

# Rad-Path Correlate Case Report

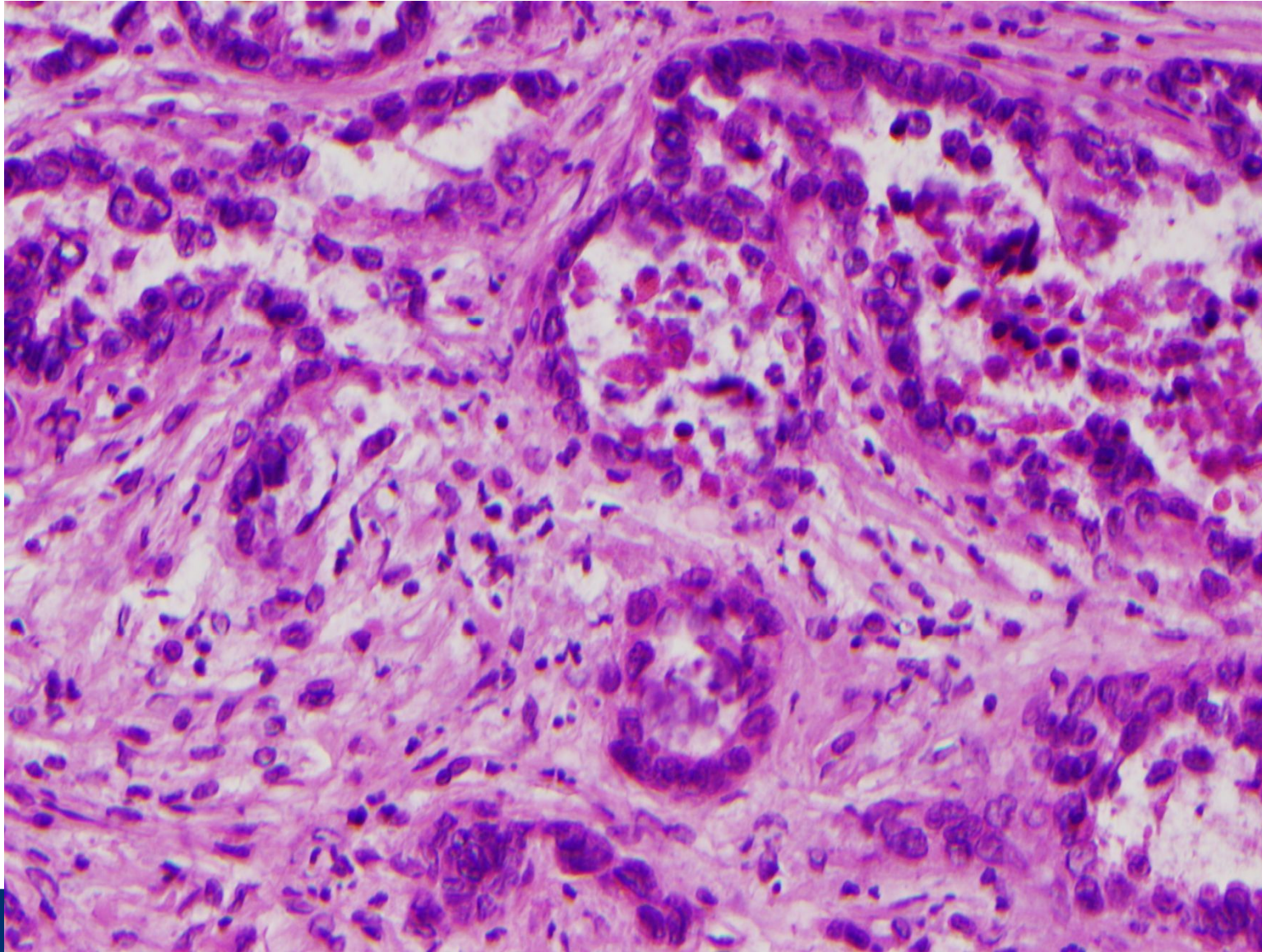
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2/2/18

## Case Report

- AO is a 65 year old female with prior history of T3N0M0 (PNI+, LVI-) dedifferentiated adenoid cystic carcinoma of the L parotid gland s/p L total parotidectomy and left neck dissection c/b by L facial nerve neuropraxia as well as subsequent completion of adjuvant RT
- She has been followed for several suspicious pulmonary nodules that have slowly increased in size since the completion of her prior RT

