Radiological and pathological evaluation of pulmonary nodules

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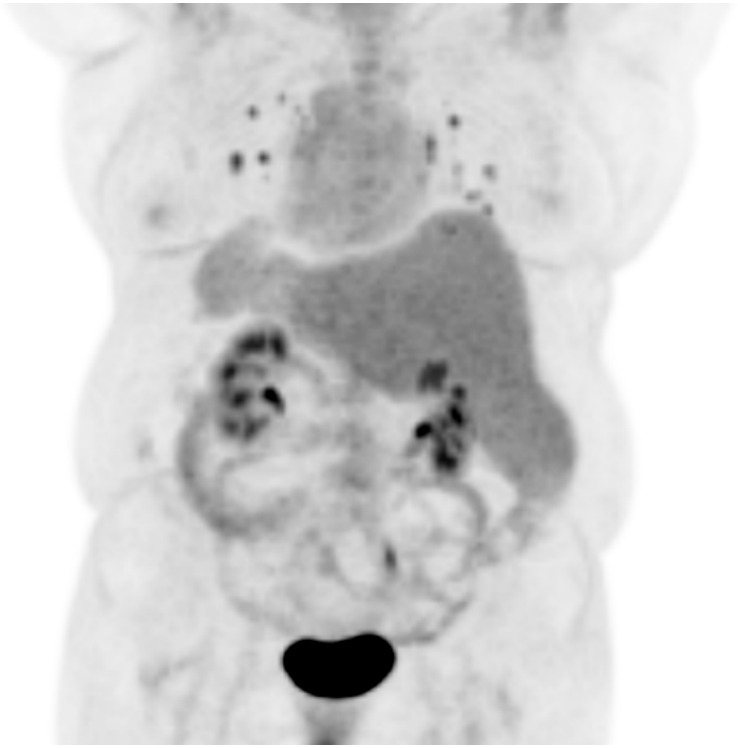
01/17/19

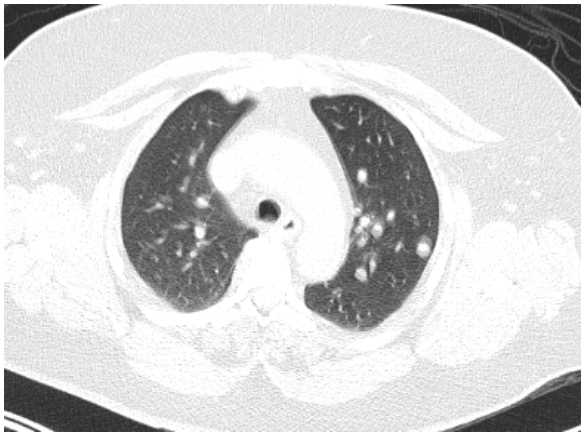
EC, 59 yo F

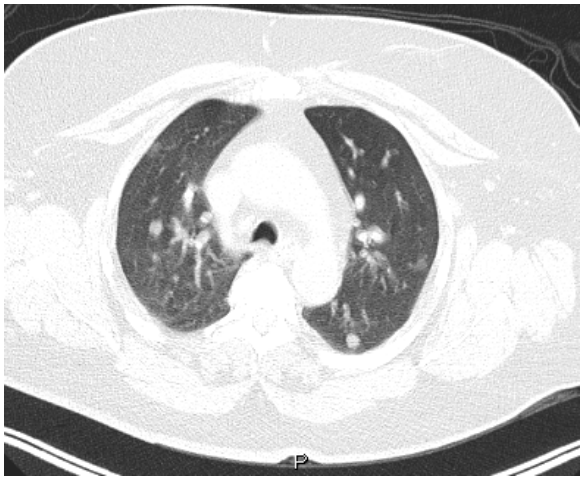
- History of recurrent stage IIB cervical cancer
  - 6/2014: US revealed soft tissue mass within cervix. Biopsy revealed endocervical adenosquamous carcinoma
  - 10/2014: Underwent chemoradiation and brachytherapy w/ good response
  - 11/2015: CT demonstrates right external iliac vein mass; metastatic poorly differentiated carcinoma on biopsy
  - 4/2016: Chemotherapy and localized radiation with no residual disease on follow-up imaging in 9/2016

