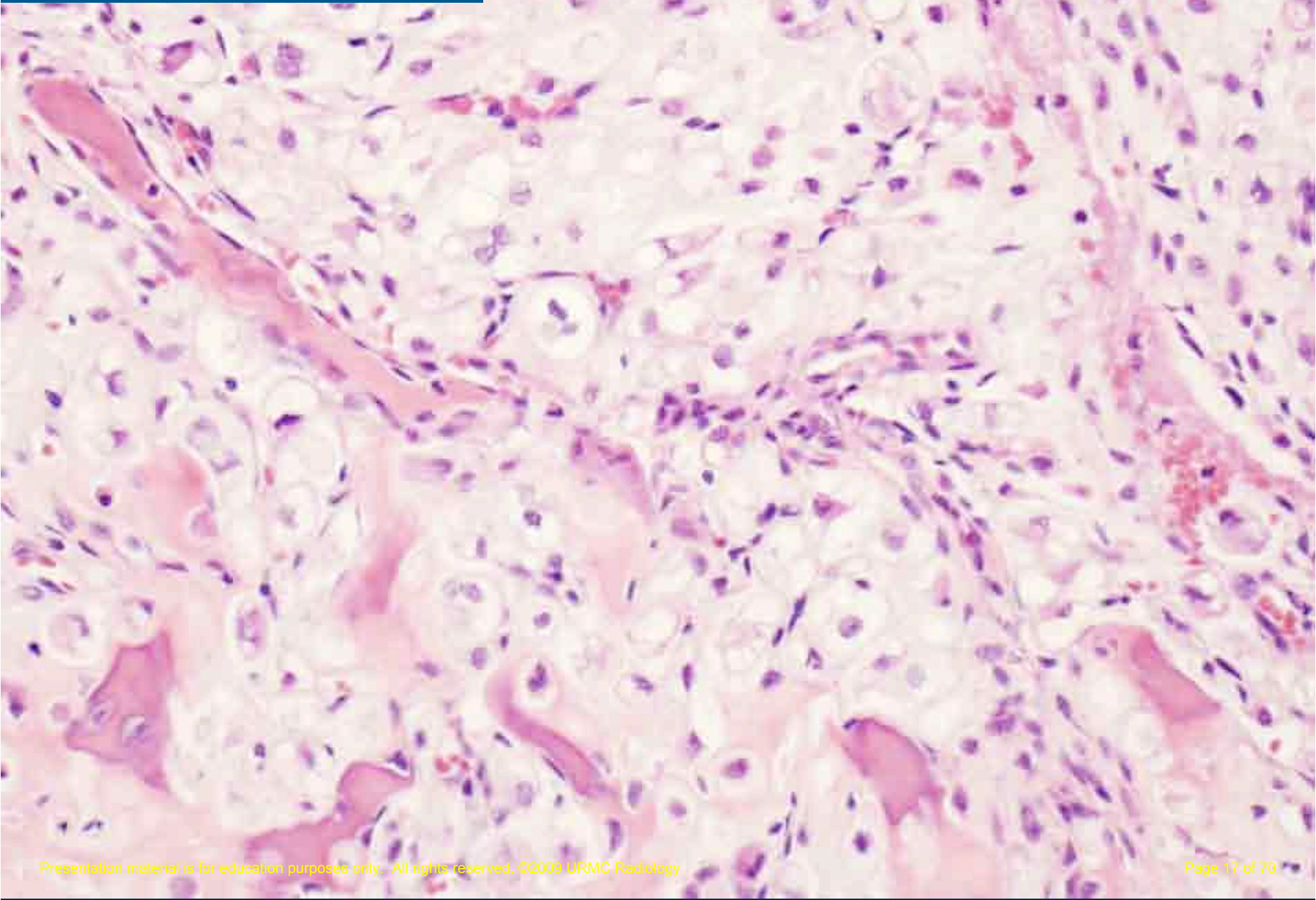


**Bone, left femoral neck,  
curettage: H & E stain, 10x**



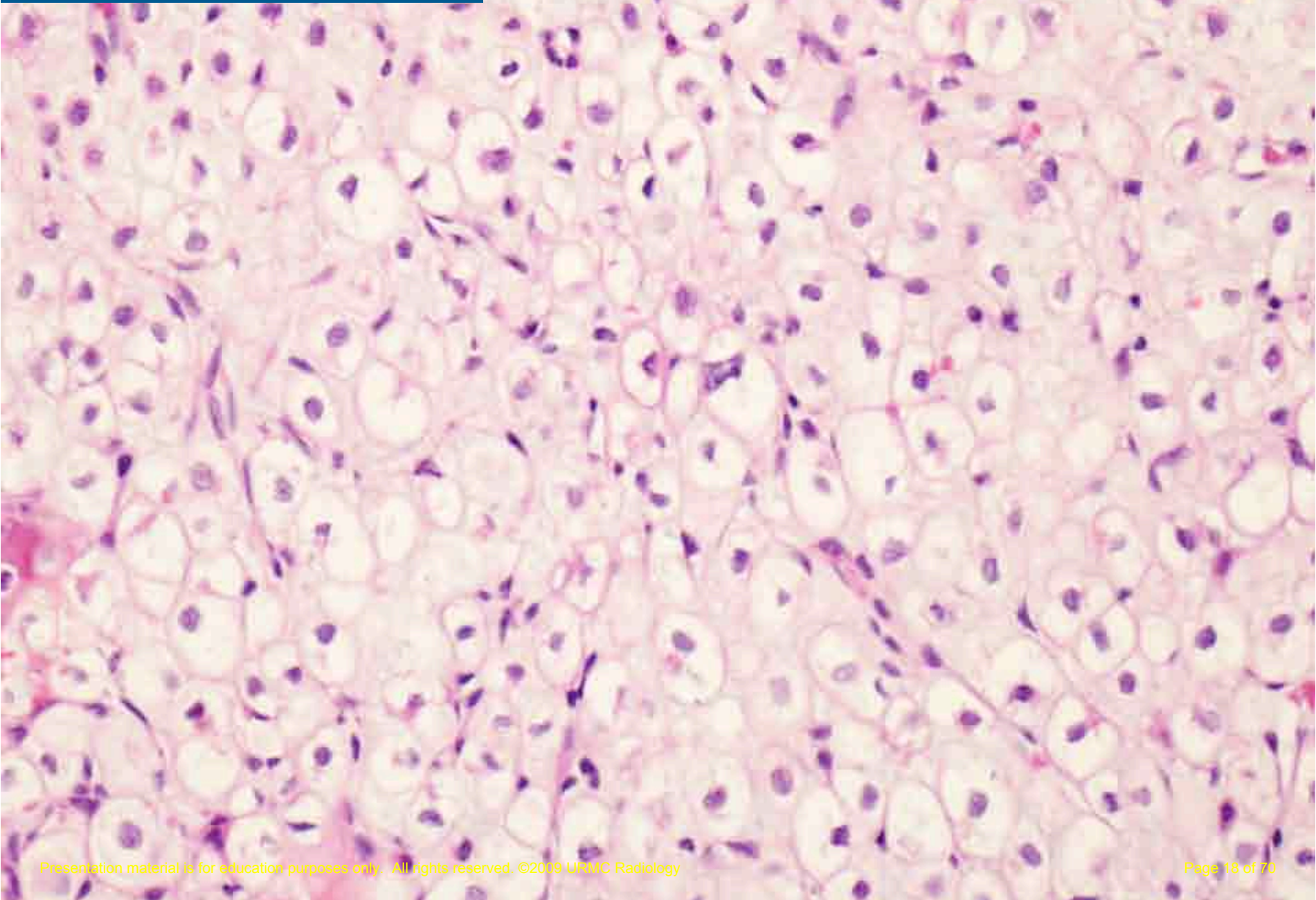


**Bone, left femoral neck,  
curettage: H & E stain, 20x**

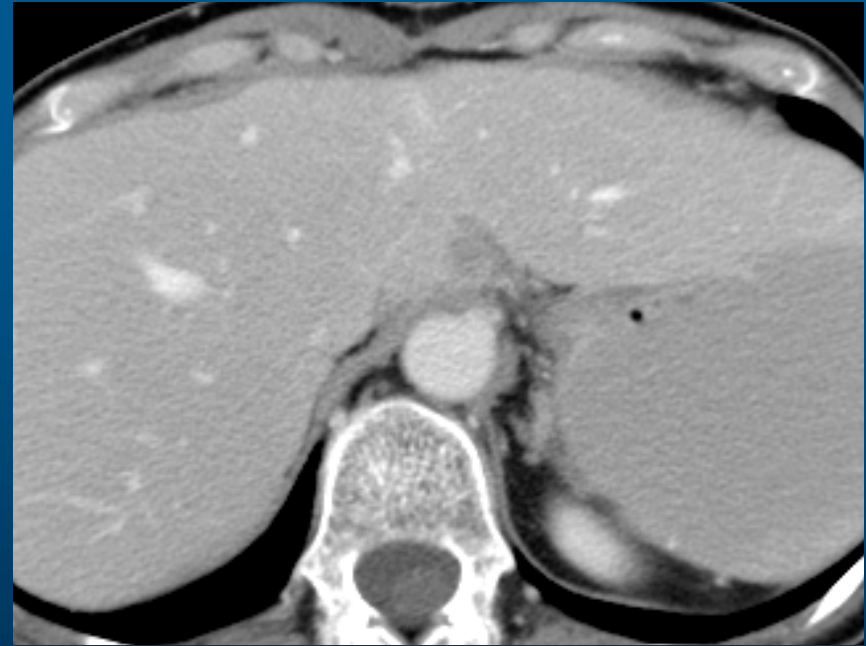
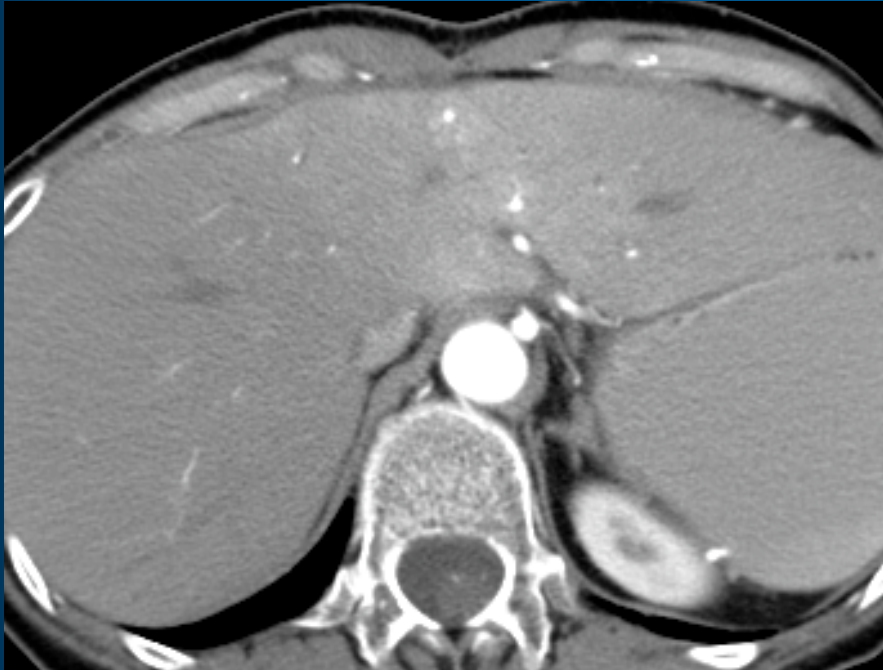


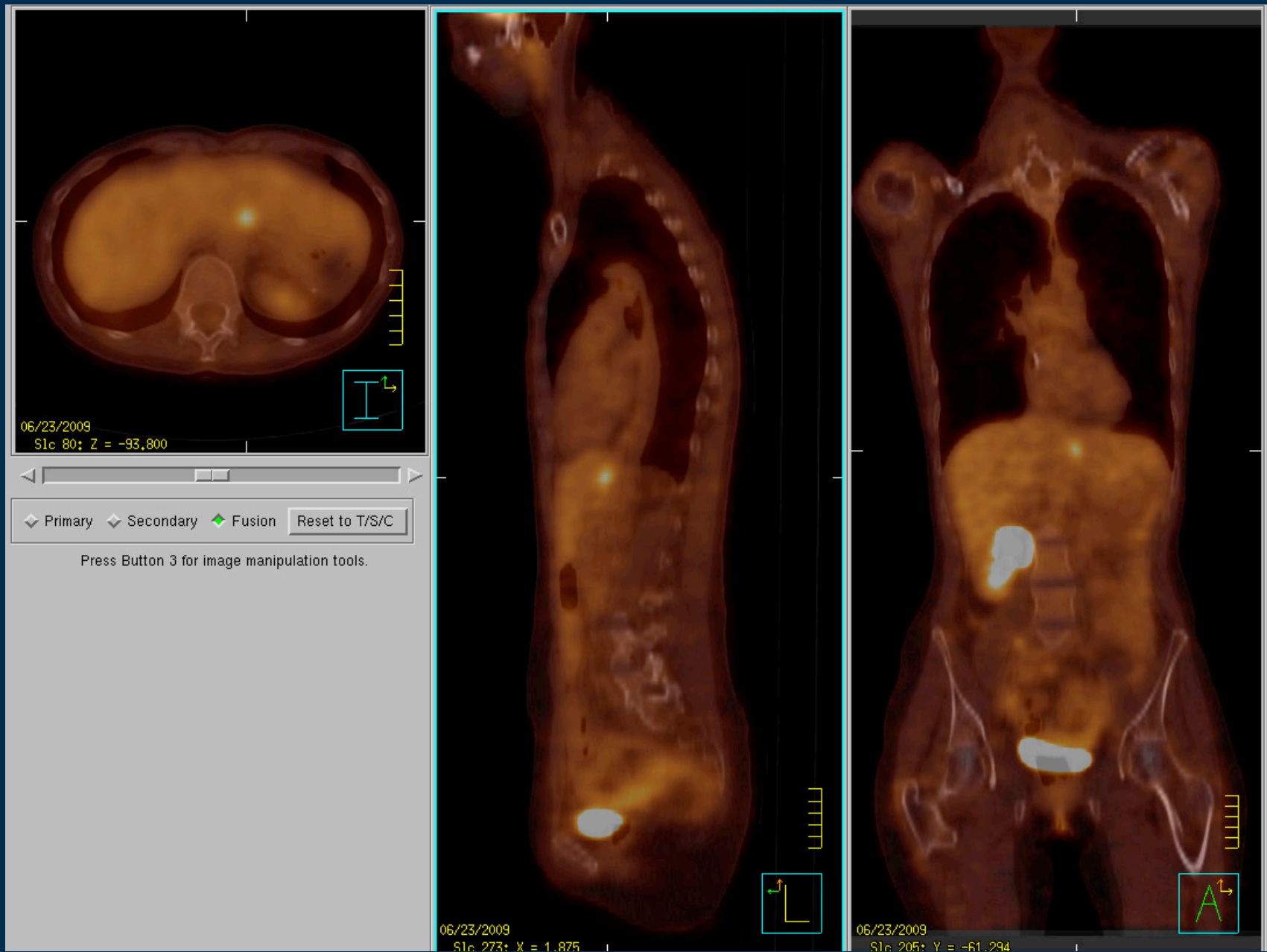


**Bone, left femoral neck,  
curettage: H & E stain, 20x**



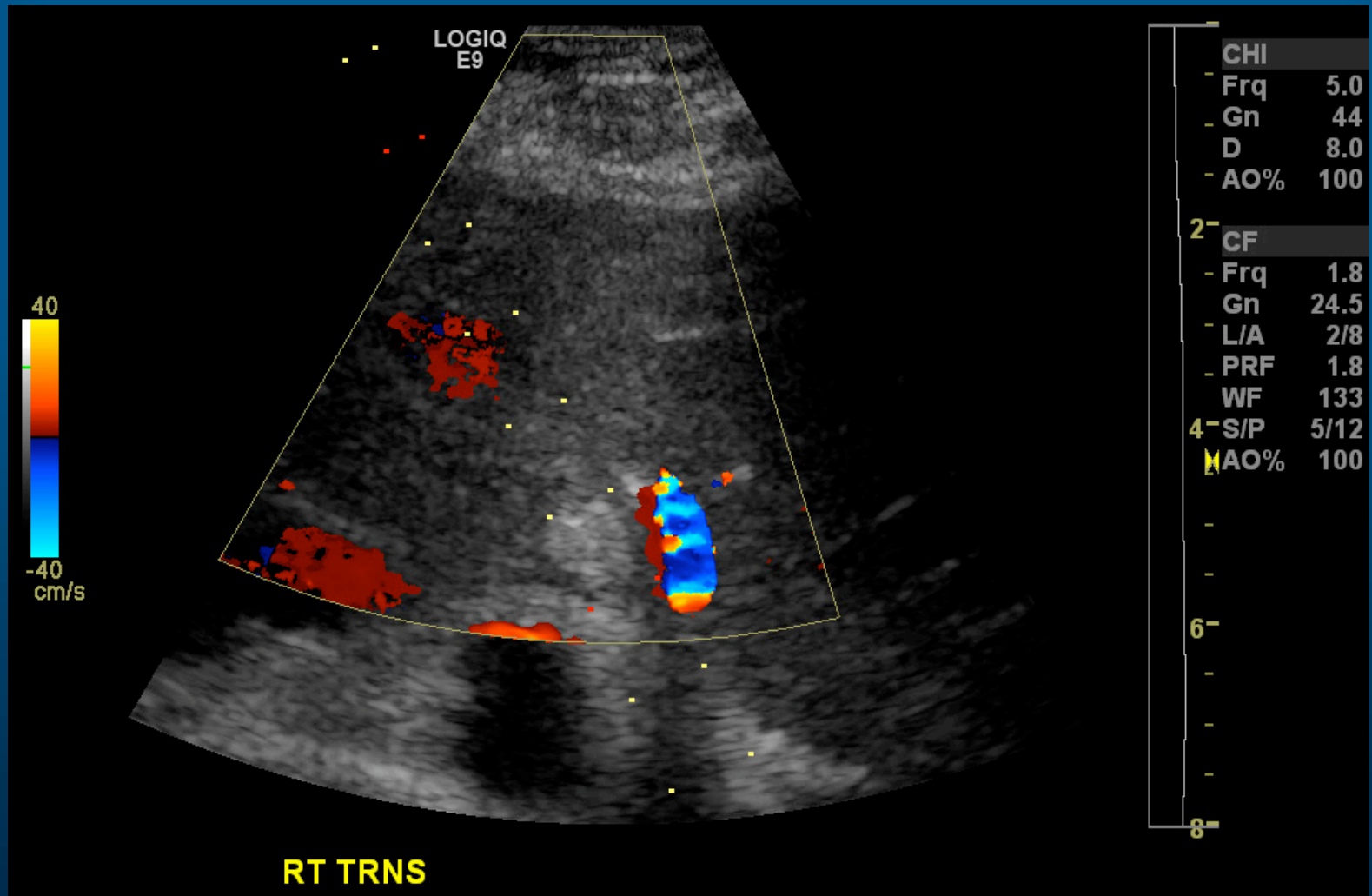
## Case 2: 54-year-old female







# Ultrasound-guided Liver Biopsy



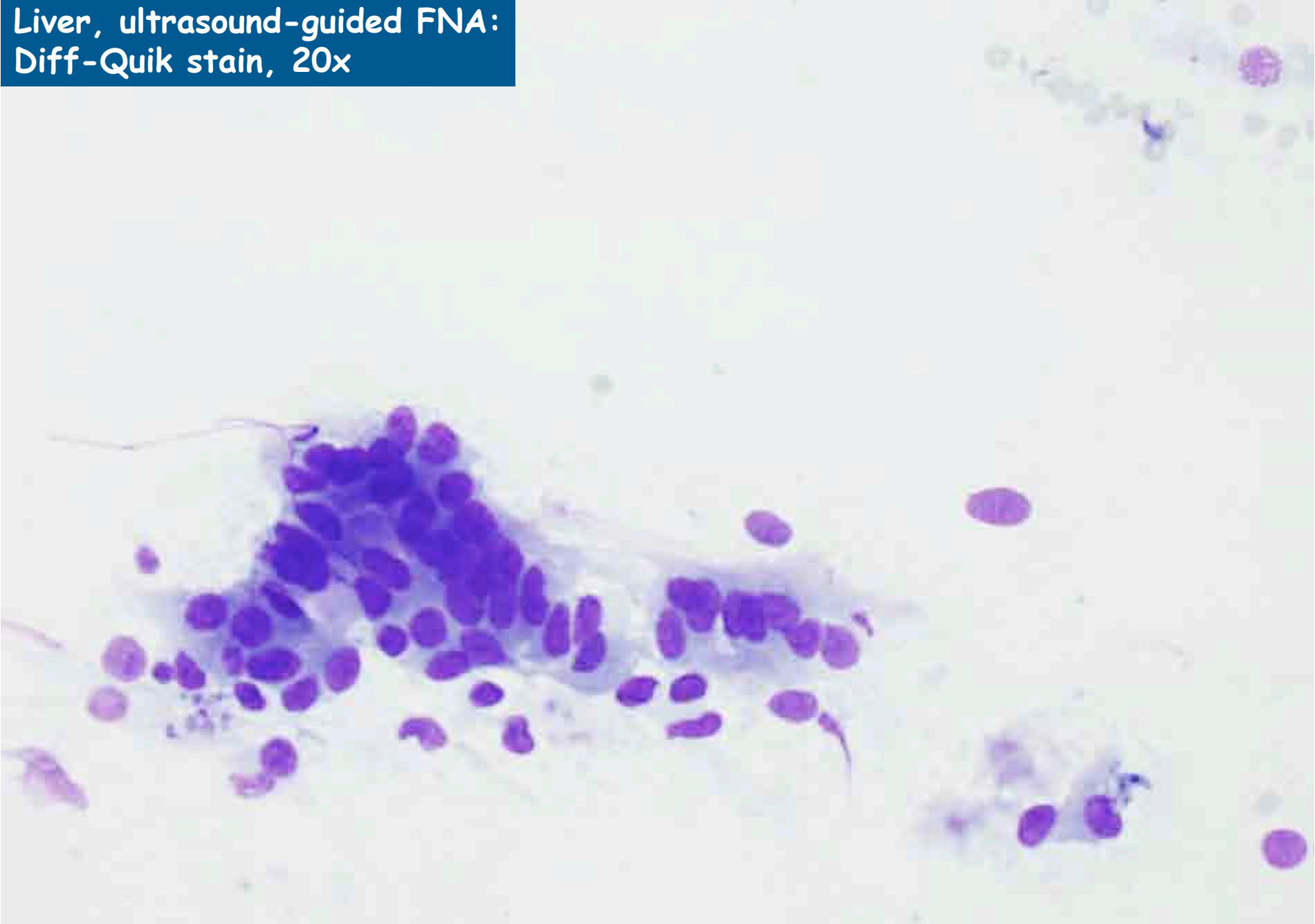
## Findings:

- CT: Early-phase enhancing caudate lobe lesion.
- PET: Hypermetabolic lesion in the caudate lobe of the liver image 81 (SUV 3.9)
- US: Hyperechoic

## Differential Diagnosis (for rounded hyperechoic foci on ultrasound & hypermetabolic on PET):

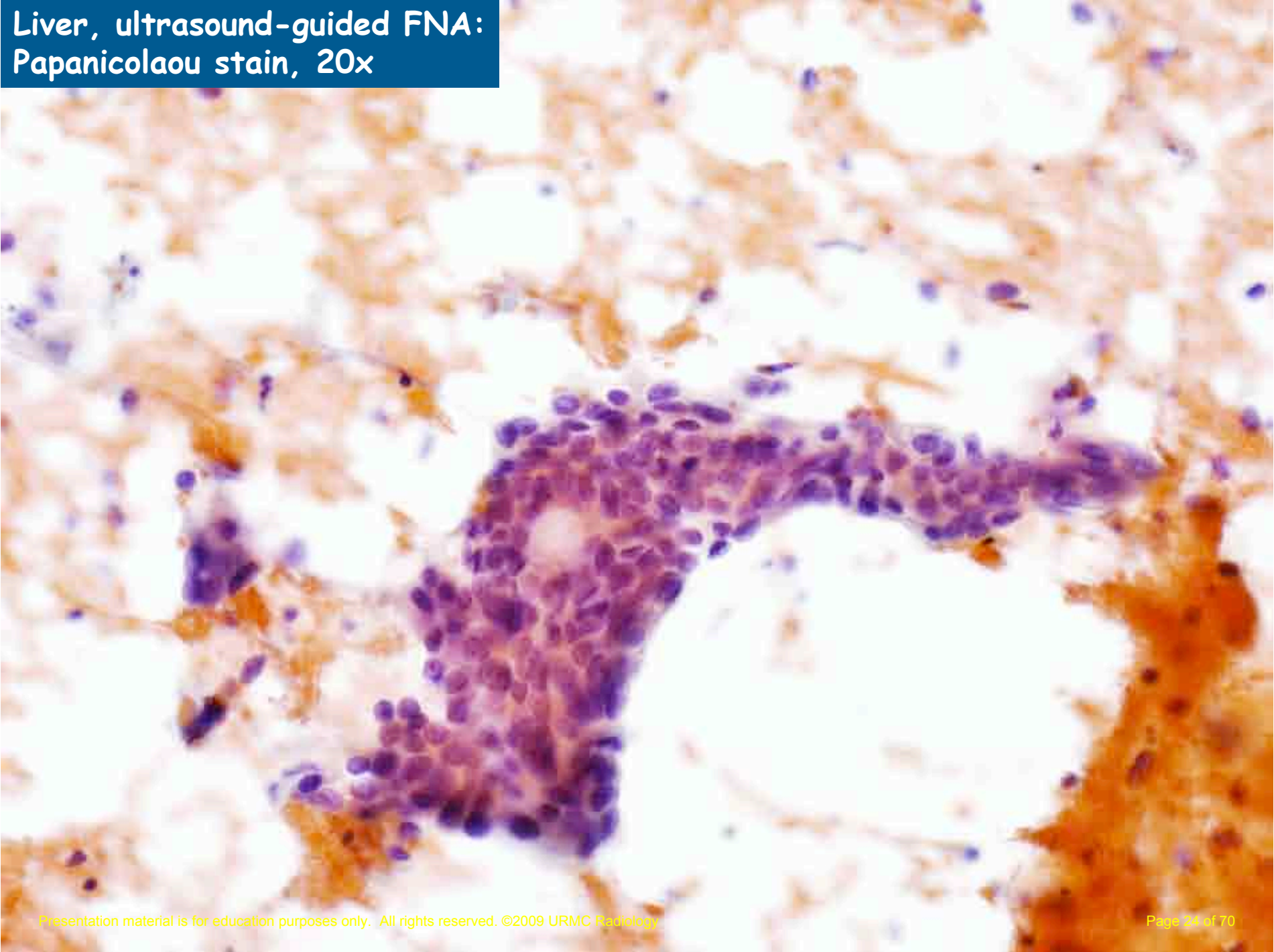
- Hepatoma
- Metastatic Diseases (ie -- Colon Cancer)

**Liver, ultrasound-guided FNA:  
Diff-Quik stain, 20x**

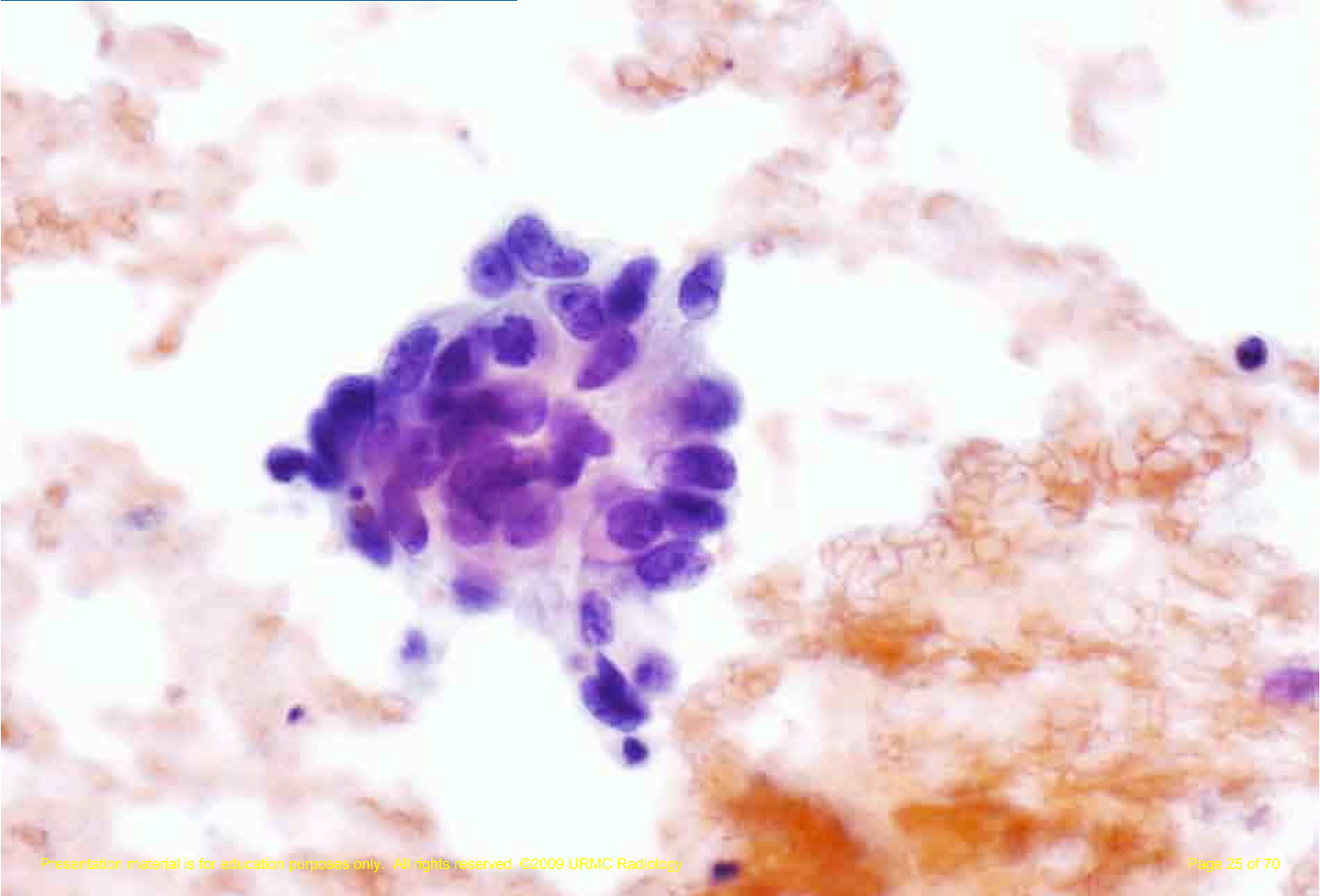




**Liver, ultrasound-guided FNA:  
Papanicolaou stain, 20x**

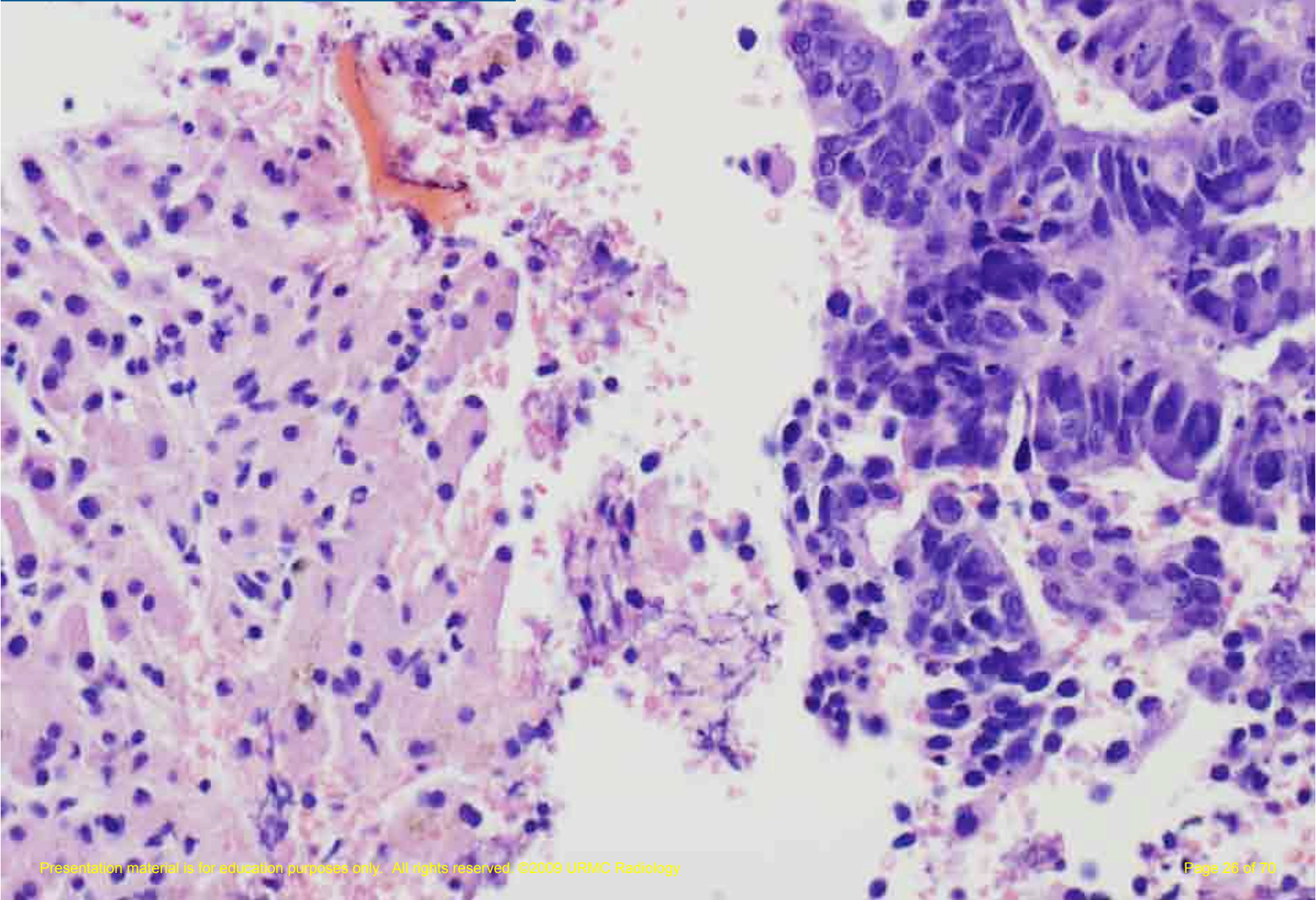


**Liver, ultrasound-guided FNA:  
Papanicolaou stain, 40x**



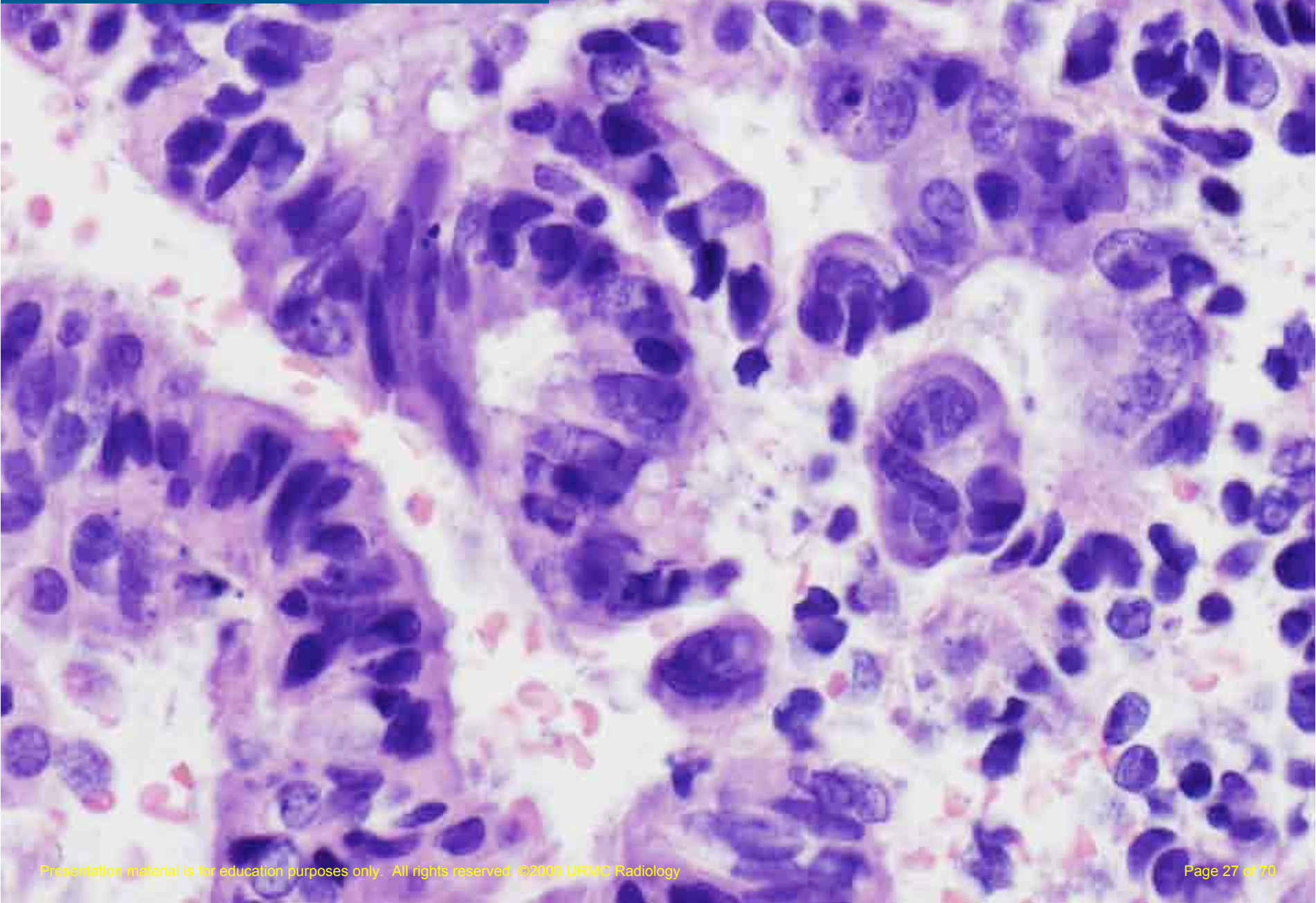


**Liver, ultrasound-guided FNA:  
Cell block, H & E stain, 20x**





**Liver, ultrasound-guided FNA:  
Cell block, H & E stain, 40x**



# Liver, ultrasound-guided fine needle aspiration:

Malignant tumor cells present derived from adenocarcinoma consistent with colonic primary.

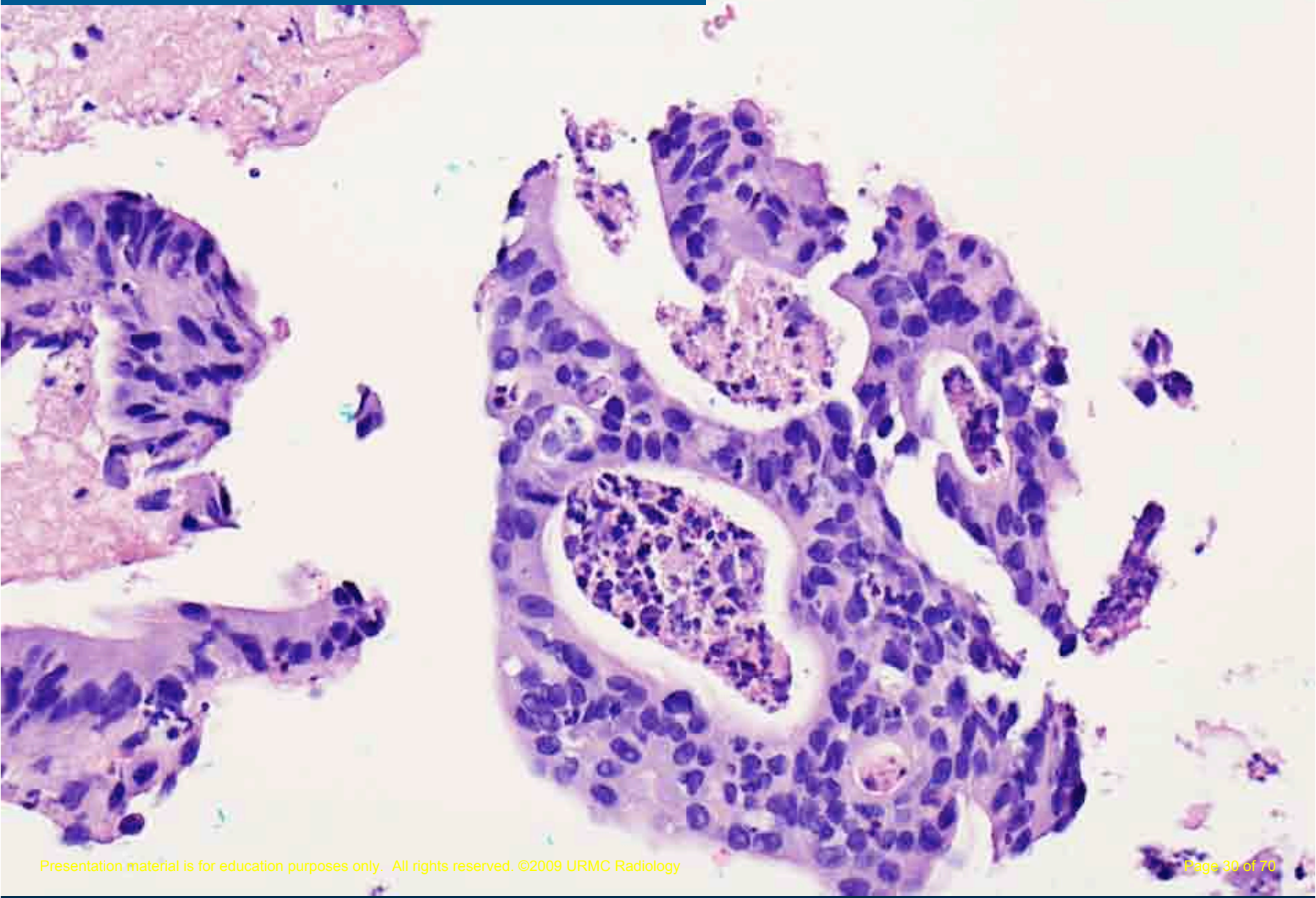
Cell block and cytologic preparations examined.