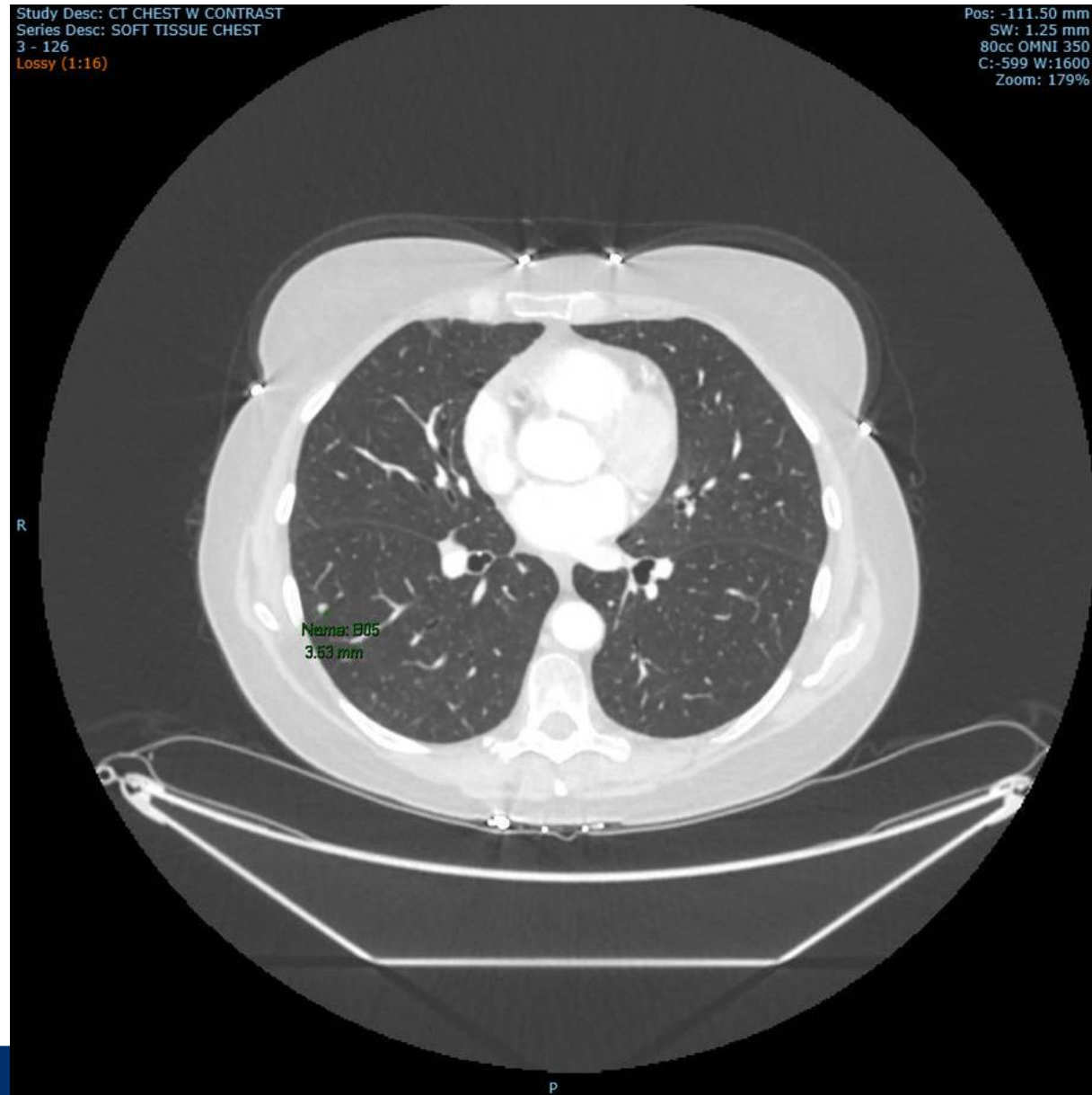
## Original Pathology



Study Desc: CT CHEST W CONTRAST  
Series Desc: SOFT TISSUE CHEST  
3 - 126  
Lossy (1:16)