PET/CT Results – 1/7/2019



PET/CT Results – 1/7/2019



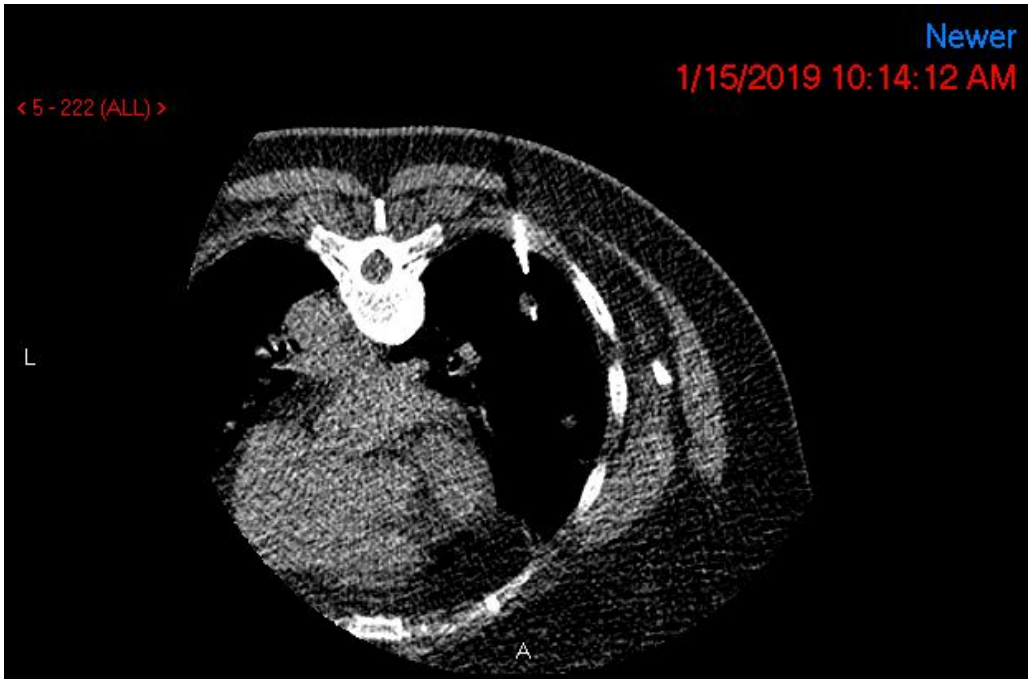


Differential – Multiple Pulmonary Nodules

- Metastatic malignancy - solid
  - Tend toward lung bases
  - Round with distinct borders
  - Can be subpleural in location
- Malignant – lymphoma
  - Lower lobes
  - Halo of ground glass
  - Occasional air bronchograms
- Infectious
  - More likely in immunocompromised host
  - No specific area of lung
  - Often have surrounding ground glass, can be cavitary
- Auto-immune/inflammatory conditions
  - Frequently associated with areas of consolidation
  - Can also be cavitary
- Pulmonary AVMS
  - Well demarcated
  - Preference for lower lobes