# Liver, core needle biopsy:

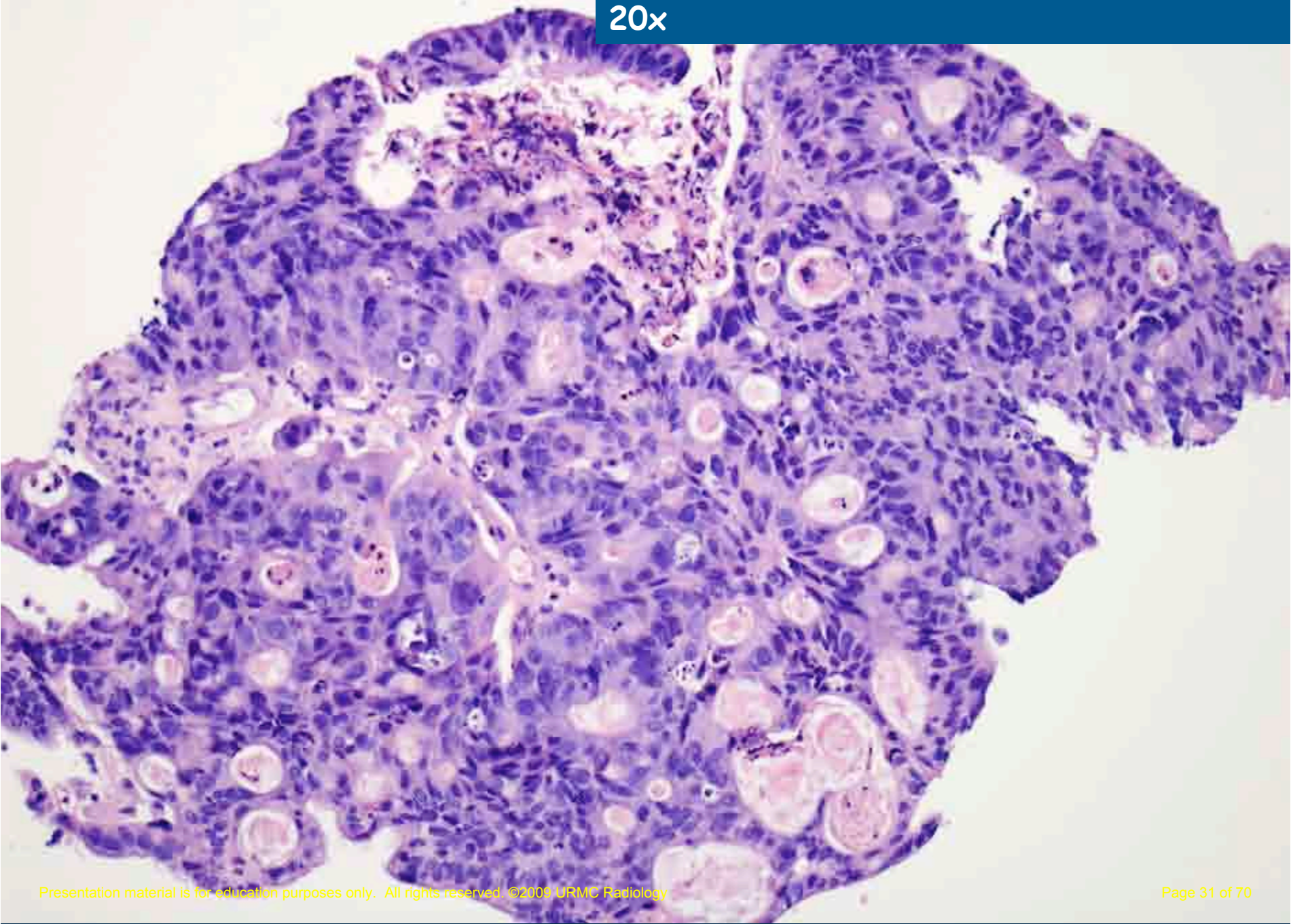
**Moderately differentiated adenocarcinoma  
consistent with colonic primary.**



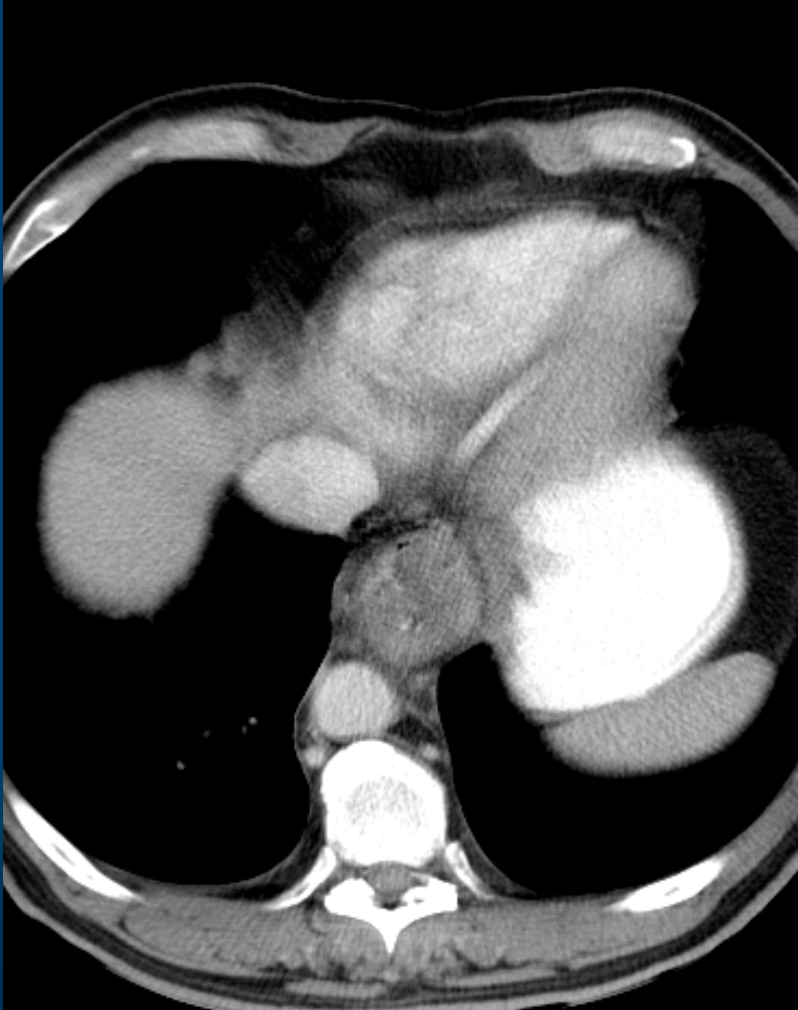
Liver, core needle biopsy: H & E stain, 20x



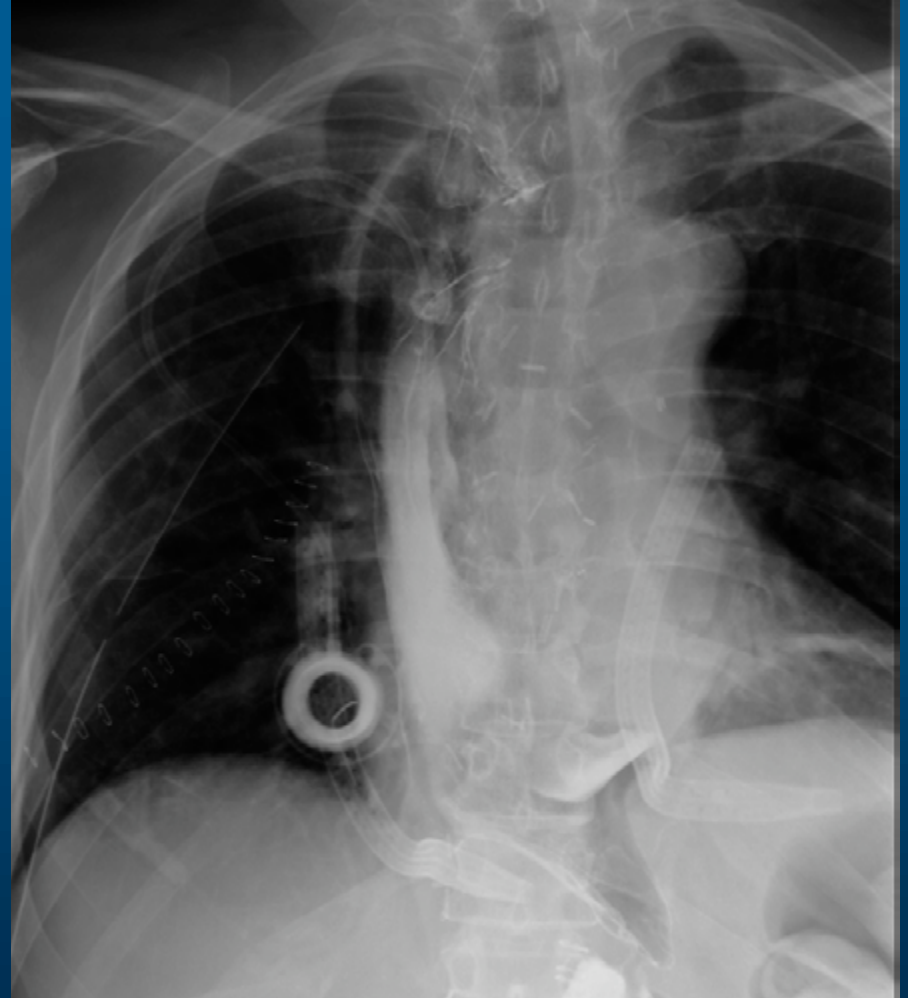




## Case 3: 58-year-old male



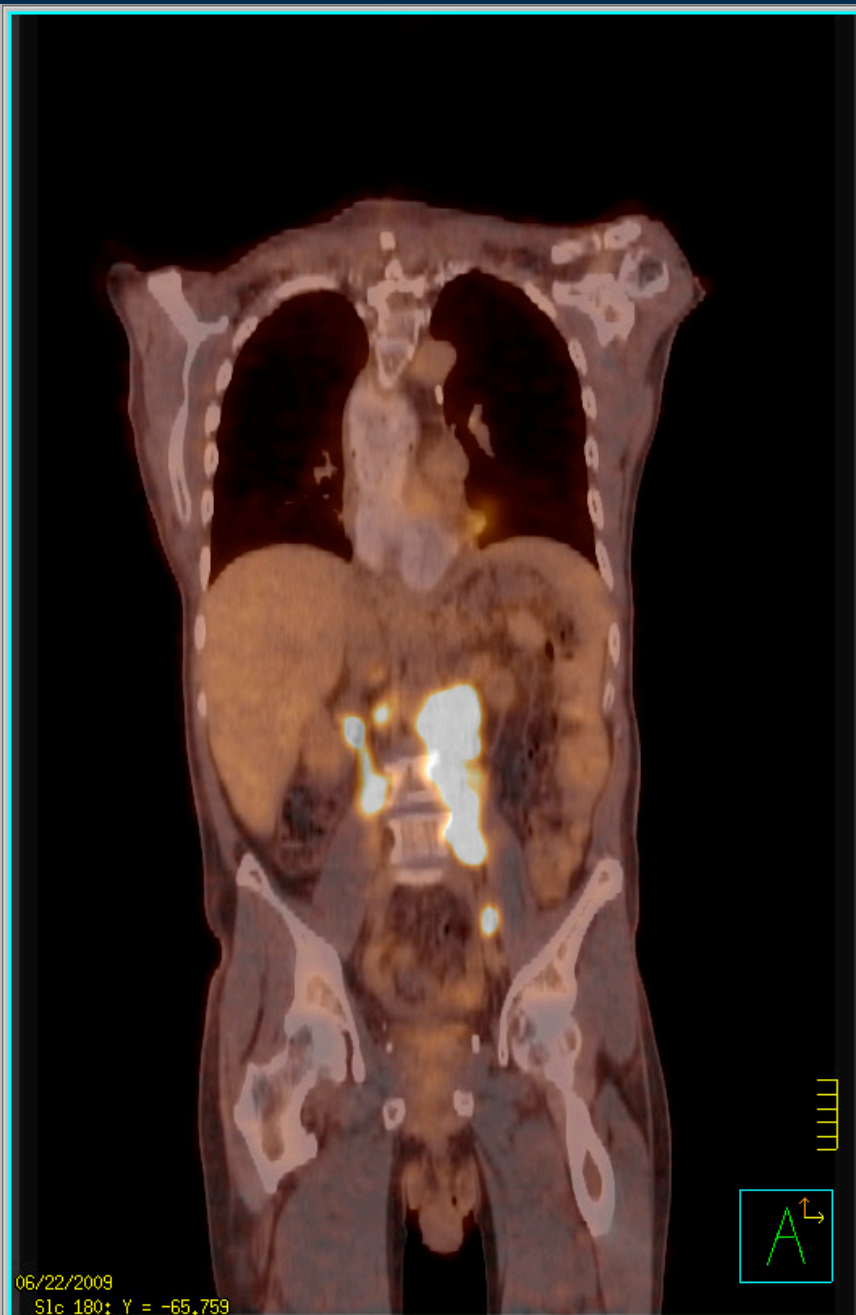
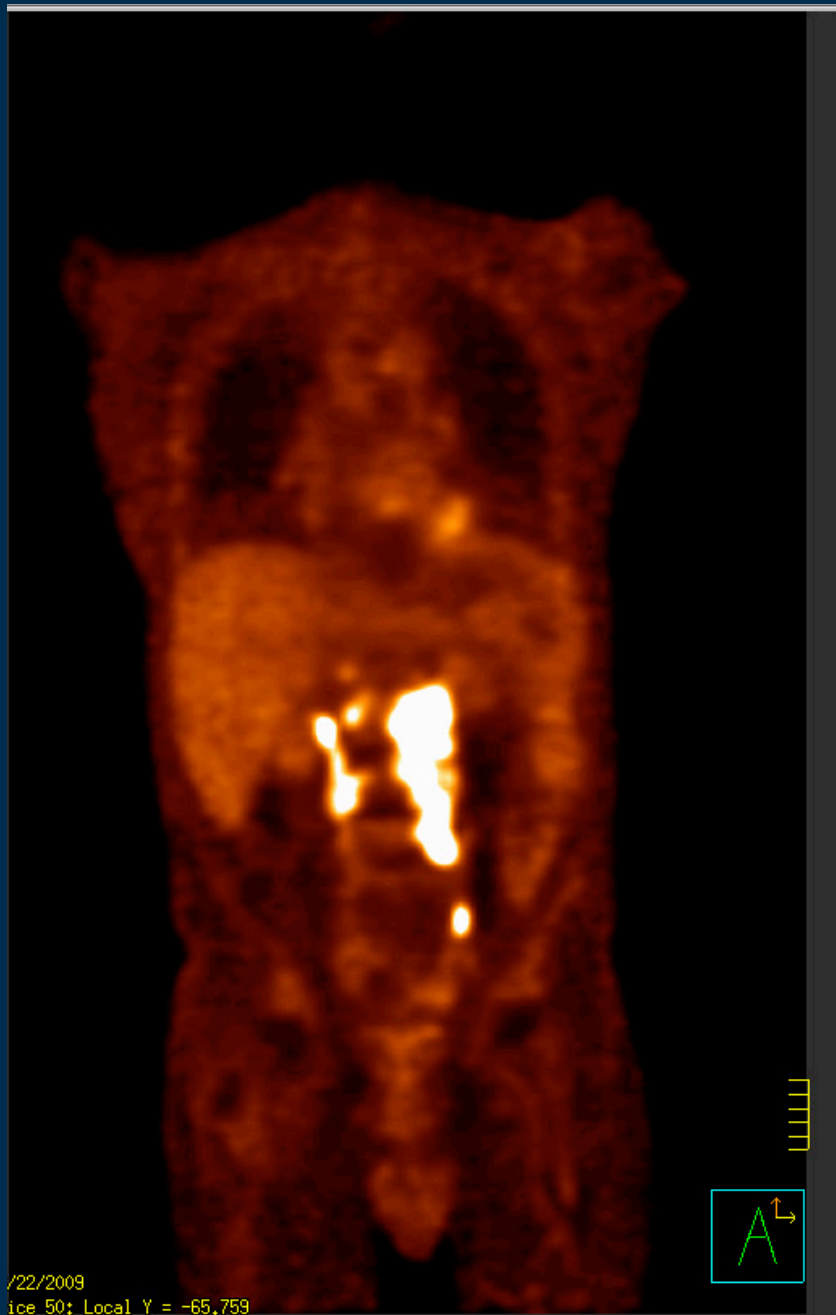
June 2008



February 2009







## Findings:

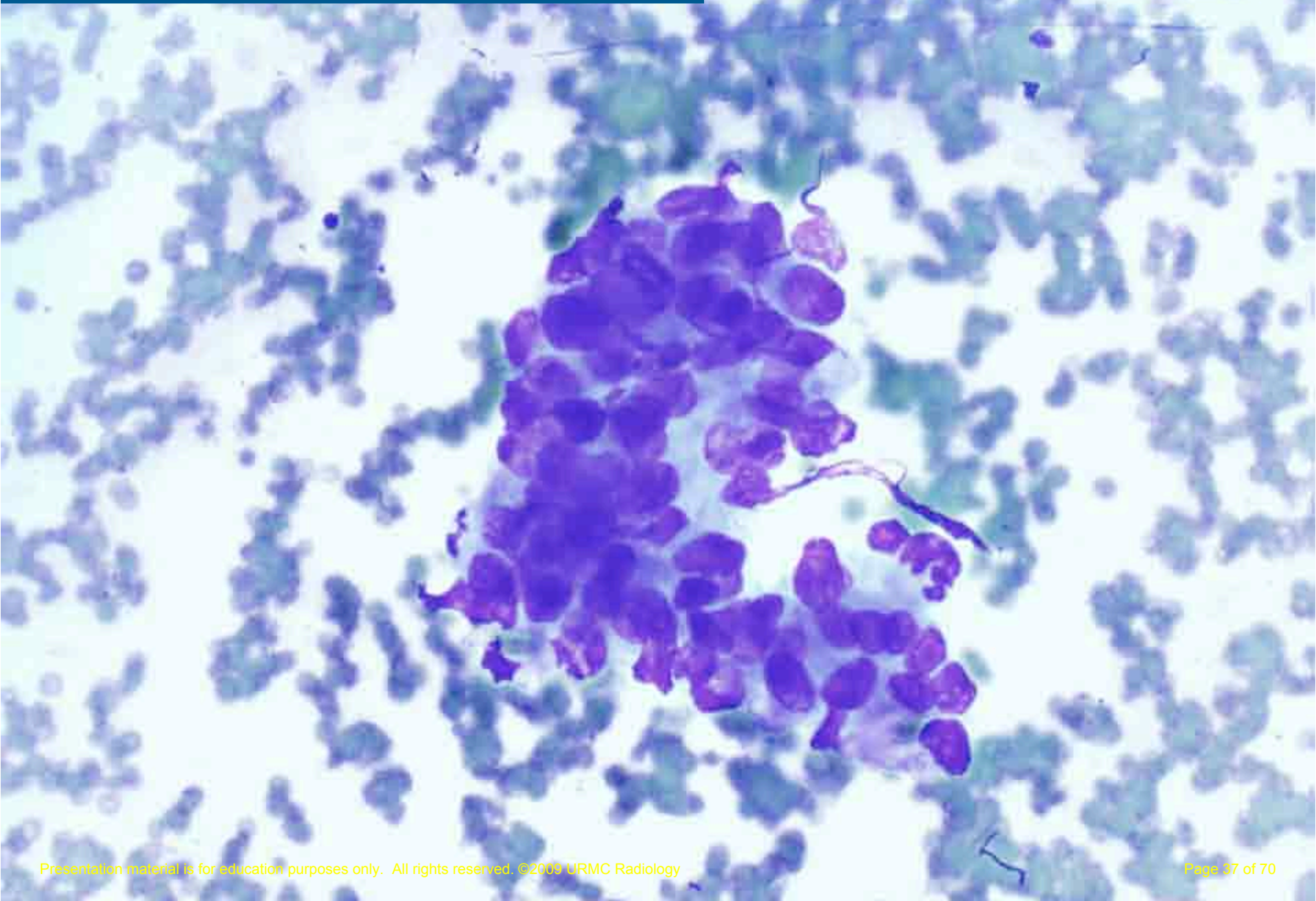
- Initial CT: Abnormal circumferential wall thickening in the mid to distal esophagus
- UGI: Gastric pull-through
- Subsequent CT: Significant retroperitoneal lymphadenopathy
- PET: Extensive hypermetabolic abdominal lymphadenopathy