Pos: -111.50 mm  
SW: 1.25 mm  
80cc OMNI 350  
C: -599 W:1600  
Zoom: 179%

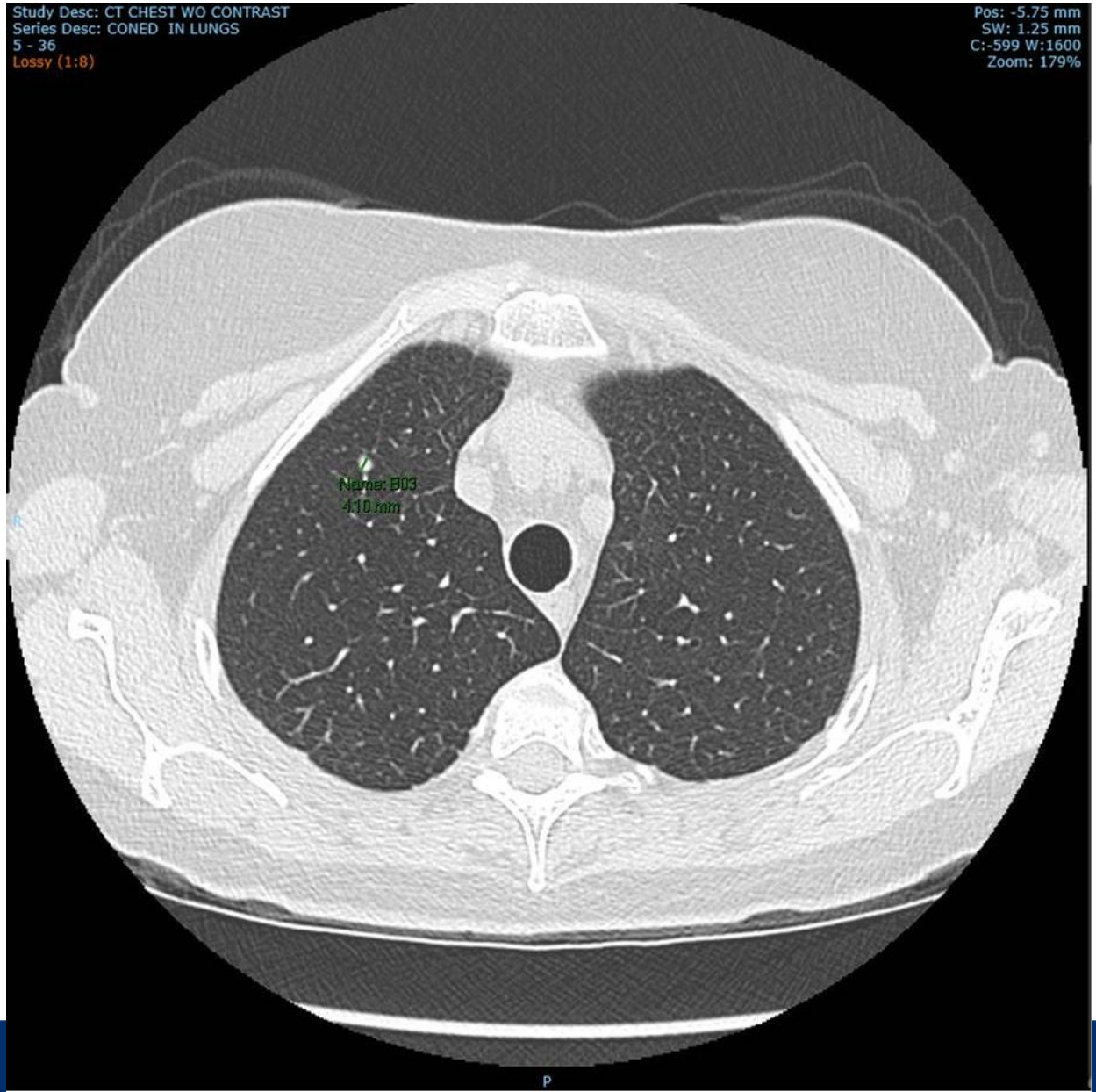
## Prior Imaging