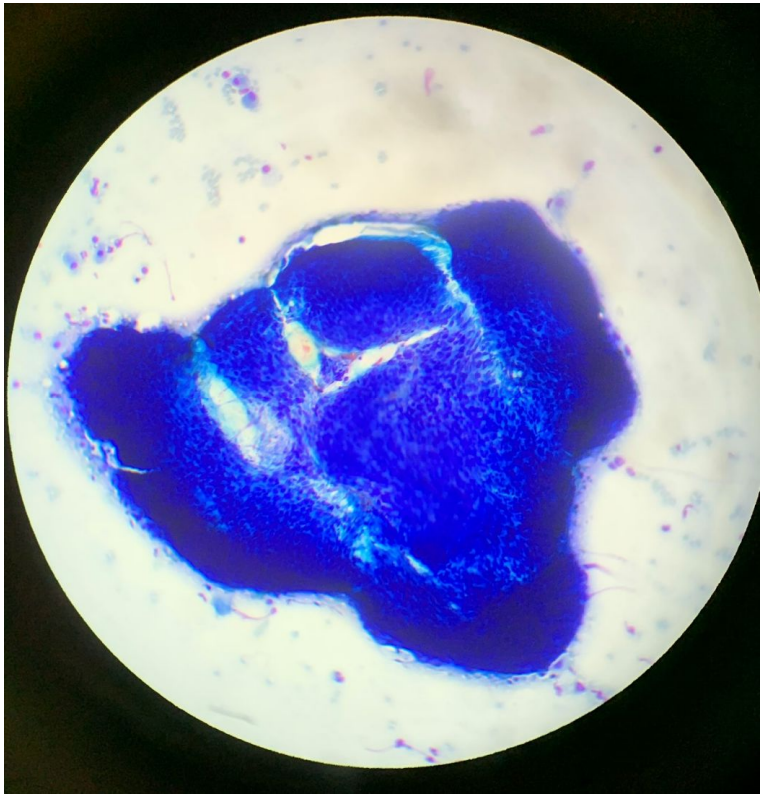
Localizer Thin Images

CT Guided Biopsy - Fluoroscopy



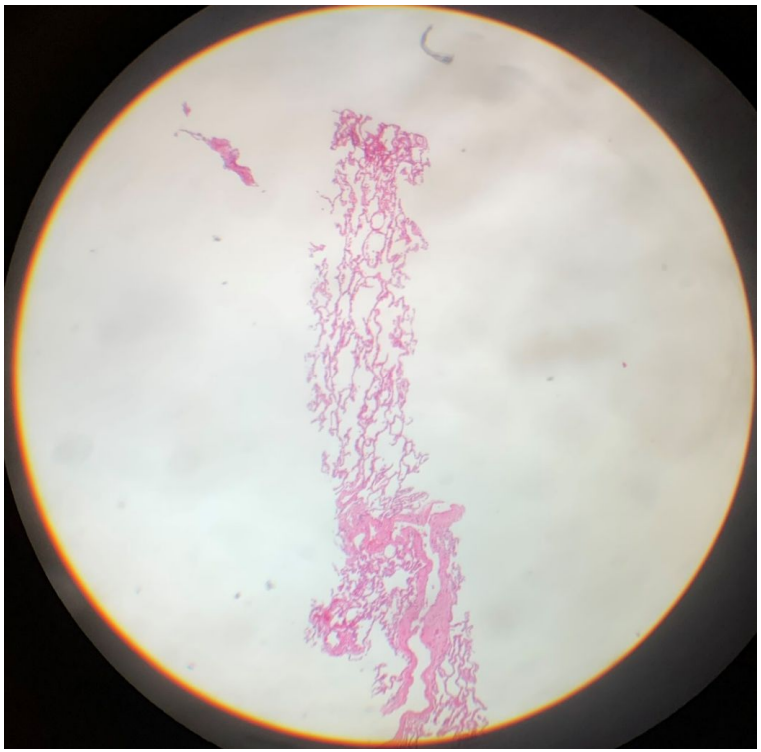
Initial FNA

- Large collection of cells
- Hypercellular
- Nuclear atypia, although difficult to discern



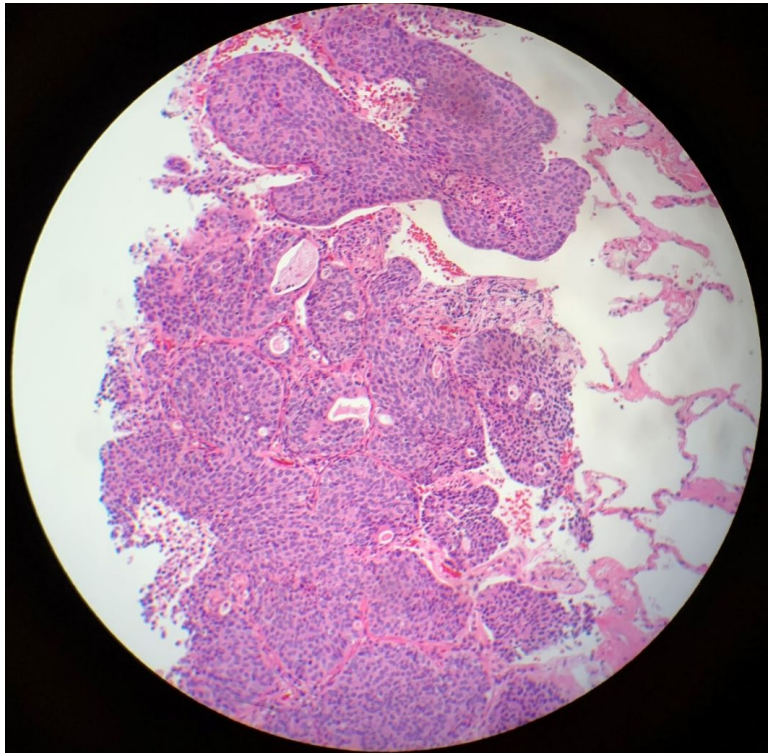
First Core

- Normal alveolar tissue
- Well aerated, no evidence of hypercellularity or atypia
- Miss