# CT-guided Lymph Node biopsy

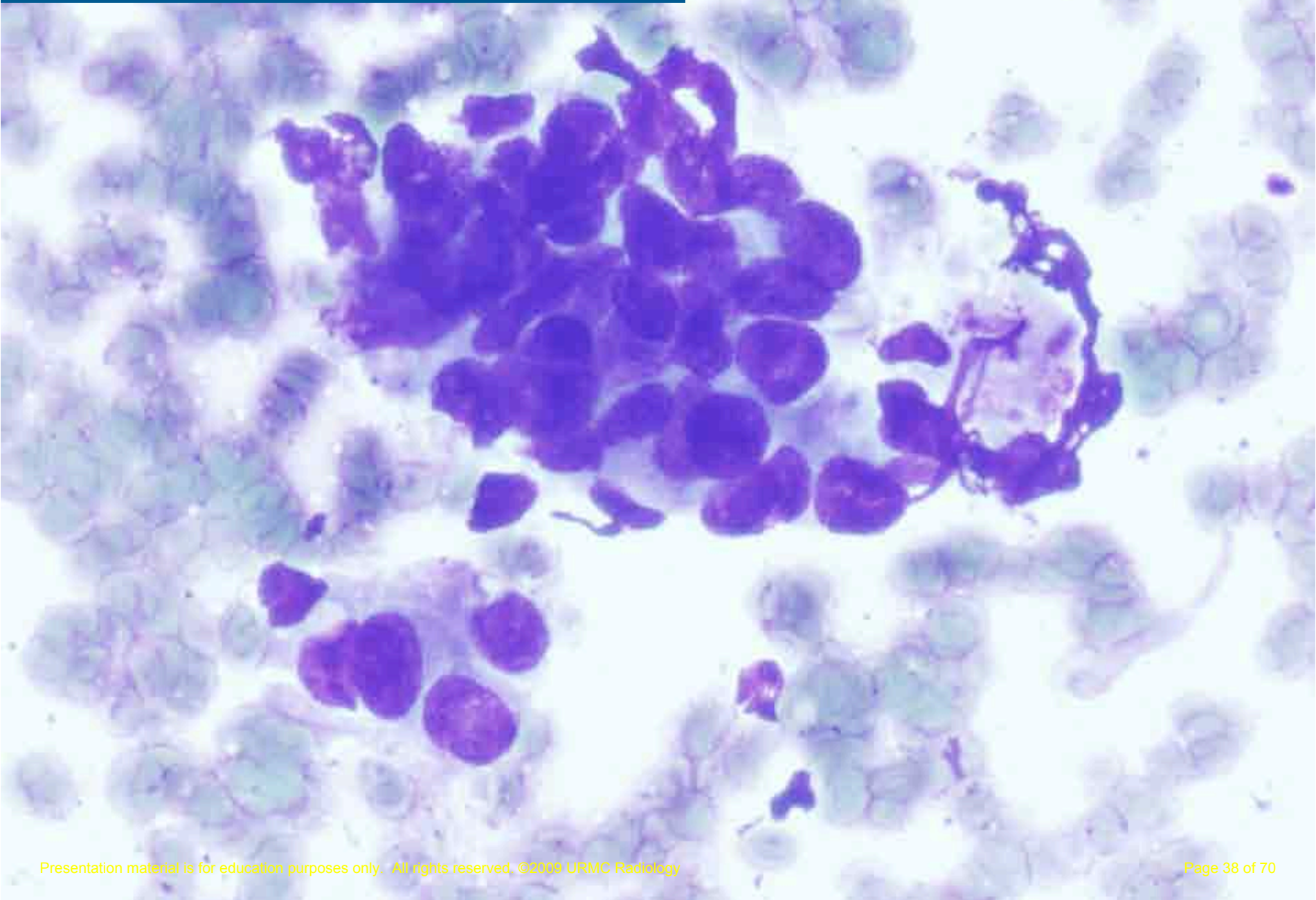


**Lymph node, retroperitoneal, left, CT-guided FNA: Diff-Quik stain, 20x**



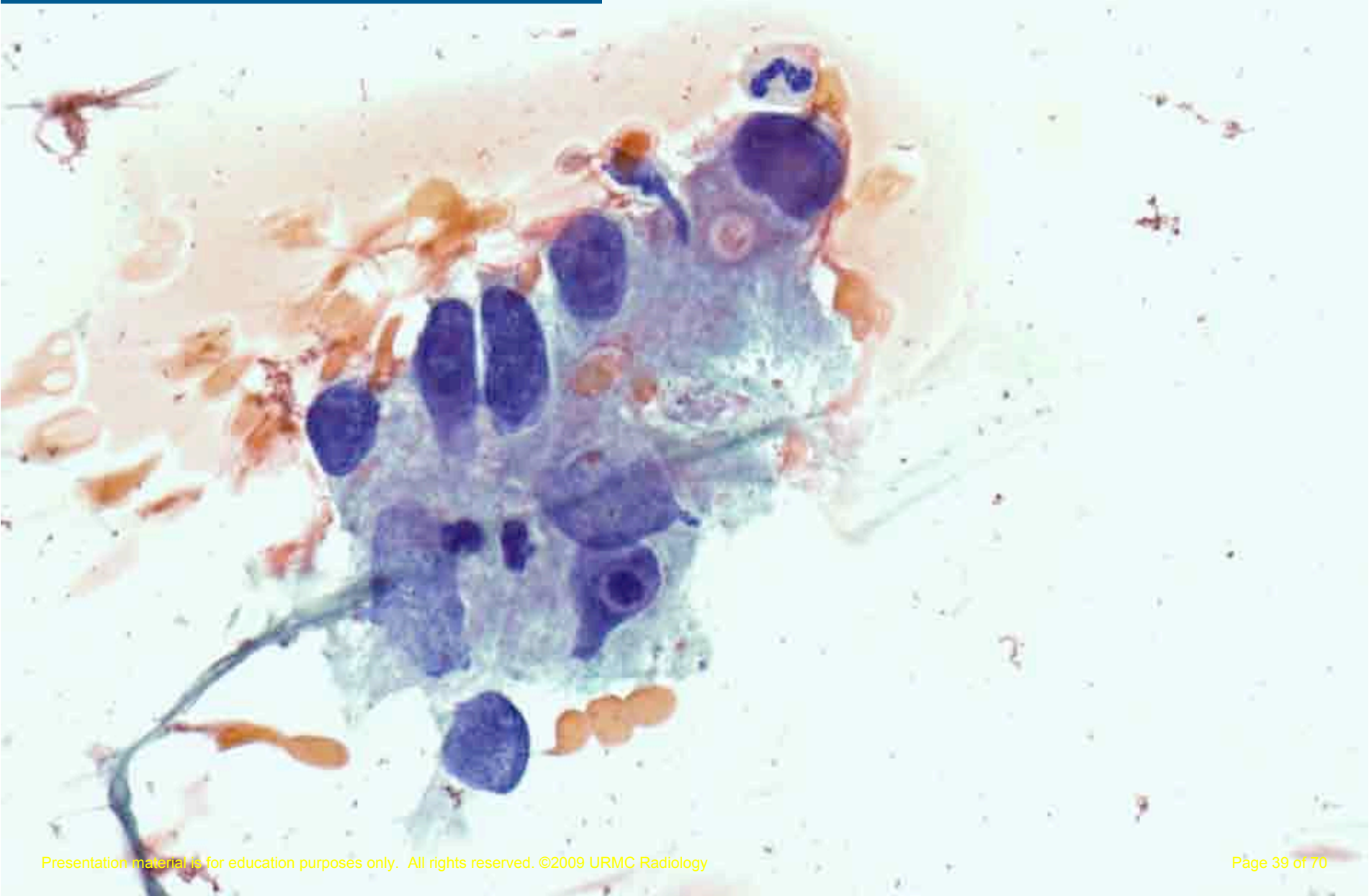


**Lymph node, retroperitoneal, left, CT-guided FNA: Diff-Quik stain, 40x**



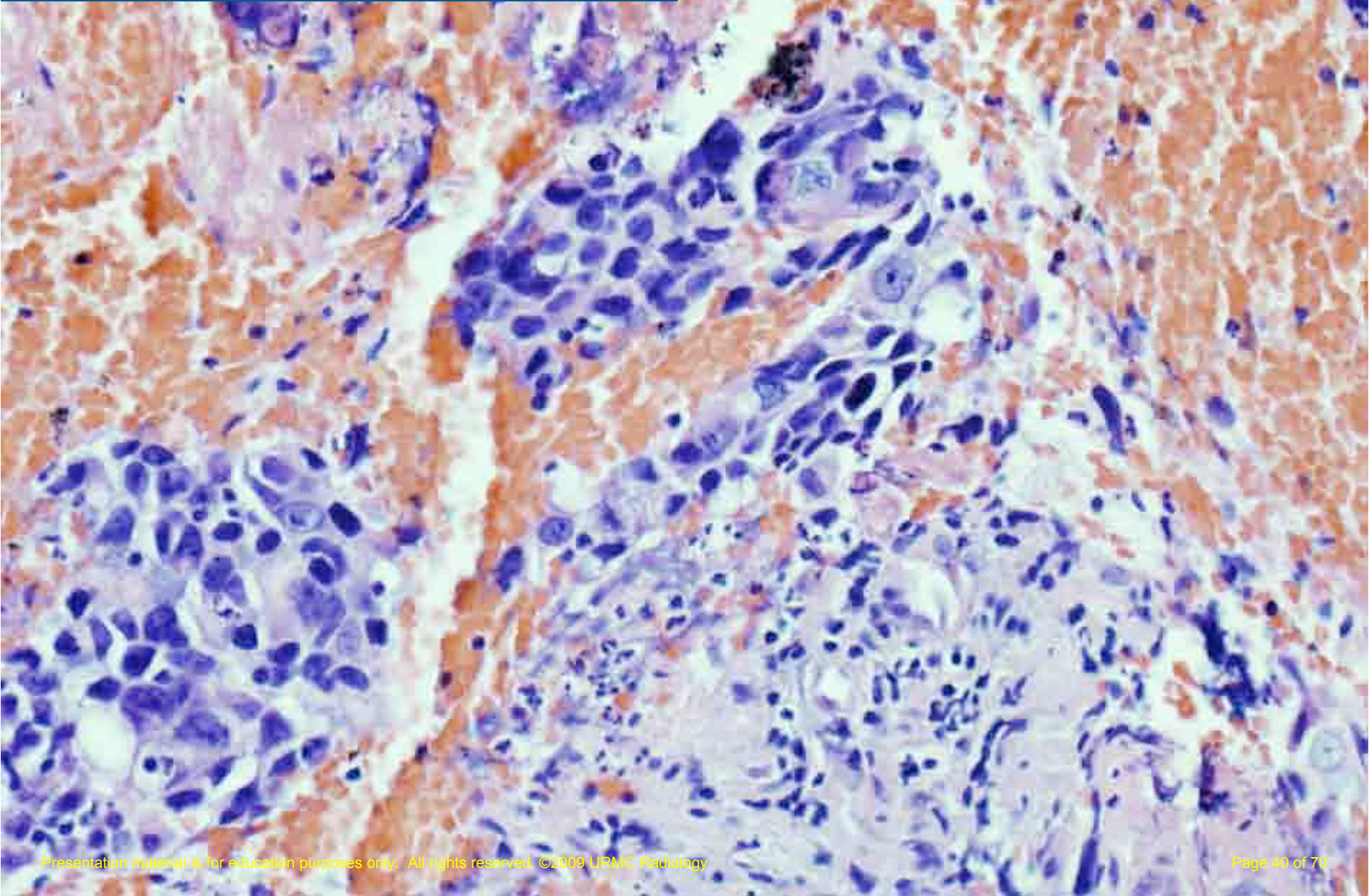


**Lymph node, retroperitoneal,  
left, CT-guided FNA:  
Papanicolaou stain, 40x**



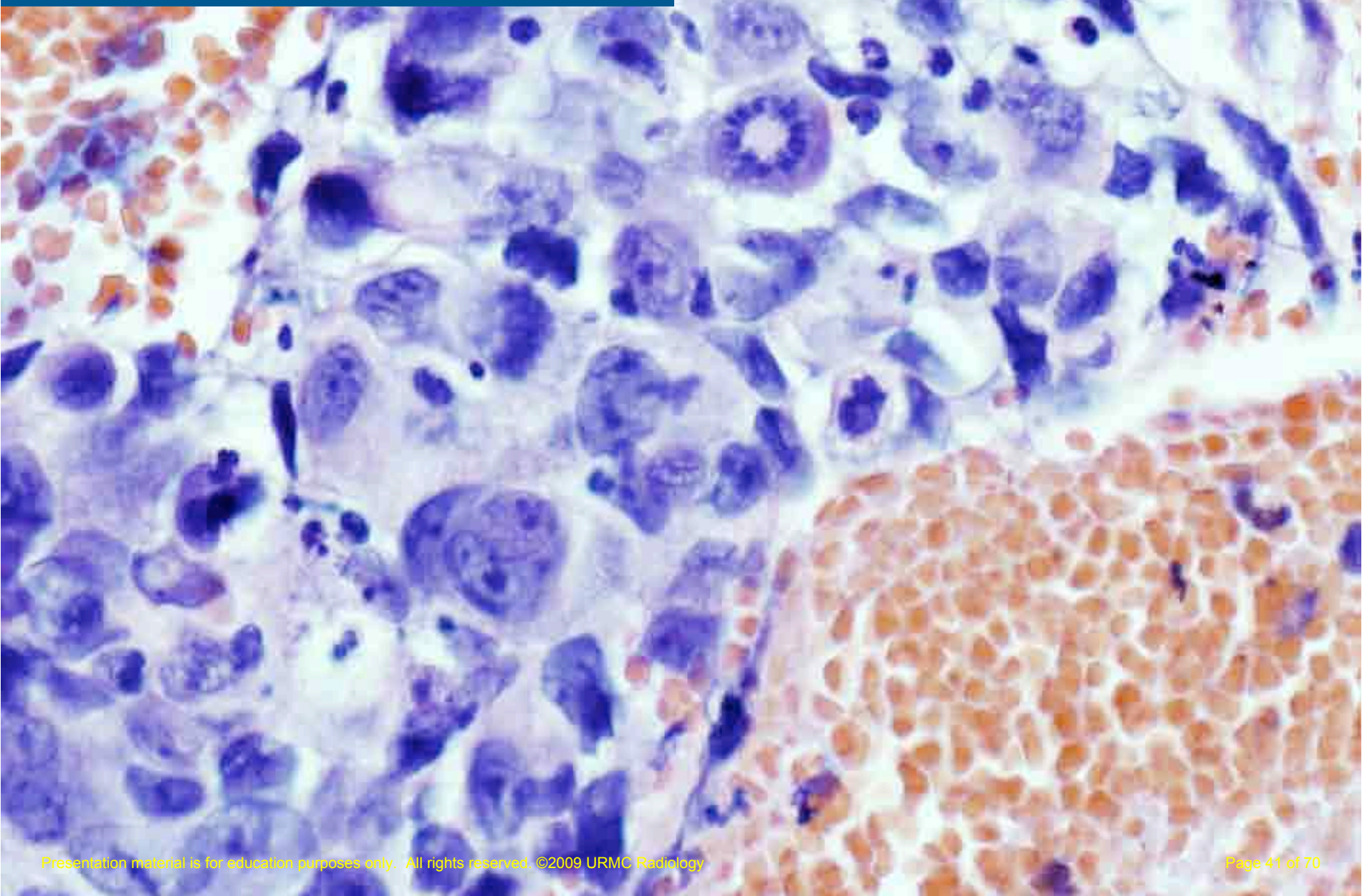


Lymph node, retroperitoneal, left  
CT-guided FNA: Cell block, H & E  
stain, 20x





Lymph node, retroperitoneal, left  
CT-guided FNA: Cell block, H & E  
stain, 40x





Lymph node, retroperitoneal, left, CT-guided fine needle aspiration:

Malignant tumor cells present derived from adenocarcinoma.

Cell block and cytologic preparations examined.

Distal esophagus and proximal stomach,  
esophagogastrectomy (status post  
neoadjuvant chemo-radiotherapy) and  
lymph nodes, left gastric excision:

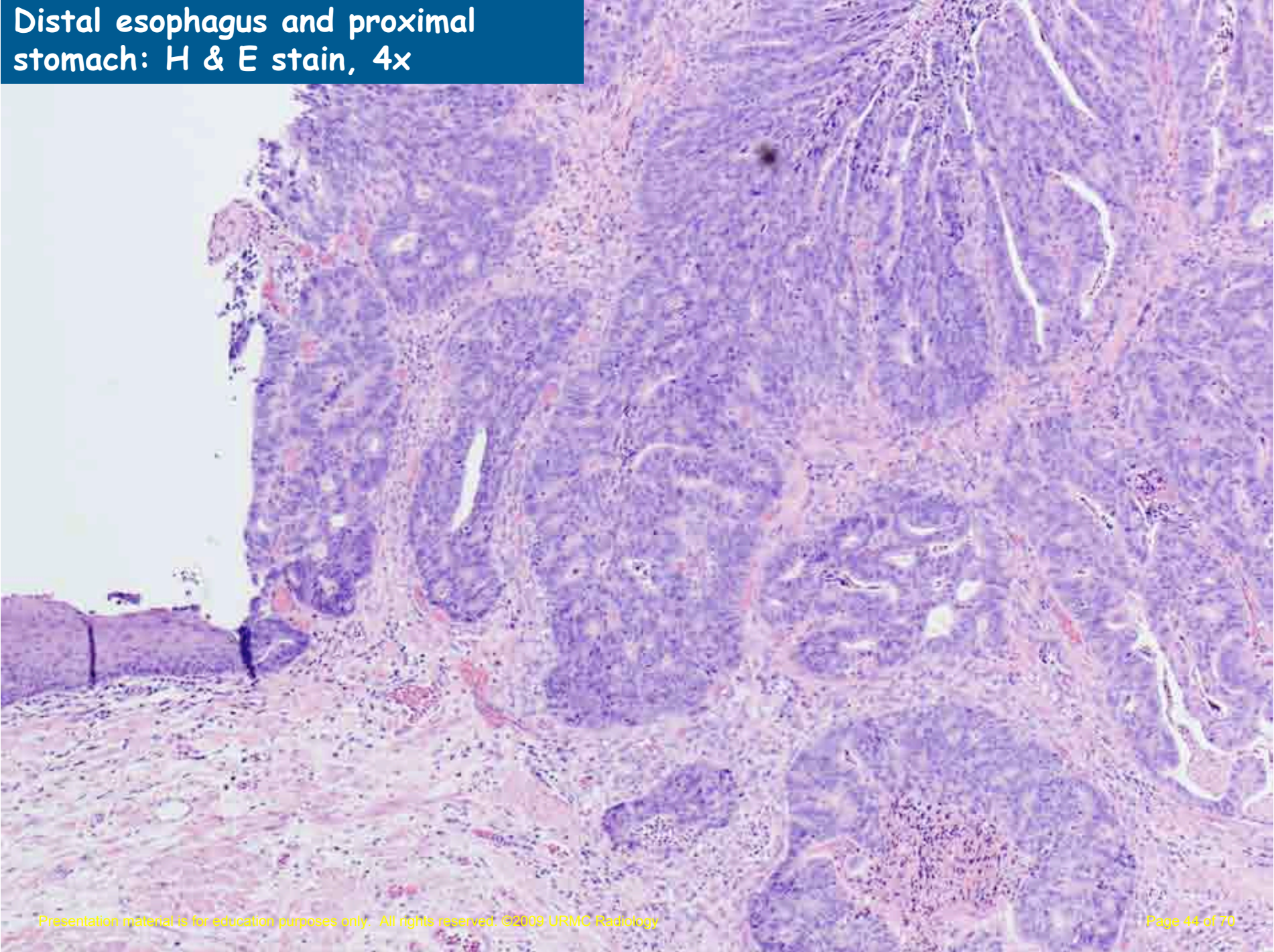
Adenocarcinoma, moderately to poorly  
differentiated.