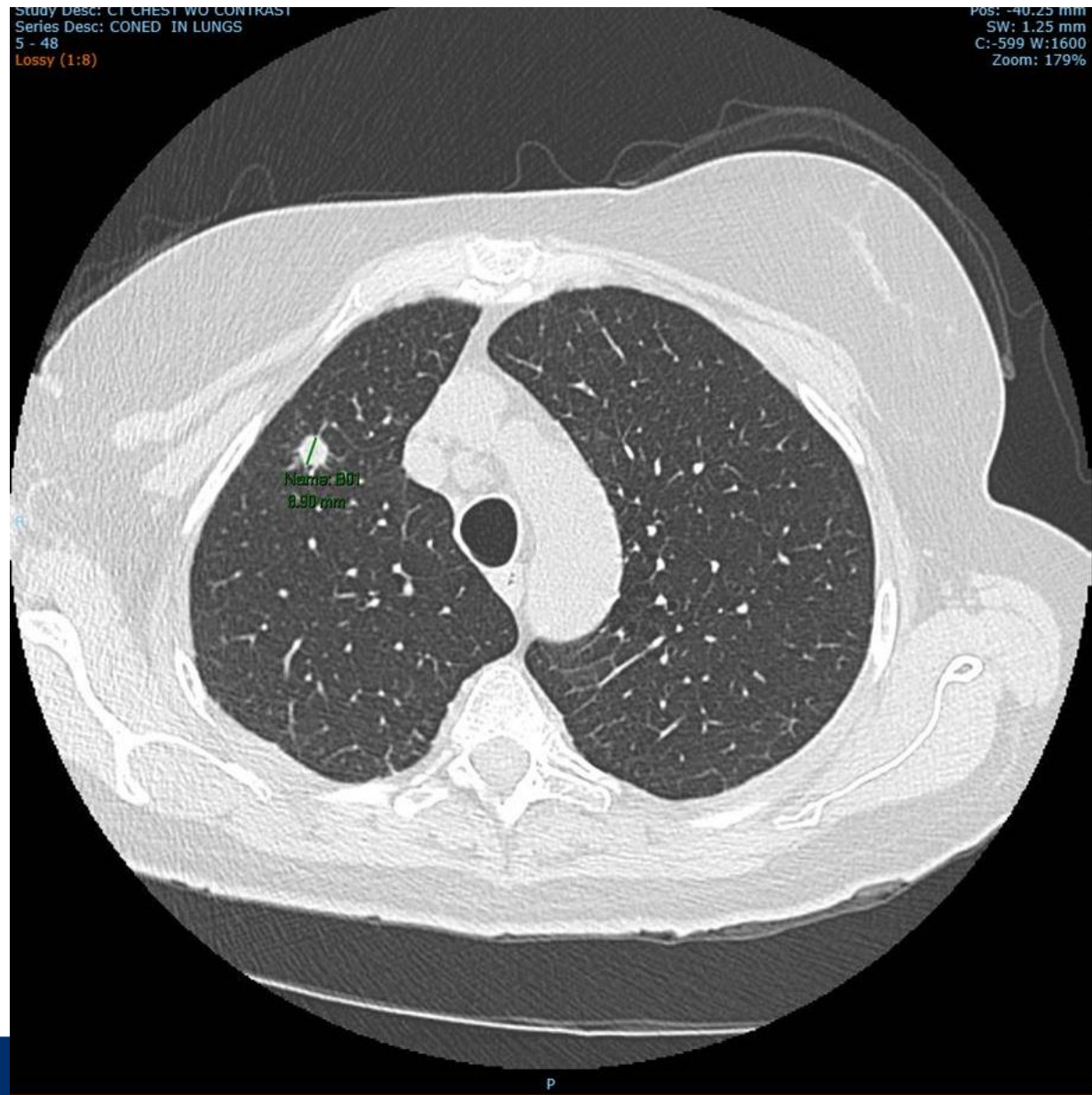
## Prior Imaging

Study Desc: CT CHEST W/O CONTRAST  
Series Desc: CONED IN LUNGS  
5 - 36  
Lossy (1:8)

