

Primary Pulmonary Meningioma Mimicking Lung Metastases

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Primary Pulmonary Meningioma Mimicking Lung Cancer

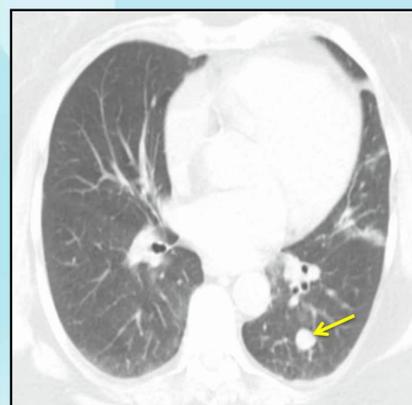
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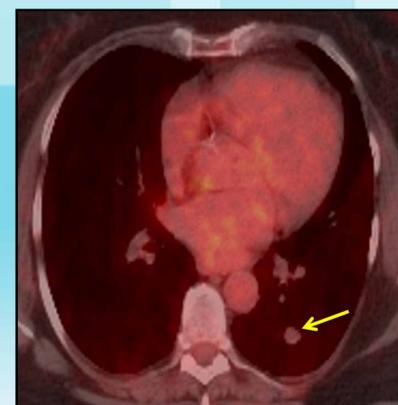
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CASE

- A 67 year old never-smoker female presented with lower extremity edema.
- Computerized tomography (CT) scan of chest, abdomen and pelvis showed an incidental finding of 1.4 cm well circumscribed non calcified left lower lobe pulmonary nodule with numerous tiny bilateral non calcified nodules.
- 18-F fluorodeoxyglucose positron emission tomography (FDG-PET) showed mild uptake (SUV 1.5) in the posterior left lower lobe pulmonary nodule.
- No hypermetabolic mediastinal or hilar adenopathy seen.
- Patient underwent left lower lobectomy with mediastinal lymph node dissection.



CT scan showing left lower lobe lesion.



Fused PET/CT showing mild avidity.

DIAGNOSIS

Patient underwent gadolinium enhanced magnetic resonance imaging (MRI) of the brain and spinal cord with no evidence of primary meningioma.

FINAL DIAGNOSIS

Benign (Grade 1), Primary Pulmonary Meningioma

Primary Pulmonary Meningioma - A Very Rare Tumor

Epidemiology - Extra-cranial/spinal meningioma is rare and usually involves head and neck region. Primary pulmonary meningioma is even rarer with only 40 cases reported to date.

Pathologic Behavior - These are mostly benign in nature with an exception of 3 cases, which were deemed malignant based on high mitotic activity, necrosis, lymph node or distant metastases. The histologic origin of these tumors is uncertain and pluripotent sub-pleural mesenchymal cells remains a possibility.

Clinical Behavior - These tumors are mostly detected incidentally and in contrast with the meningioma of the central nervous system, rarely cause any compressive symptoms.

Prognosis & Management - Benign lesions: Excellent prognosis. Atypical lesions- not much known. Surgical resection is the mainstay of treatment. Frozen section important to ensure clear margins.

Differentials - Primary and metastatic spindle and clear cell tumors of lung, pulmonary metastases and solitary fibrous tumor of the pleura.

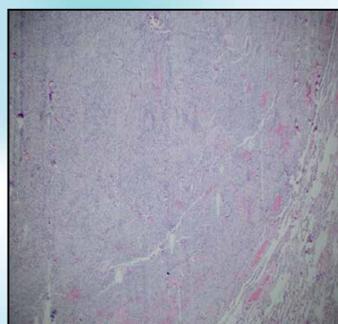
PATHOLOGY

Gross/Morphology

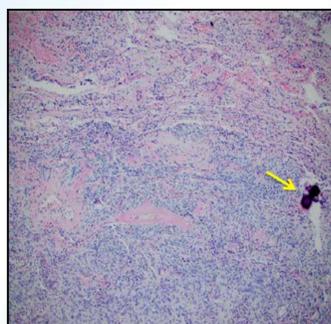
- Numerous minute meningotheial-like nodules ranging from 0.4-1cm dispersed throughout the left lower lobe
- The sections showed a spindle cell neoplasm with psammoma bodies without necrosis and cytologic atypia
- All sampled lymph nodes were benign and surgical margins were clear of the disease process

Immunohistochemistry

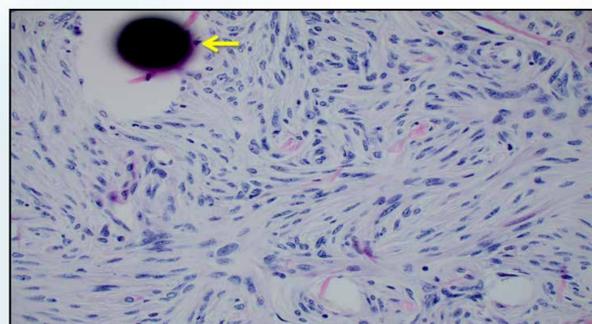
- Positive for vimentin and epithelial membrane antigen (EMA)
- Weakly positive for estrogen receptor (ER)
- Negative for cytokeratin AE1/AE3, PAX-8, S-100 protein, CD117, OCT-2, glial fibrillary acidic protein (GFAP), desmin and smooth muscle actin (SMA)
- Ki-67 stained less than 5% of tumor cells



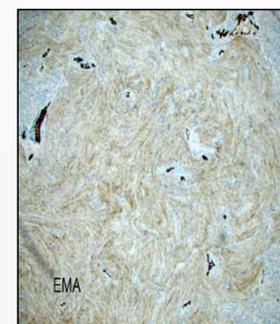
Pulmonary Meningioma low power (10x) with surrounding lung.



Low power view of Psammoma body within meningioma.



Psammoma bodes are concentric lamellated calcified structures most commonly seen in meningiomas, papillary carcinoma of thyroid and serous ovarian cystadenocarcinoma and represent infarction and calcification within a tumor.



Low power view of positive staining pattern with EMA and Vimentin.



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