Tumor site: Gastroesophageal junction

Tumor size: 4 x 3.2 cm

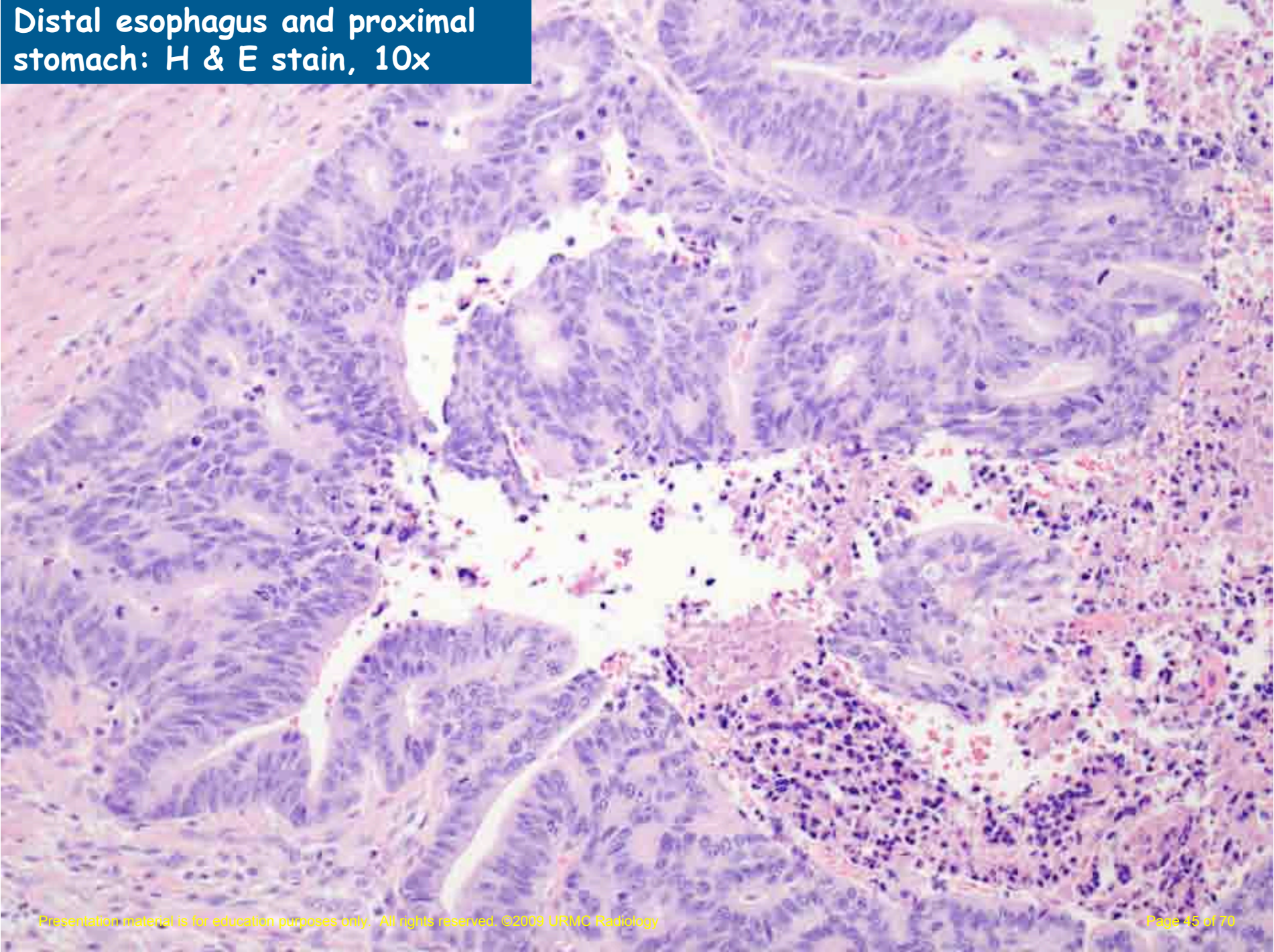
Metastatic adenocarcinoma in 1/25 lymph nodes

**Distal esophagus and proximal stomach: H & E stain, 4x**



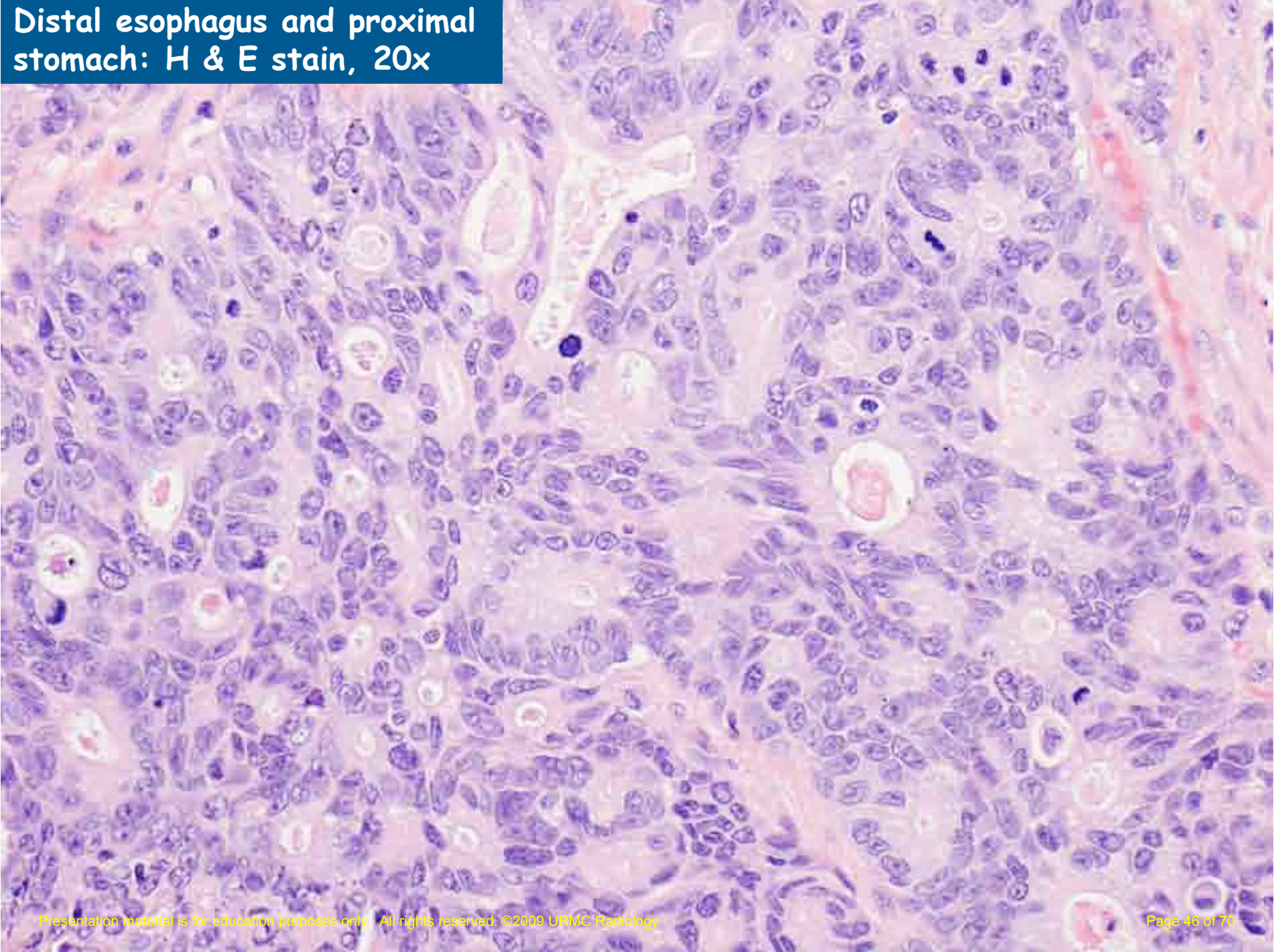


**Distal esophagus and proximal stomach: H & E stain, 10x**

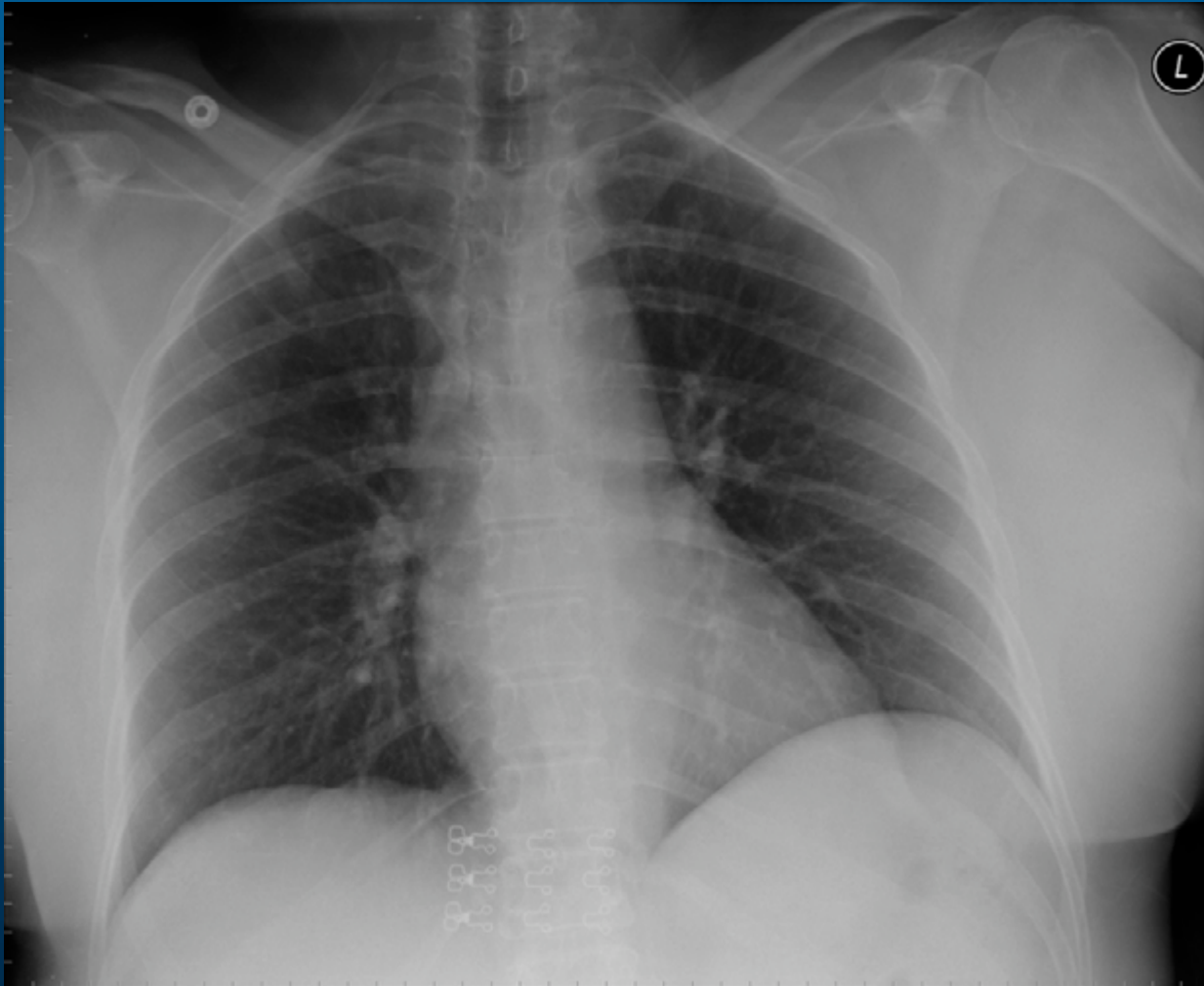




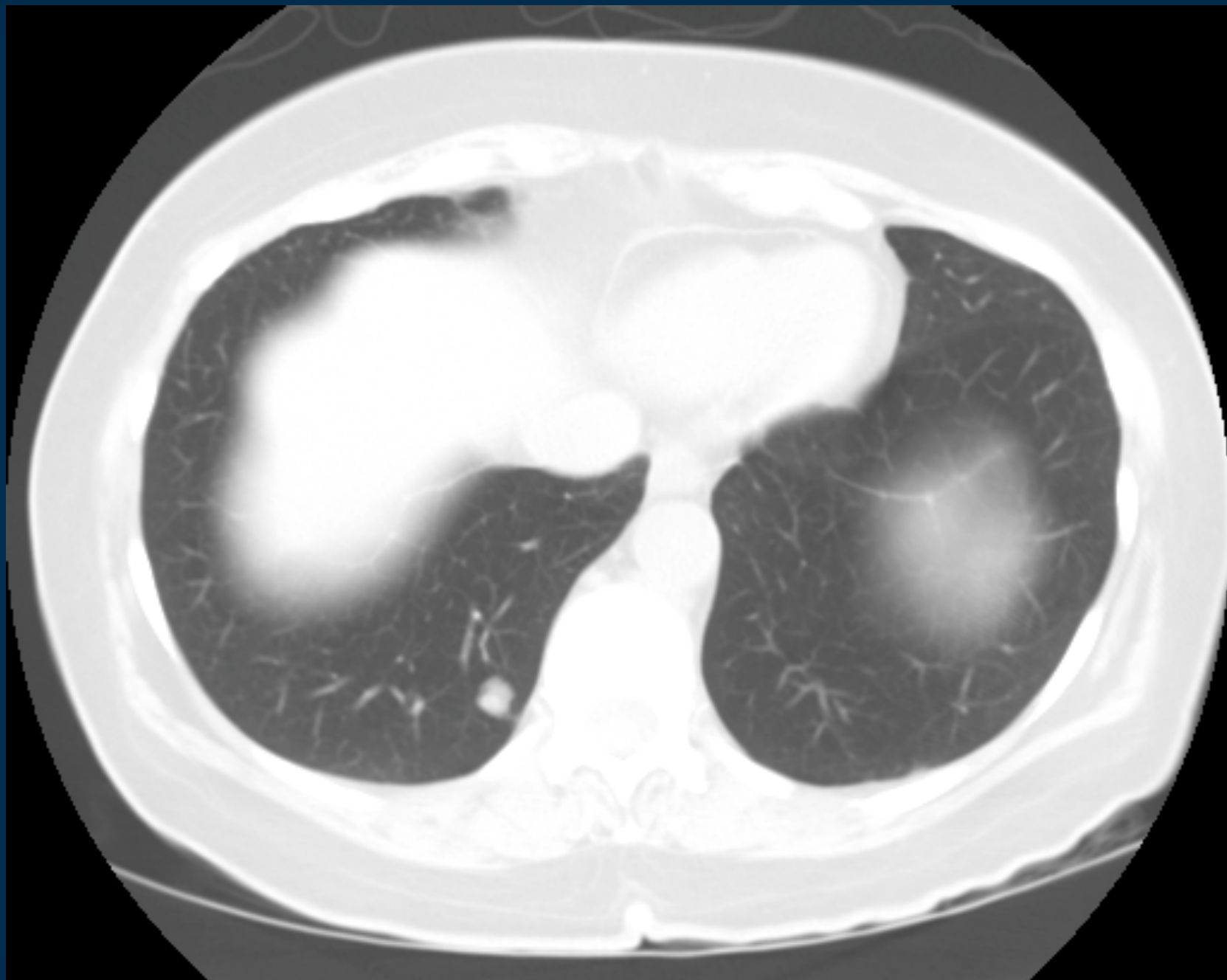
**Distal esophagus and proximal stomach: H & E stain, 20x**



## Case 4: 64-year-old female with cough and shortness of breath







# Findings:

CXR: "Negative"

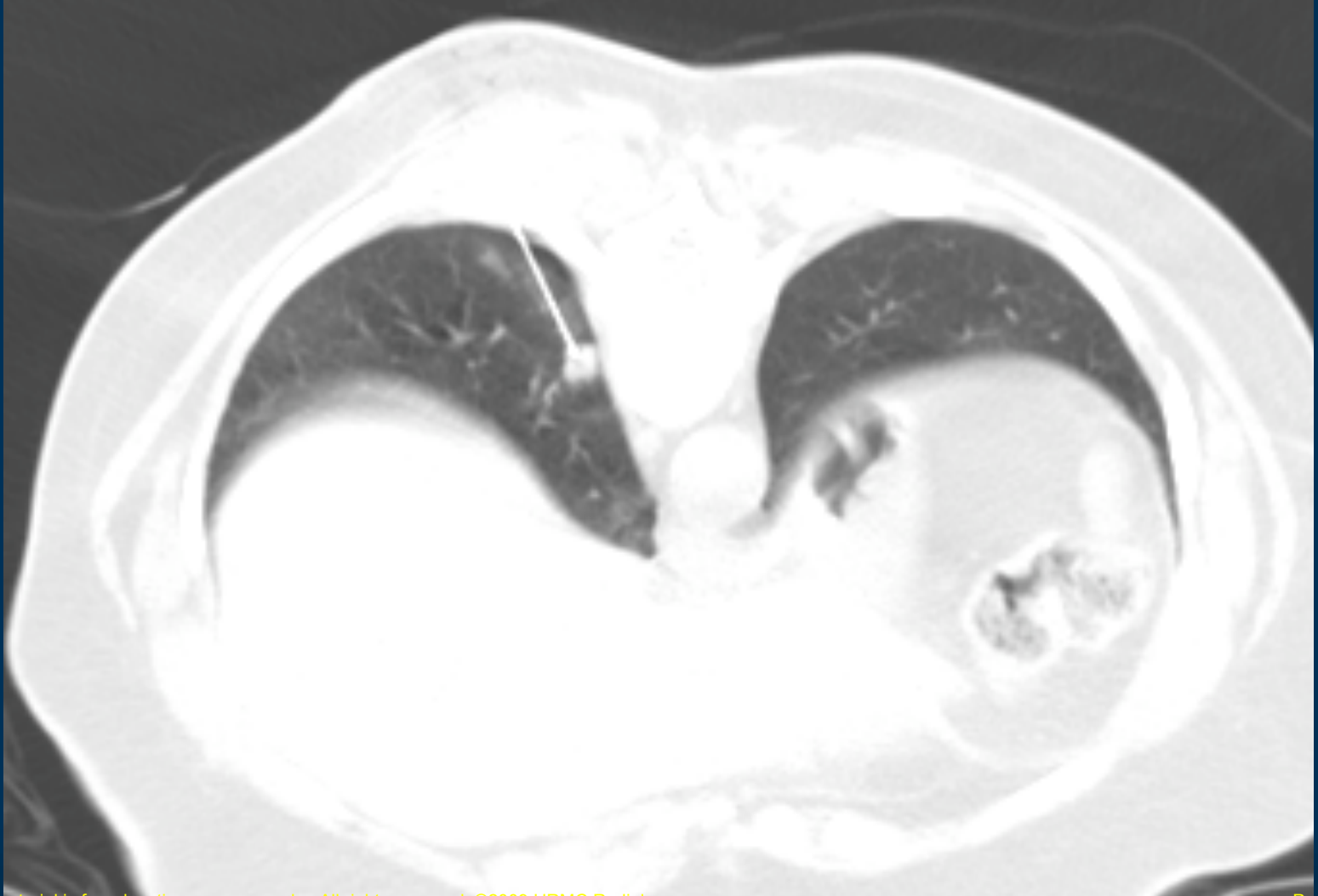
CT: Single right lower  
lobe  
pulmonary nodule

## Differential Diagnosis:

From: Winer-Muram HT.  
The Solitary Pulmonary  
Nodule. Radiology  
2006;239:34-49.

