Radiology-Pathology Conference

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Case 1: 23-year-old female who fell on her knee
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, chomdromyxofibroma)
CT-guided Bone Biopsy
Bone, femoral head/neck, left, CT-guided FNA: Diff-Quik stain, 20x
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, core biopsy: H & E stain, 40x
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
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:


<table>
<thead>
<tr>
<th>Type of Cause</th>
<th>Disease Entity</th>
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<tbody>
<tr>
<td><strong>Neoplastic</strong></td>
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<tr>
<td>Malignant</td>
<td>Primary pulmonary carcinoma</td>
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<td></td>
<td>Adenocarcinoma, squamous cell carcinoma, bronchioloalveolar cell carcinoma, small cell carcinoma</td>
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<td>Primary pulmonary lymphoma</td>
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<td>Primary pulmonary carcinoid</td>
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<td>Solitary metastasis</td>
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<td>Melanoma, osteosarcoma, testicular cancer, breast, prostate, colon, renal cell carcinoma</td>
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<td>Benign</td>
<td>Hamartoma, chondroma</td>
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<td>Arteriovenous malformation</td>
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<td>Fibroma</td>
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<td>Neural tumor (schwannoma, neurofibroma)</td>
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<td>Sclerosing hemangioma</td>
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<td><strong>Infectious</strong></td>
<td>Granuloma</td>
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<td>Mycobacterium tuberculosis</td>
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<td></td>
<td>Fungal (Histoplasmosis, Coccidioidomycosis, Blastomycosis, Cryptococcosis, Aspergillosis)</td>
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<td>Dirofilaria immitus</td>
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<td>Bacterial (Nocardia, Actinomycosis, round pneumonia)</td>
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<td>Measles</td>
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<td>Septic embolus</td>
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<td><strong>Noninfectious</strong></td>
<td>Sarcoidosis</td>
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<td>Lipoid pneumonia</td>
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<td>Amyloid</td>
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<td>Subpleural lymph nodule</td>
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<td>Rheumatoid arthritis</td>
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<td>Wegener granulomatosis</td>
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<td>Pulmonary scar</td>
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<td>Infarct</td>
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<td><strong>Congenital</strong></td>
<td>Bronchogenic cyst</td>
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<td>Bronchial atresia with mucoid Impaction</td>
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<td>Sequestration</td>
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<td><strong>Other</strong></td>
<td>Skin nodule</td>
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<td>Rib fracture</td>
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<td>Pleural thickening, mass or fluid</td>
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CT-guided Lung Biopsy
Lung, right lower lobe, CT-guided FNA: Diff-Quik stain, 20x
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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

CT-guided Bone Biopsy
Bone, iliac wing, CT-guided FNA: Diff-Quik stain, 40x
Bone, iliac wing, CT-guided FNA: Papanicolaou stain, 40x
Bone, iliac wing, CT-guided FNA: Cell block, H & E stain, 10x
Bone, iliac wing, CT-guided FNA:
Cell block, H & E stain, 40x
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
Bone, left iliac, core needle biopsy: H & E stain, 40x