Final Core

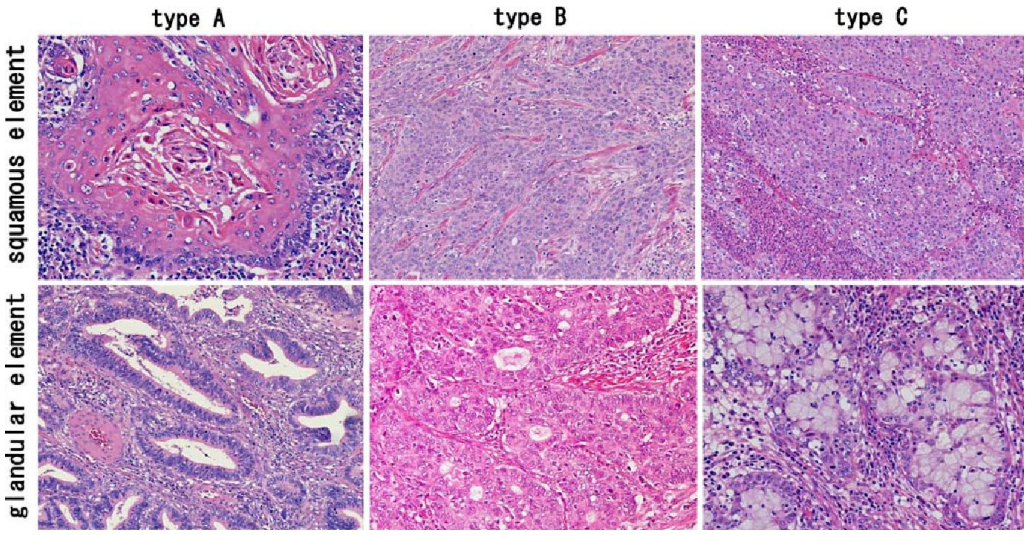
- Hypercellular tissue
- Does not resemble normal alveolar tissue, bronchial tissue, or mesothelial (pleural) tissue
- Sheets of squamous-like cells that demonstrate significant nuclear atypia
- Area of normal alveolar tissue