Pos: -5.75 mm  
SW: 1.25 mm  
C: -599 W:1600  
Zoom: 179%



## Prior Imaging



## Differential Diagnosis

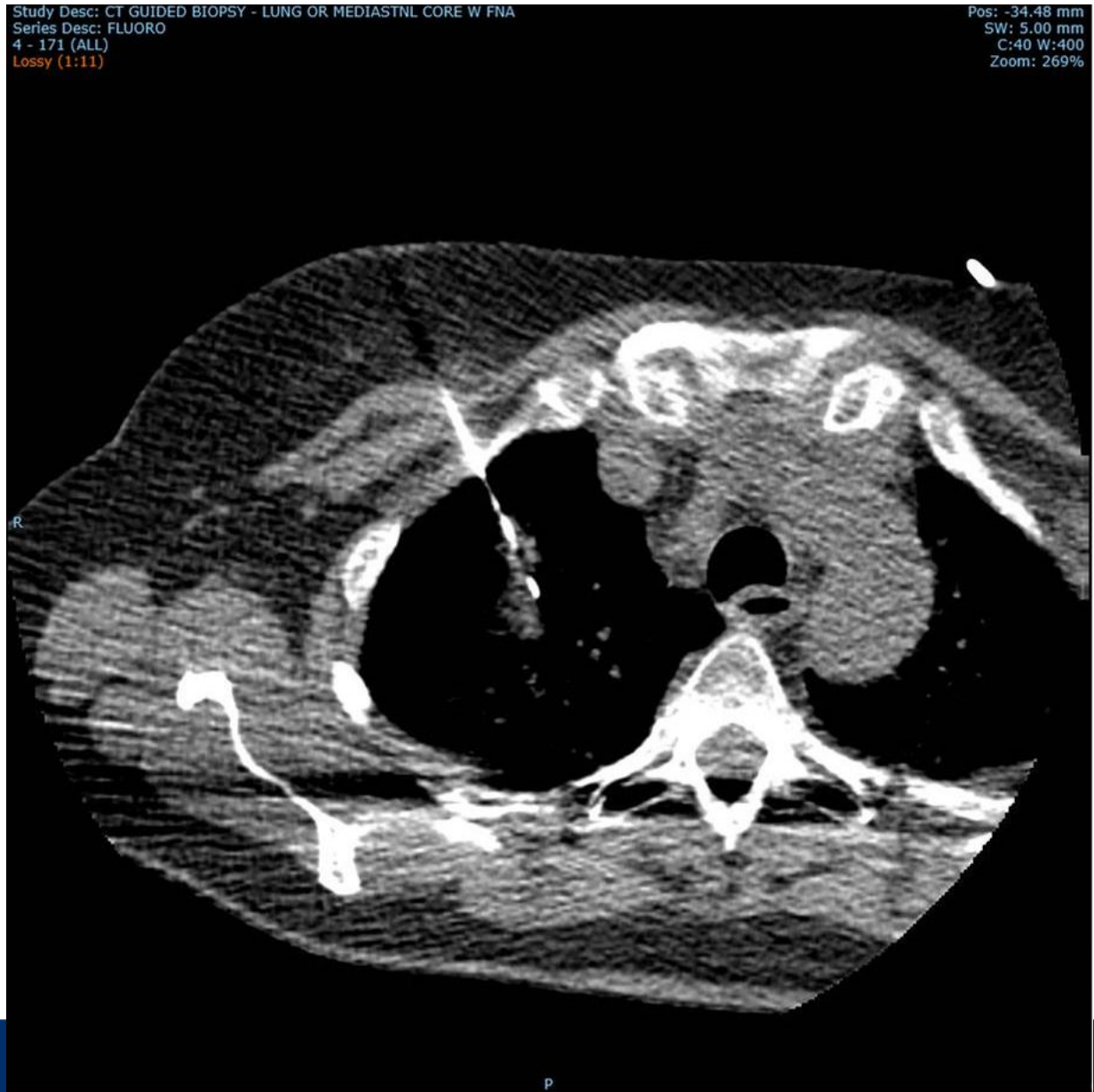
- Given the patient's clinical history, recurrent metastatic disease is likely
- Location, number, and appearance are important factors:
  - Multiple nodules
  - No apparent pattern to distribution; can be described as peripheral, are not central/hilar
  - Spiculated, enlarging, hypodense
- Only potential risk factor for infectious etiology is prior history of cancer (chemo- and radiotherapy)
  - May increase likelihood of less common infectious agents (fungi, opportunistic infections)
  - Features of nodules not consistent with infectious etiology

## Background: Adenoid Cystic Carcinoma (1)

- 3<sup>rd</sup> most common malignant tumor of the salivary gland
- 3 basic growth patterns (tubular, cribriform, and solid) that are often intermixed, with biologic aggressiveness correlated w/ quantity of solid component of tumor
- clinical stage, solid growth pattern, and p53 expression were found by multivariate analysis to be the most important prognostic features in head and neck ACC (2)
- Frequently demonstrates bone and perineural invasion (NCAM, NGF/(R), TrkA) and CD117 (c-kit) in luminal cells