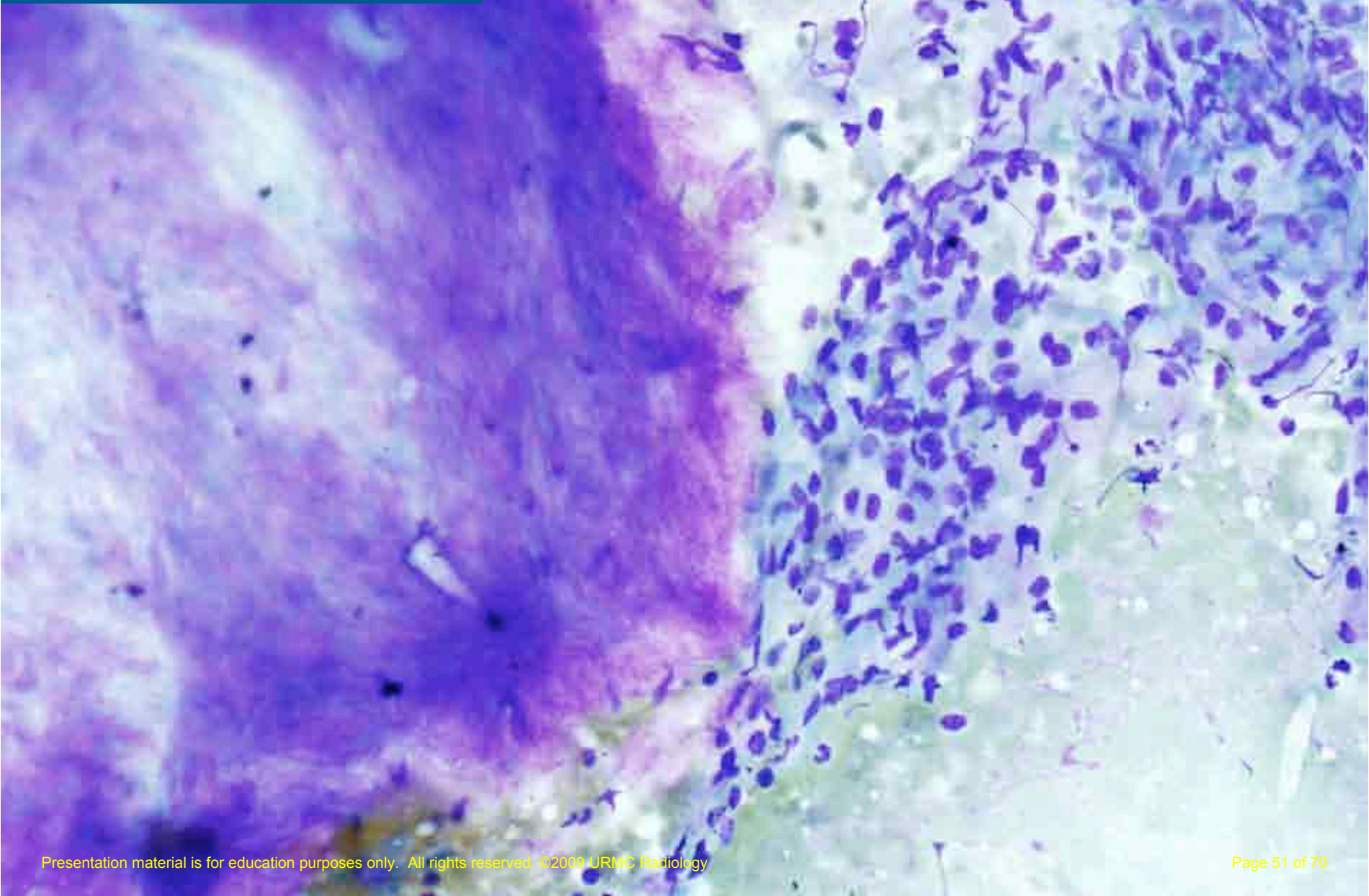
Type of Cause	Disease Entity
<b>Neoplastic</b>	
Malignant	Primary pulmonary carcinoma Adenocarcinoma, squamous cell carcinoma, bronchioloalveolar cell carcinoma, small cell carcinoma Primary pulmonary lymphoma Primary pulmonary carcinoid Solitary metastasis Melanoma, osteosarcoma, testicular cancer, breast, prostate, colon, renal cell carcinoma
Benign	Hamartoma, chondroma Arteriovenous malformation Fibroma Neural tumor (schwannoma, neurofibroma) Sclerosing hemangioma
<b>Infectious</b>	Granuloma <i>Mycobacterium tuberculosis</i> Fungal ( <i>Histoplasmosis</i> , <i>Coccidioidomycosis</i> , <i>Blastomycosis</i> , <i>Cryptococcosis</i> , <i>Aspergillosis</i> ) <i>Dirofilaria immitis</i> Bacterial ( <i>Nocardia</i> , <i>Actinomycosis</i> , round pneumonia) Measles Abscess Septic embolus
<b>Noninfectious</b>	Sarcoidosis Lipoid pneumonia Amyloid Subpleural lymph nodule Rheumatoid arthritis Wegener granulomatosis Pulmonary scar Infarct
<b>Congenital</b>	Bronchogenic cyst Bronchial atresia with mucoid impaction Sequestration
<b>Other</b>	Skin nodule Rib fracture Pleural thickening, mass or fluid