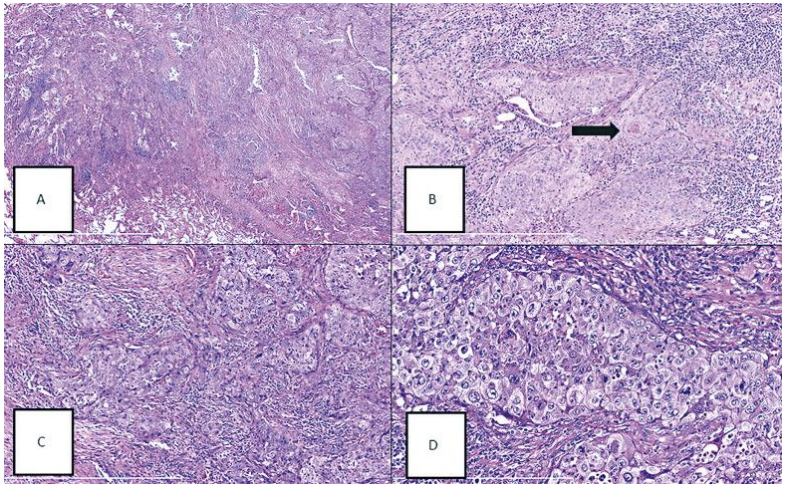


Adenosquamous Carcinoma

Cervical

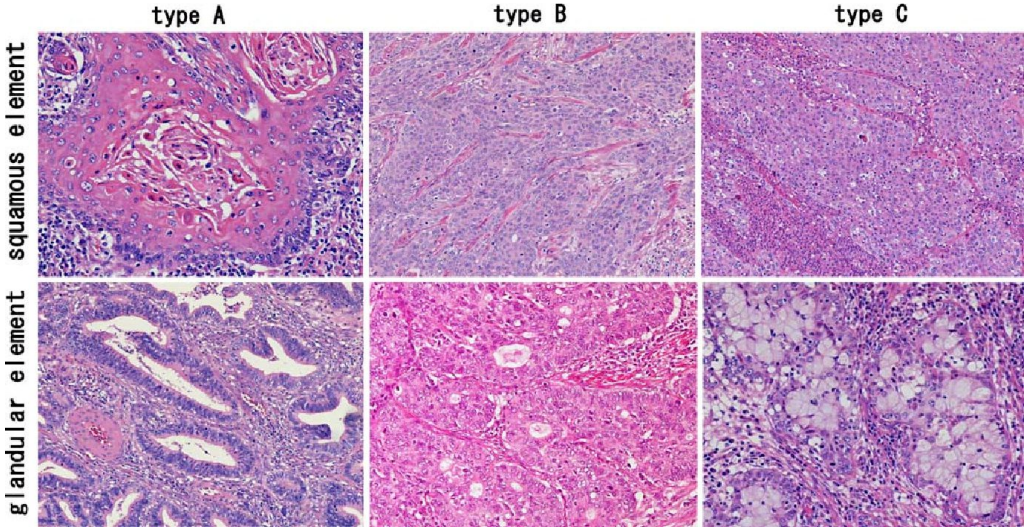
Pulmonary



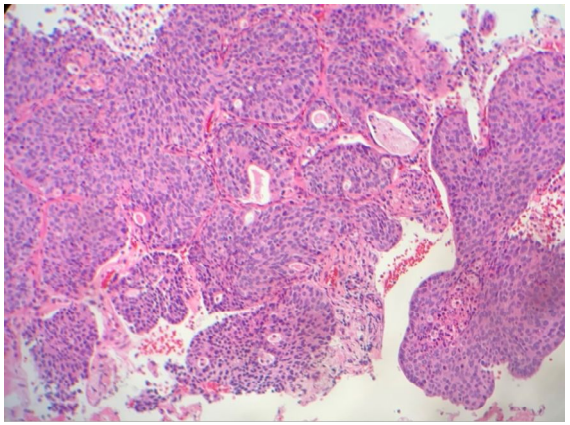


Tissue comparison

Cervical Adenosquamous Carcinoma

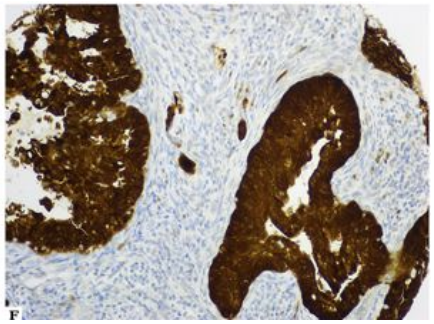


Our patient



Further Steps

- Comparison to previous pathology (adenosquamous carcinoma)
- Tissue specific stains
  - If cervical in origin: overexpression of P16 (positive in cervical adenosquamous carcinoma 72% of the time)



Blocklike P16 expression

  - If pulmonary in origin: Napsin, TTF, P63.
- Referral to Gyn Onc for further treatment options, including chemoradiation

References

- Mandel, J., & Stark, P. (2018). Differential diagnosis and evaluation of multiple pulmonary nodules. In Finlay, G., Lee, S.I. (Eds.), *UpToDate*. Retrieved January 16, 2019 from https://www.uptodate.com/contents/differential-diagnosis-and-evaluation-of-multiple-pulmonary-nodules

- Yoshida, T., Sano, T., Oyama, T., Kanuma, T., & Fukuda, T. (2009). Prevalence, viral load, and physical status of HPV 16 and 18 in cervical adenosquamous carcinoma. *Virchows Archiv*, *455*(3), 253-259.

- Rao, N. (2014, July). Adenosquamous carcinoma. In *Seminars in diagnostic pathology* (Vol. 31, No. 4, pp. 271-277). WB Saunders.

- Stolnicu, S., Hoang, L., Hanko-Bauer, O., Barsan, I., Terinte, C., Pesci, A., ... & Park, K. J. (2018). Cervical adenosquamous carcinoma: detailed analysis of morphology, immunohistochemical profile, and clinical outcomes in 59 cases. *Modern pathology: an official journal of the United States and Canadian Academy of Pathology, Inc*.