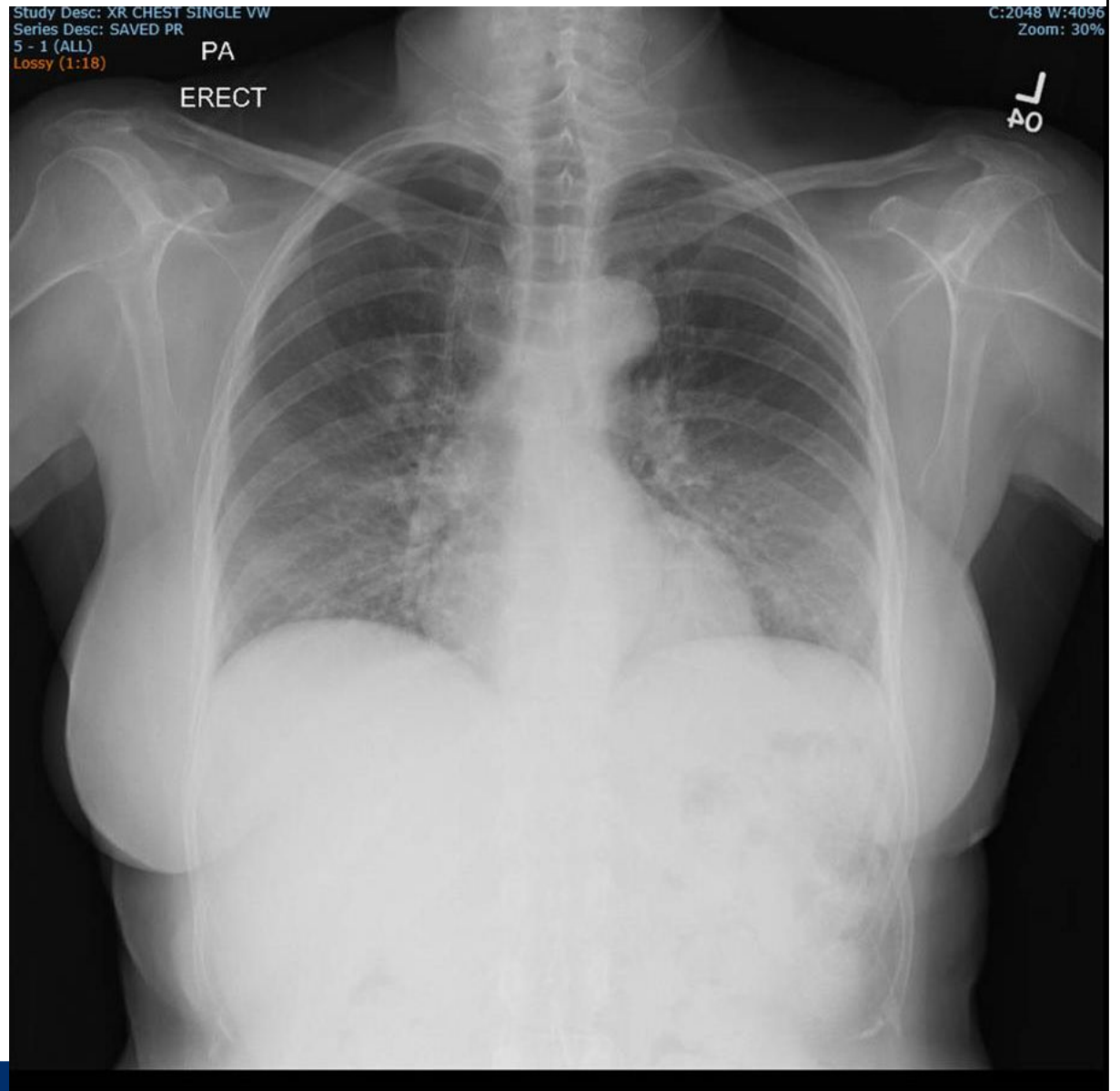
## Procedure



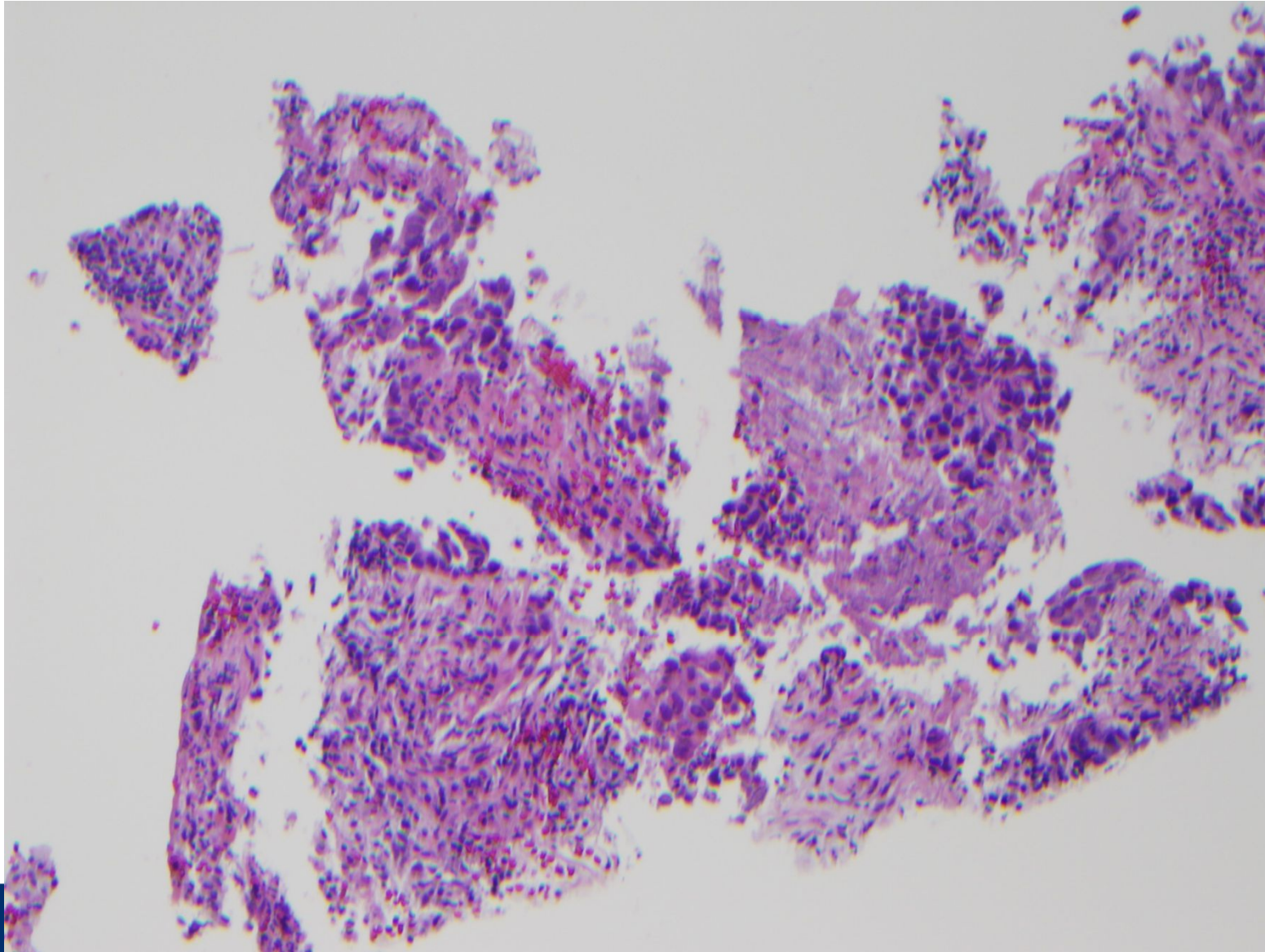
## Background: Transthoracic Needle Biopsy (3)

- Performed by passing a needle percutaneously through the chest wall into the target nodule, usually under CT guidance for either aspiration (FNA) or biopsy (core)
- Diagnostic yield for TTNB is >88% for the diagnosis of malignancy
- Most common complication is pneumothorax, with retrospective studies citing a 10-17% rate
  - Risk increased in patients with concomitant emphysema, bullous disease, chronic respiratory failure
  - Blood patching can decrease this risk (4)
- The incidence of hemorrhage was cited at 1-7%