# CT-guided Lung Biopsy

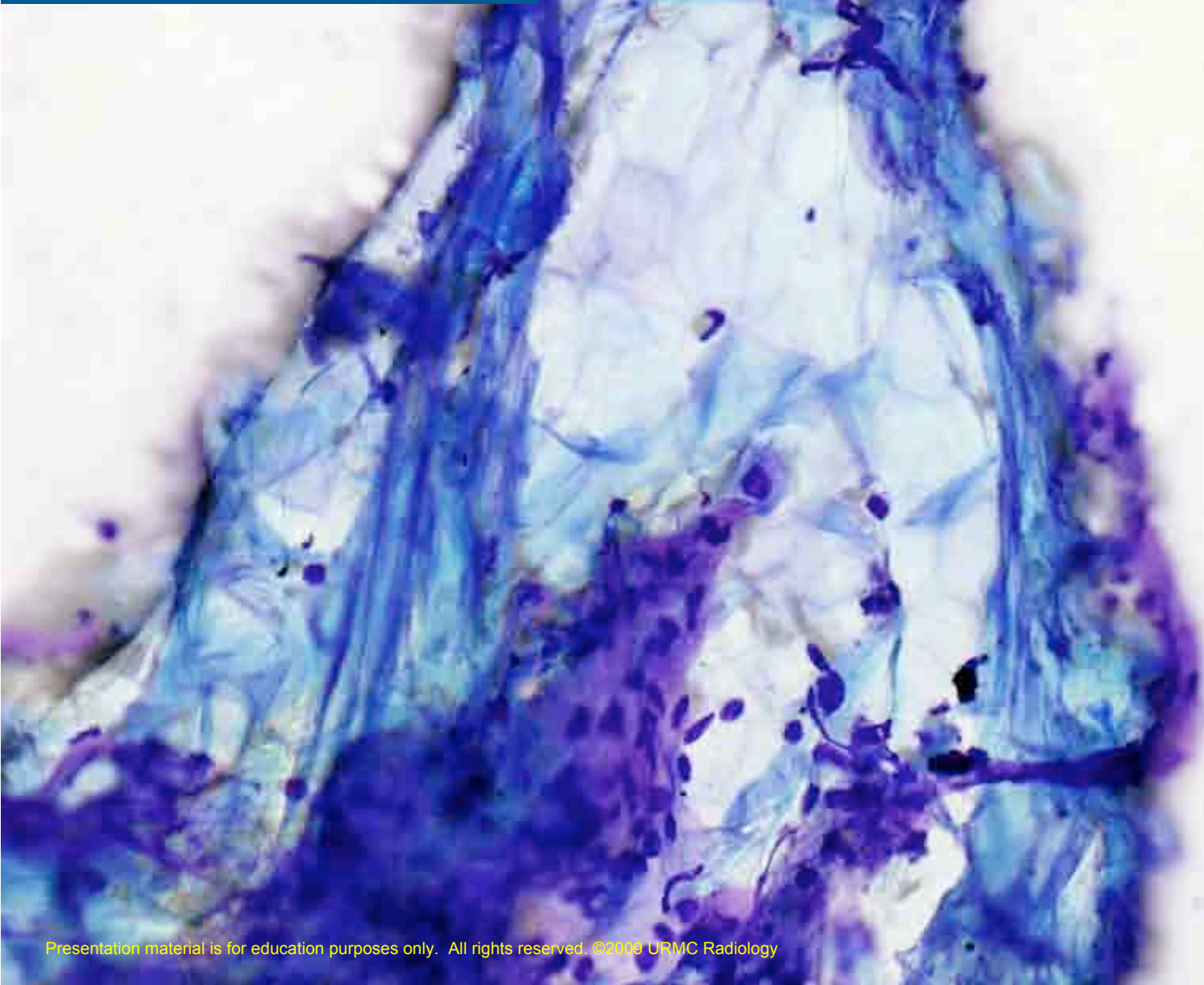




Lung, right lower lobe,  
CT-guided FNA:  
Diff-Quik stain, 20x

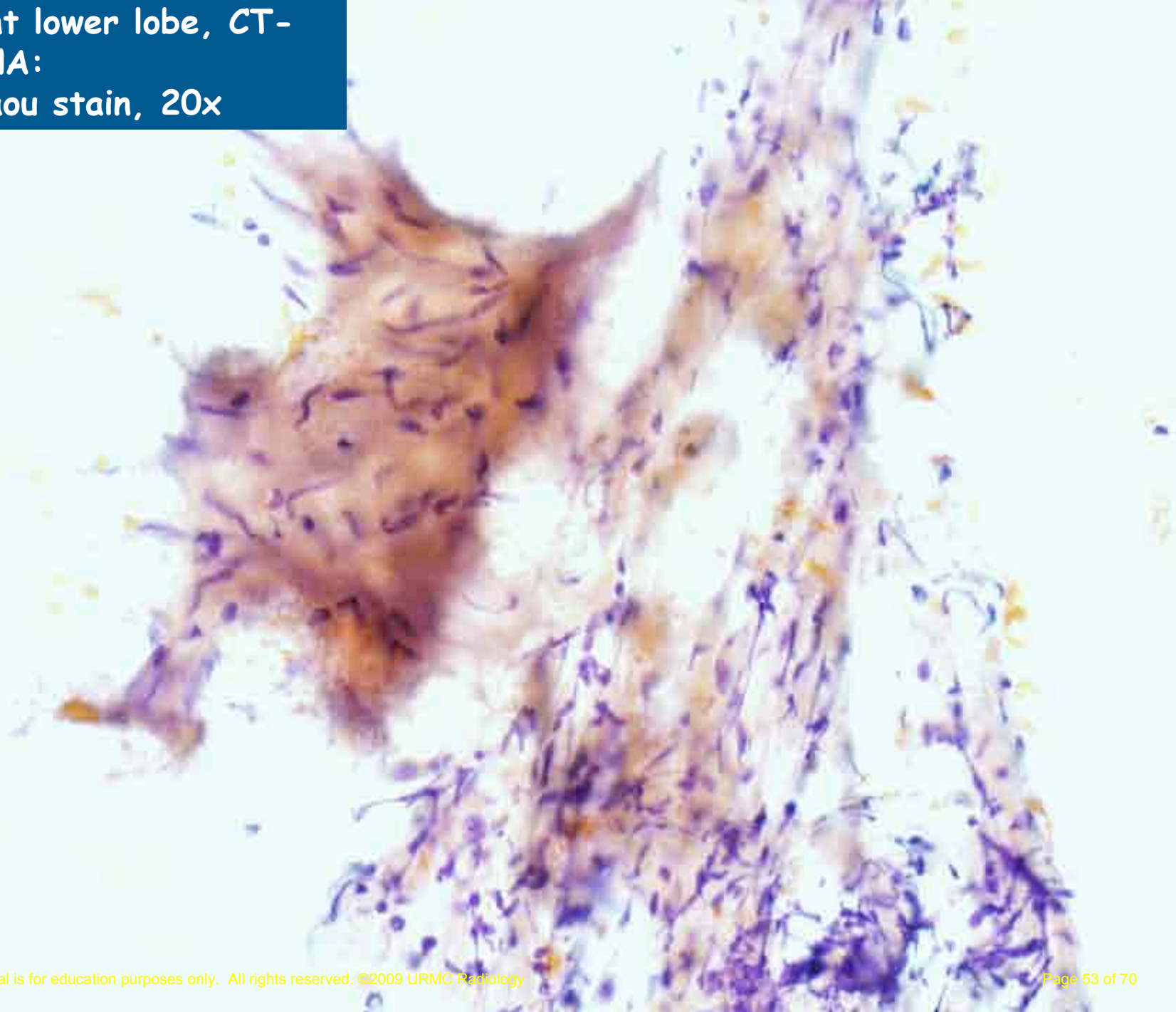


Lung, right lower lobe, CT-guided FNA:  
Diff-Quik stain, 20x



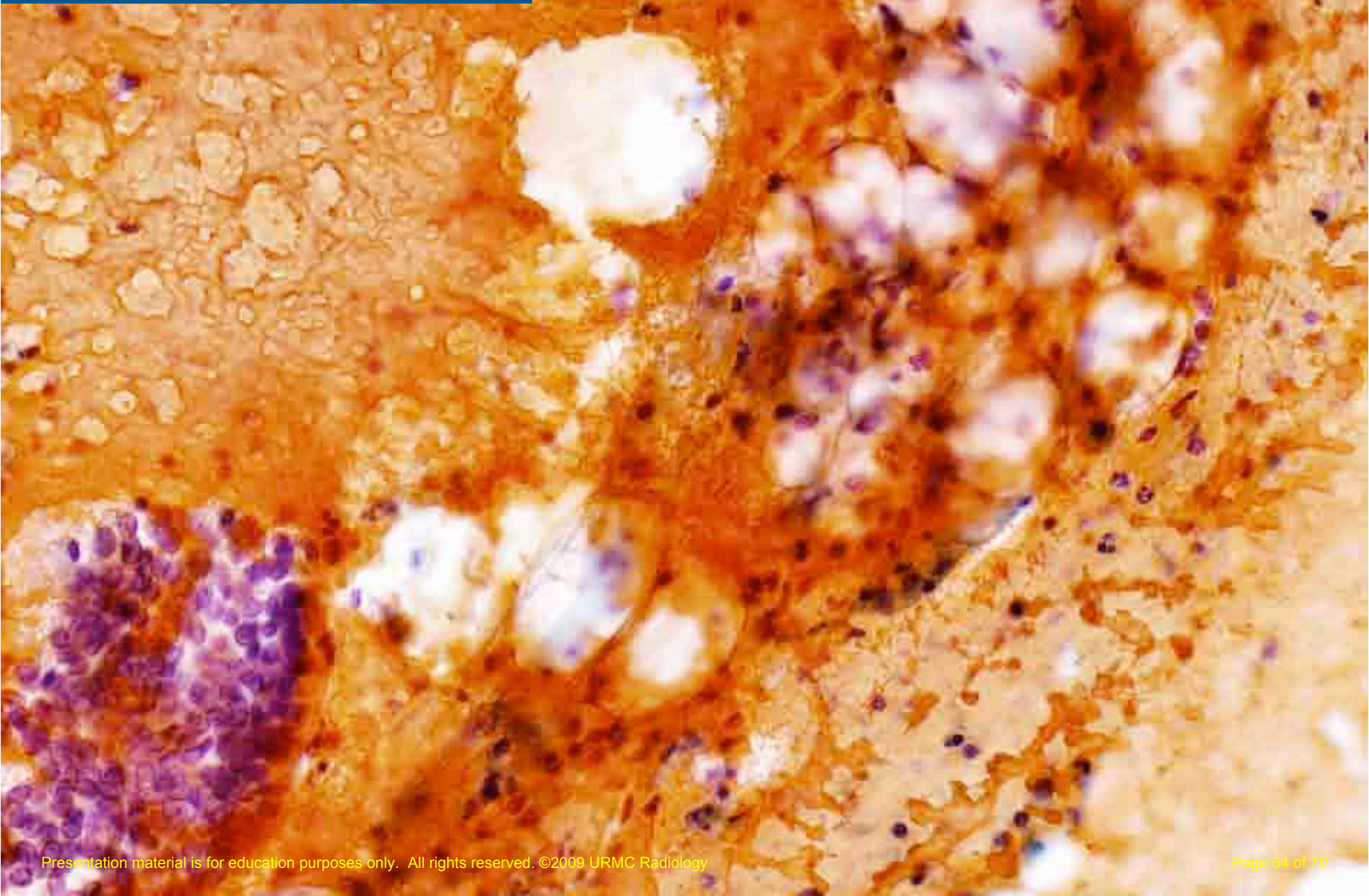


Lung, right lower lobe, CT-guided FNA:  
Papanicolaou stain, 20x



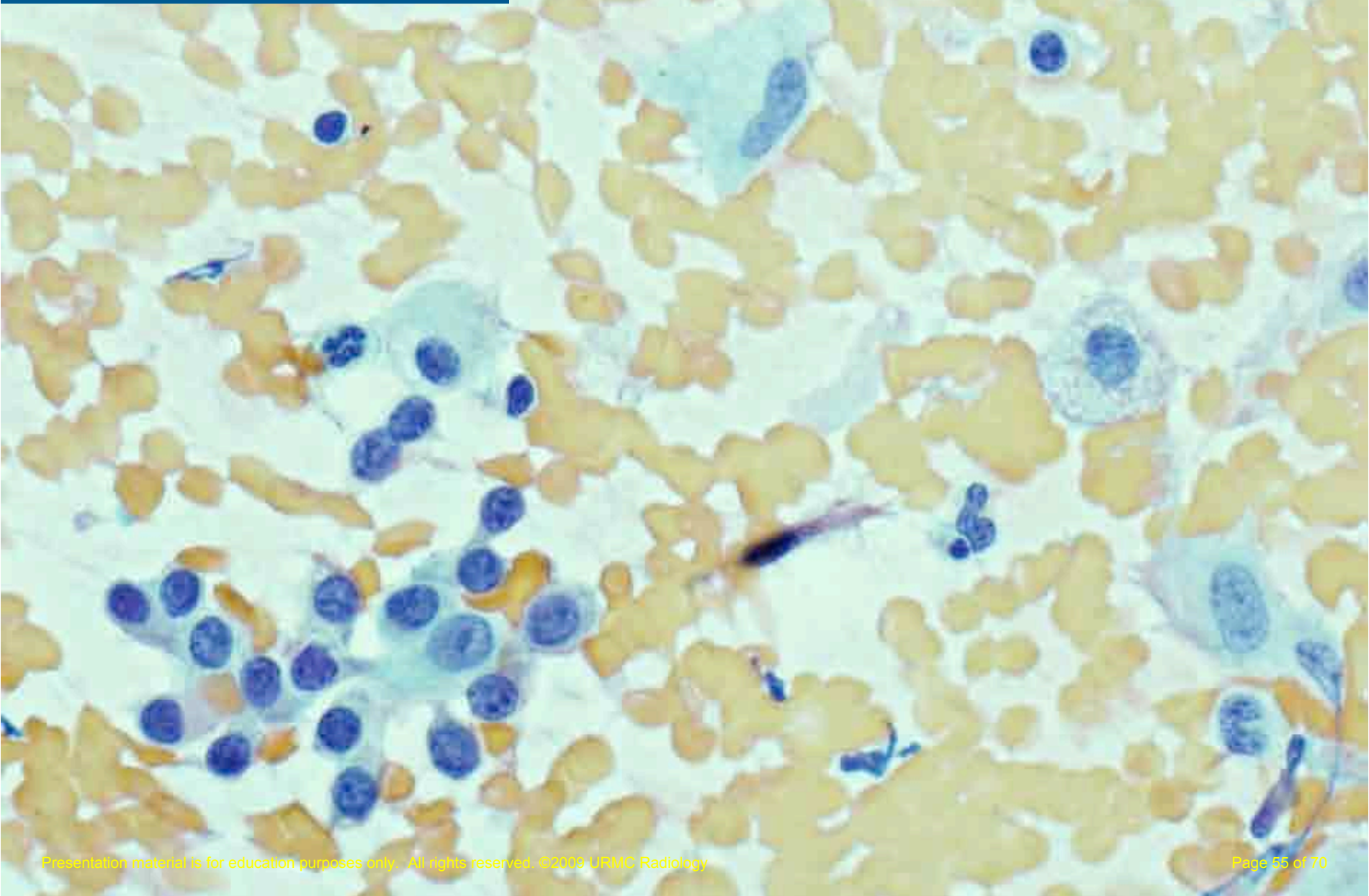


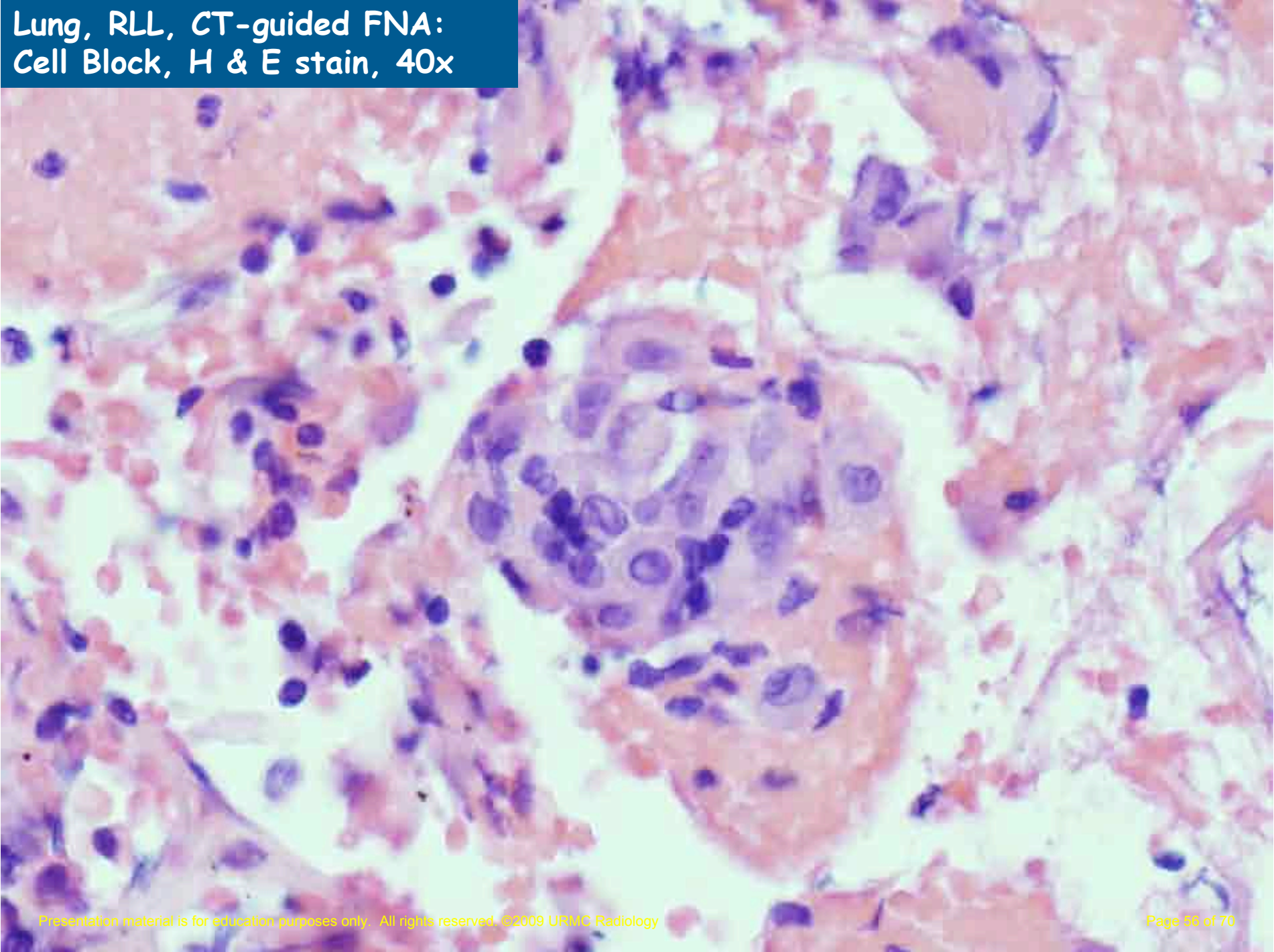
Lung, right lower lobe, CT-guided FNA:  
Papanicolaou stain, 20x





Lung, right lower lobe, CT-guided FNA:  
Papanicolaou stain, 40x







Lung, right lower lobe, CT-guided  
fine needle aspiration:

Benign epithelial cells, adipose tissue and  
fibromyxoid tissue fragments consistent with a  
hamartoma. Malignant tumor cells are not  
identified.

Cell block and cytologic preparations examined.

# Case 5: 58-year-old female with left trochanteric bursitis and status post MVC several years before





## Findings:

- Large osteolytic lesion involving the left iliac wing with areas of sclerosis
- Healing/healed fractures involving the inferior pubic rami bilaterally.

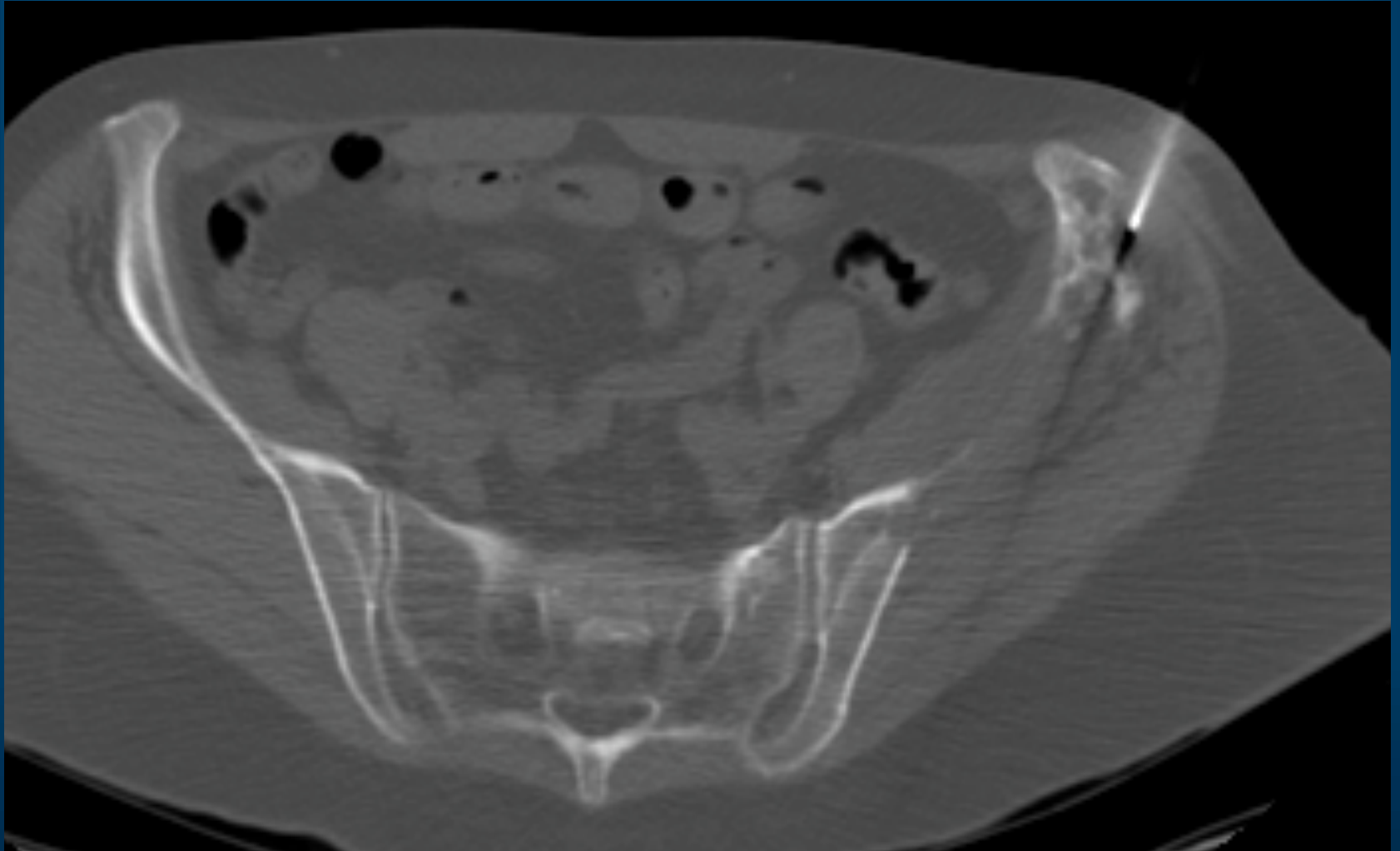
## Differential Diagnosis:

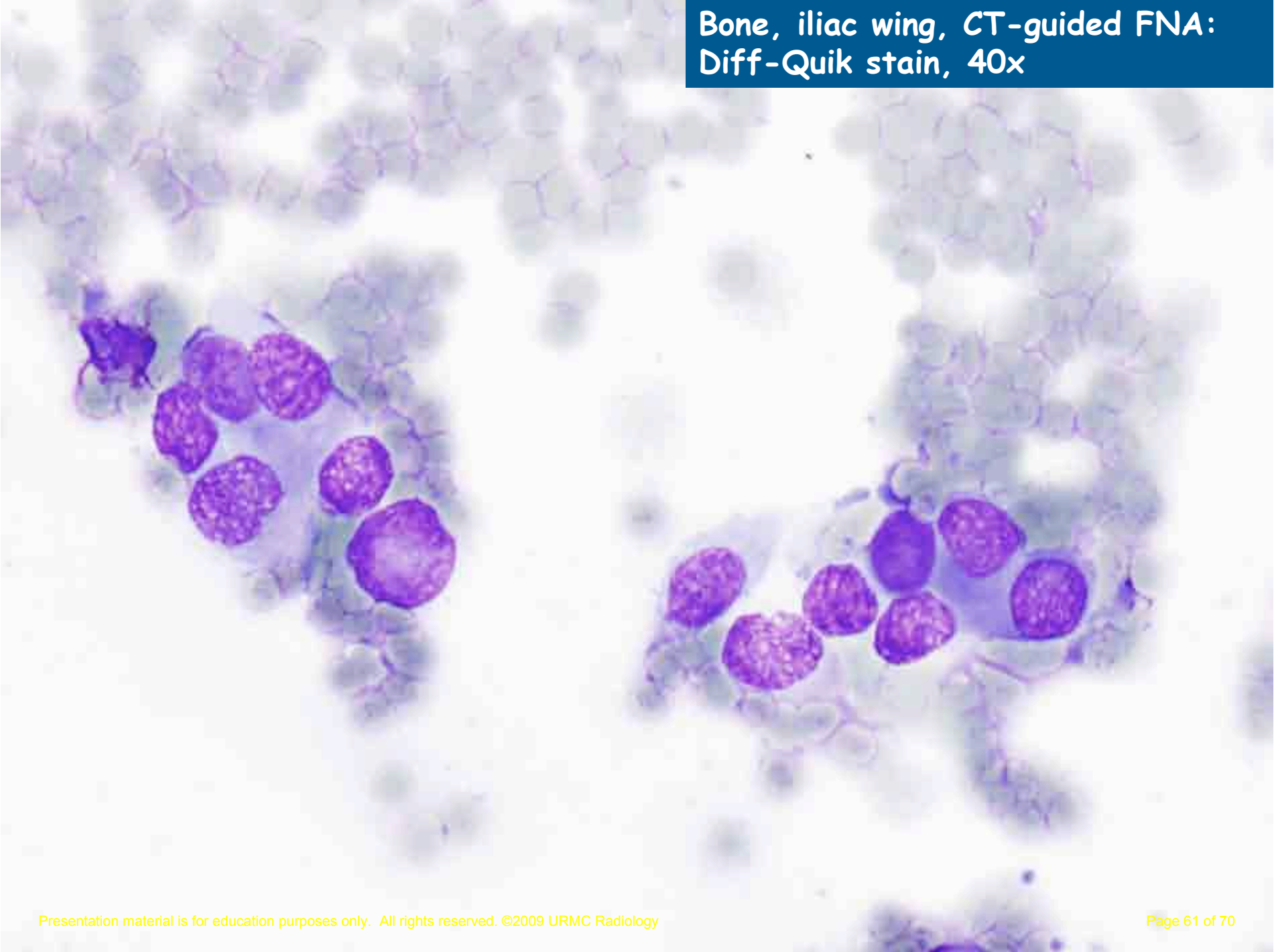
- Metastatic Lesion
- Primary Bone Tumor
- Osteomyelitis

Aneurysmal bone cyst (eccentric)  
Epidermoid inclusion cyst  
Glomus tumor  
Hemangioma (skull)  
Chondromyxoid fibroma (eccentric)  
Desmoplastic fibroma  
Osteoblastoma  
Giant cell tumor (eccentric)  
Fibrosarcoma  
Malignant fibrous histiocytoma  
Chondrosarcoma  
Osteosarcoma  
Angiosarcoma  
Plasmacytoma/multiple myeloma  
Metastases (from kidney, thyroid, lung)  
Hemophilic pseudotumor

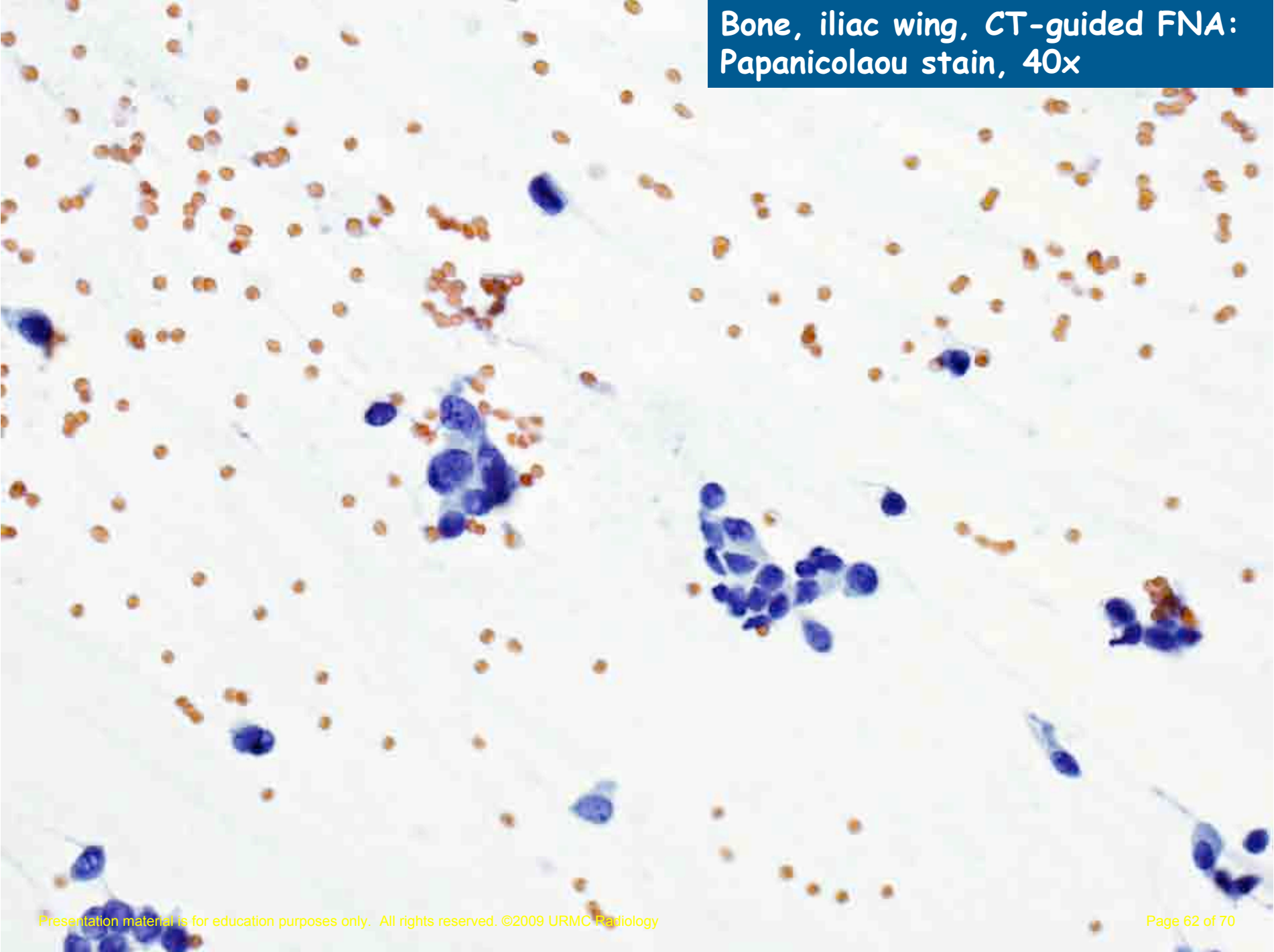
From: Francis A.  
Burgener, Martti  
Kormano, Tomi Pudas.  
Differential diagnosis in  
conventional radiology.  
Thieme. 3rd Edition.  
page 80.