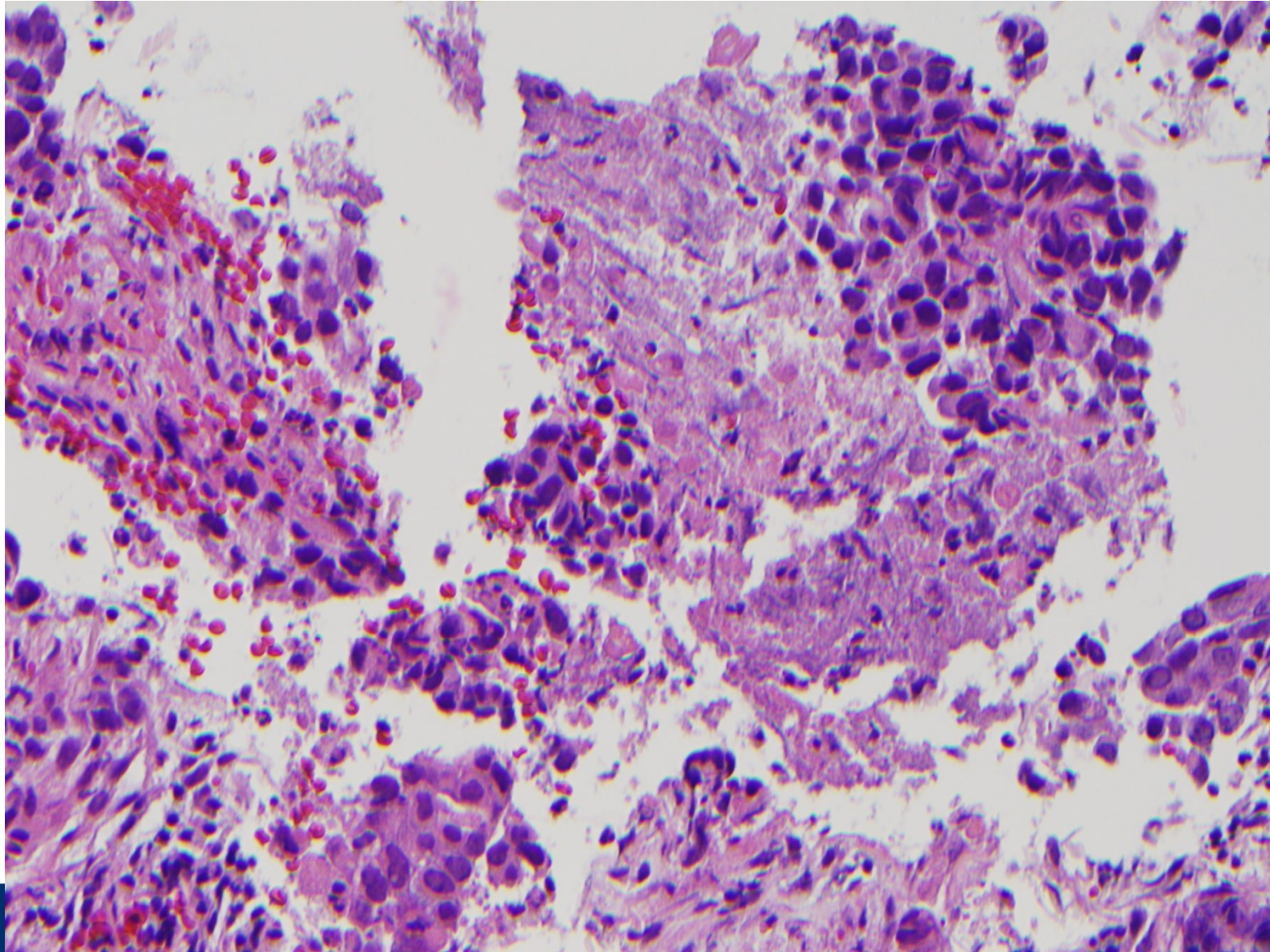
## Procedure



## Pathology



# Pathology



## Immunohistochemistry

- TTF-1: thyroid transcription factor 1, a normal lung function and morphogenesis factor, frequently positive in lung adenocarcinomas
- Napsin A: functional aspartic proteinase more sensitive than TTF-1 for identification of lung adenocarcinoma
- p63: member of the p53 gene family, but does not appear to be a tumor suppressor gene. A myoepithelial marker and regulates growth in epithelial organs. A nuclear stain that can rule out invasion in salivary gland tumors by determining the presence of myoepithelial cells

## References

- (1) Pathology of head and neck neoplasms. Taxy et al. UpToDate. Dec 2017.
- (2) Prognostic factors in head and neck adenoid cystic carcinoma. da Cruz Perez DE et al. Oral Oncol. 2006. 42(2): 139.
- (3) Diagnostic evaluation of the incidental pulmonary nodule. Weinberger et al. UpToDate. Dec 2017.
- (4) Pulmonary intraparenchymal blood patching decreases the rate of pneumothorax-related complications following percutaneous CT-guided needle biopsy. Graffy et al. JVIR. 2017. 28(4): 608-613.