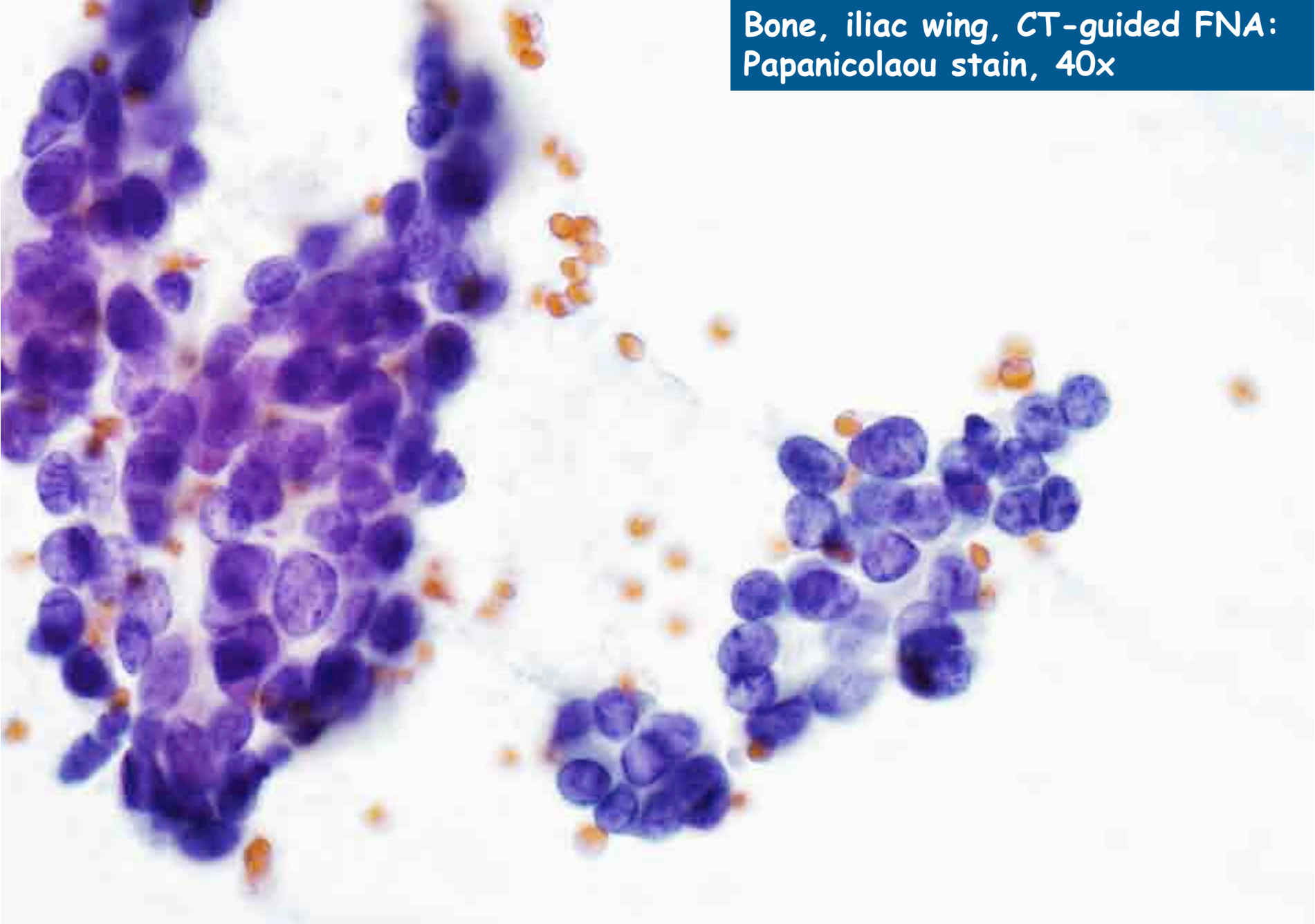
# CT-guided Bone Biopsy





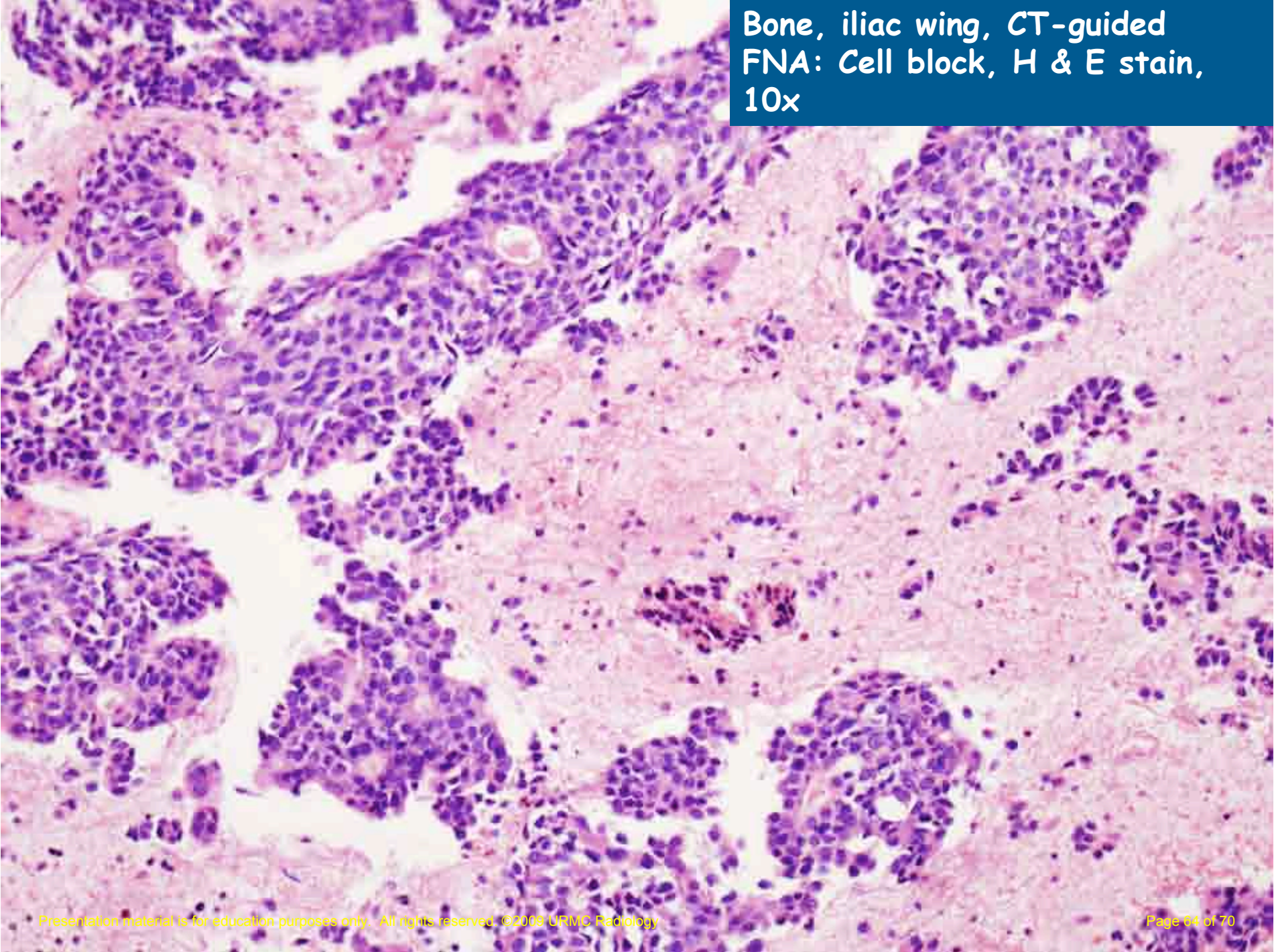




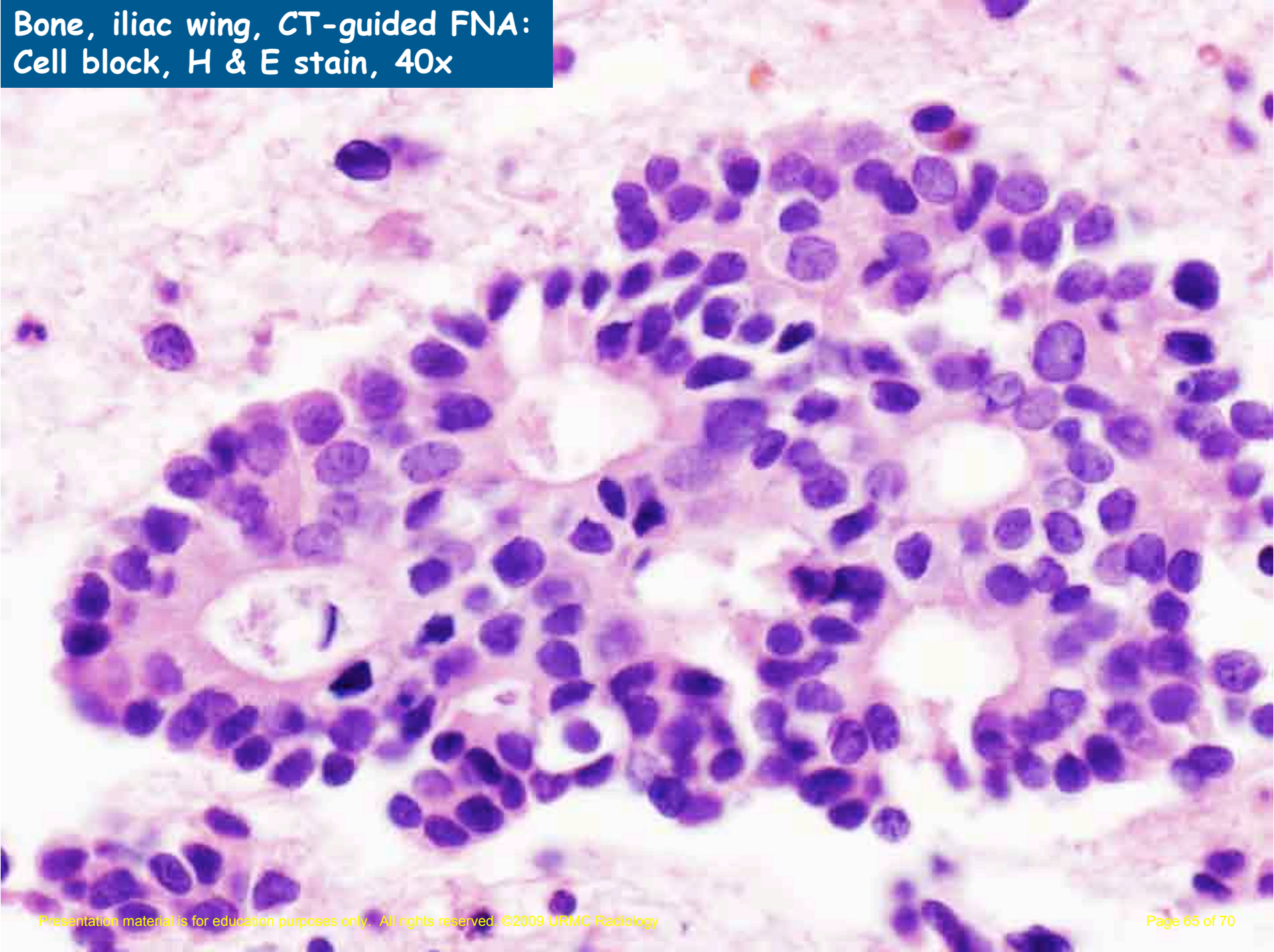




**Bone, iliac wing, CT-guided  
FNA: Cell block, H & E stain,  
10x**







Bone, iliac wing, CT-guided fine  
needle aspiration:

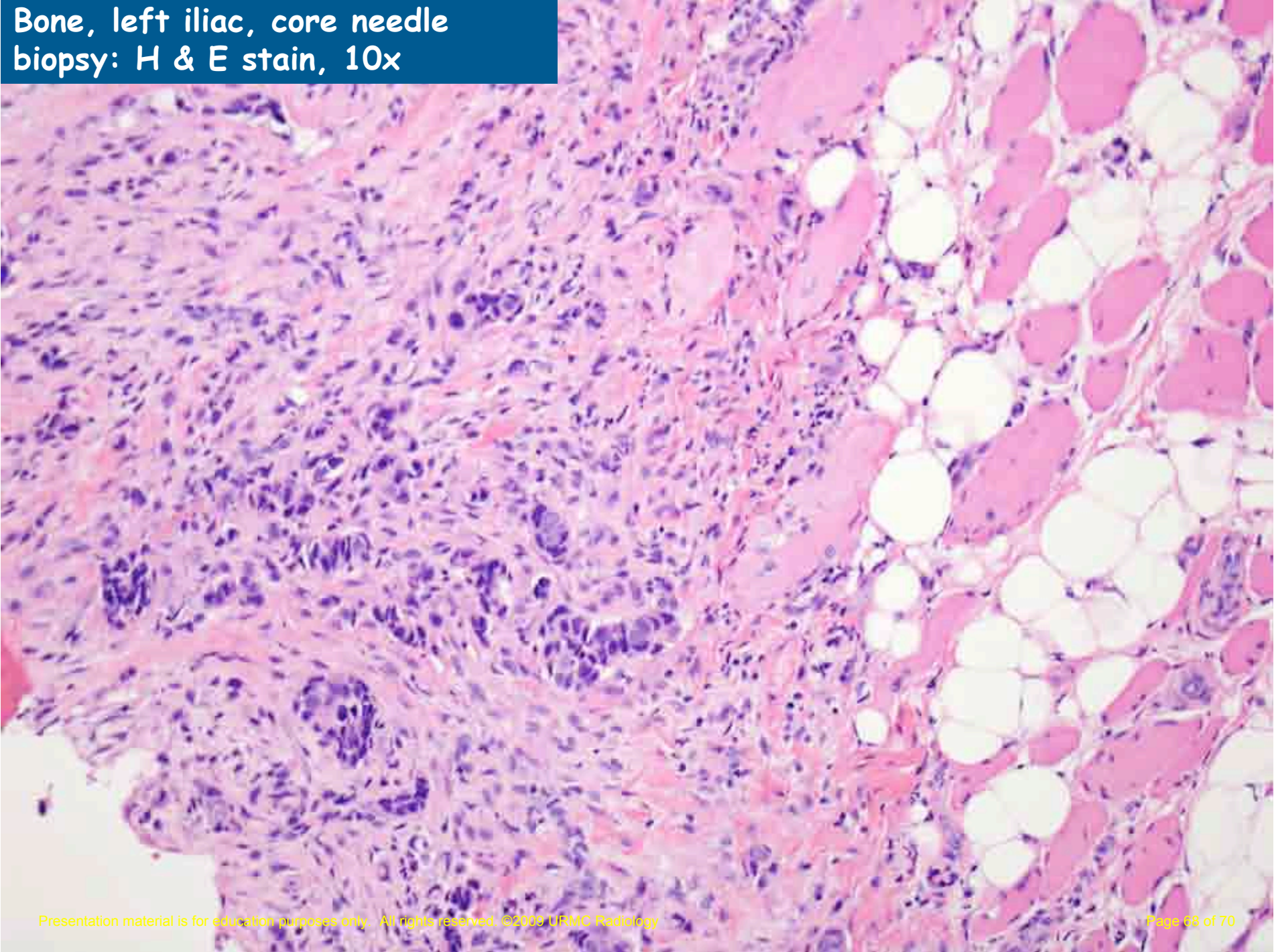
Malignant tumor cells present derived from  
adenocarcinoma.

Bone, left iliac, core needle biopsy:

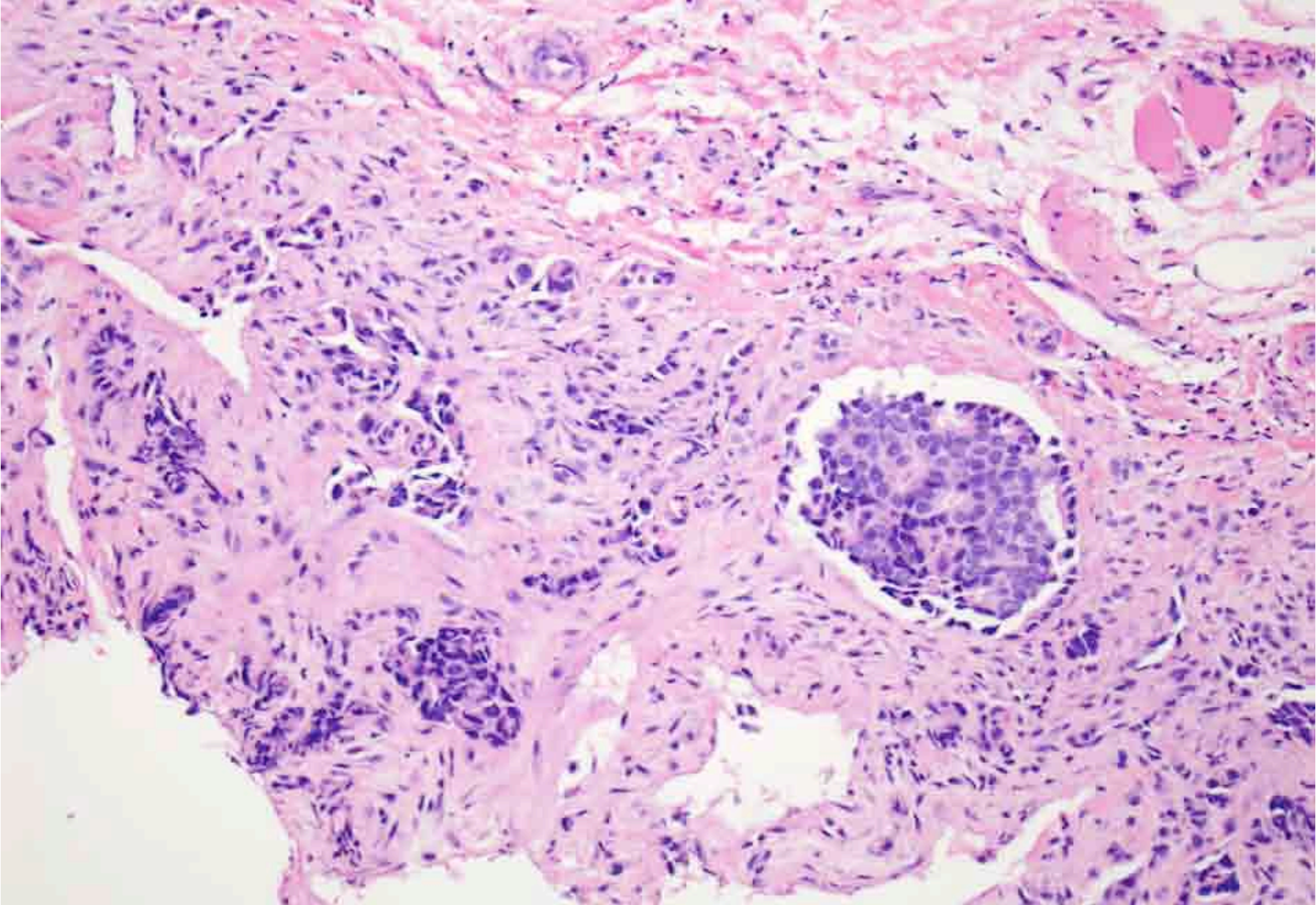
Metastatic carcinoma, consistent with breast primary.



**Bone, left iliac, core needle biopsy: H & E stain, 10x**



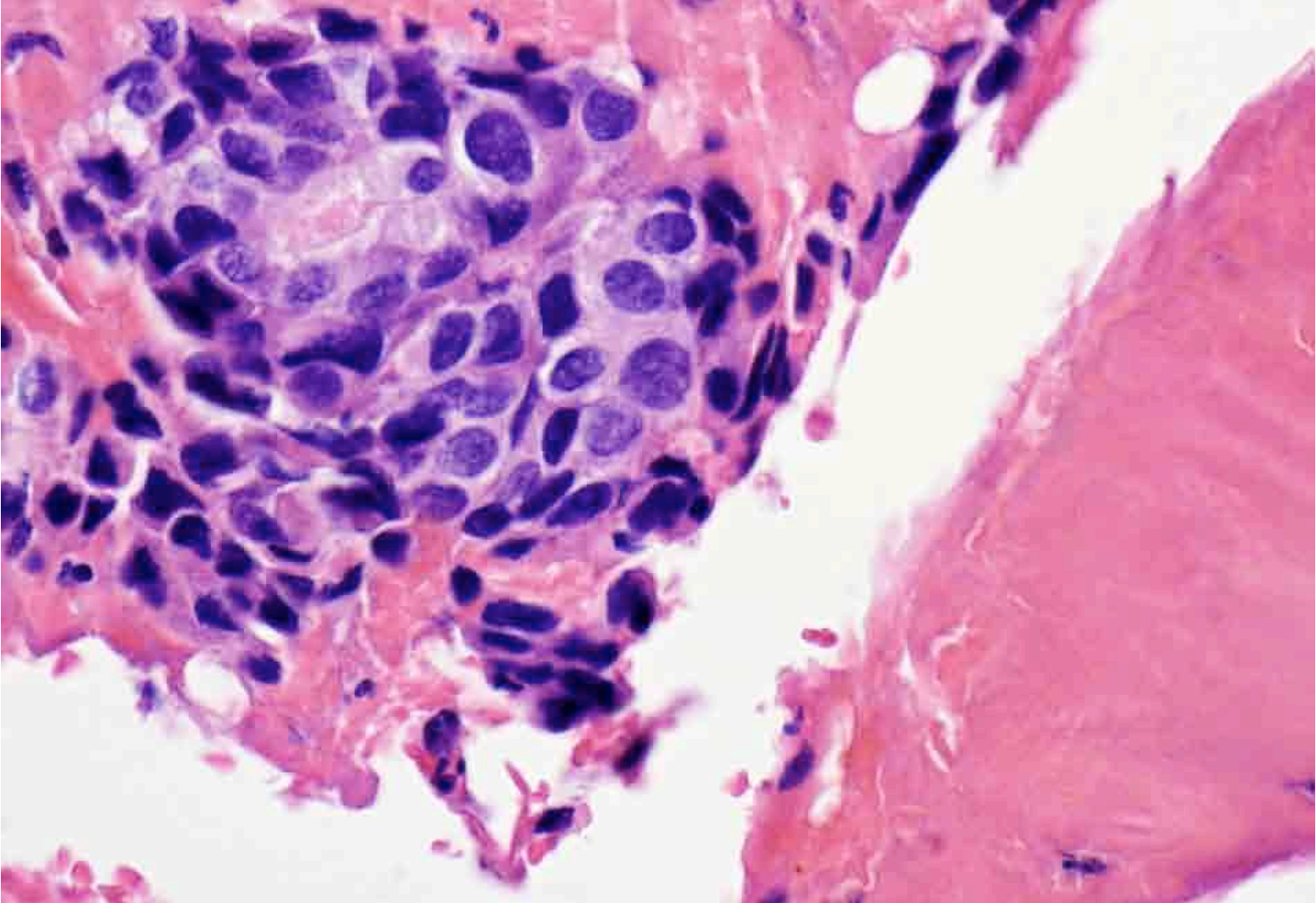




**Bone, left iliac, core needle biopsy: H & E stain, 10x**

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**Bone, left iliac, core needle biopsy: H & E stain, 40x**

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