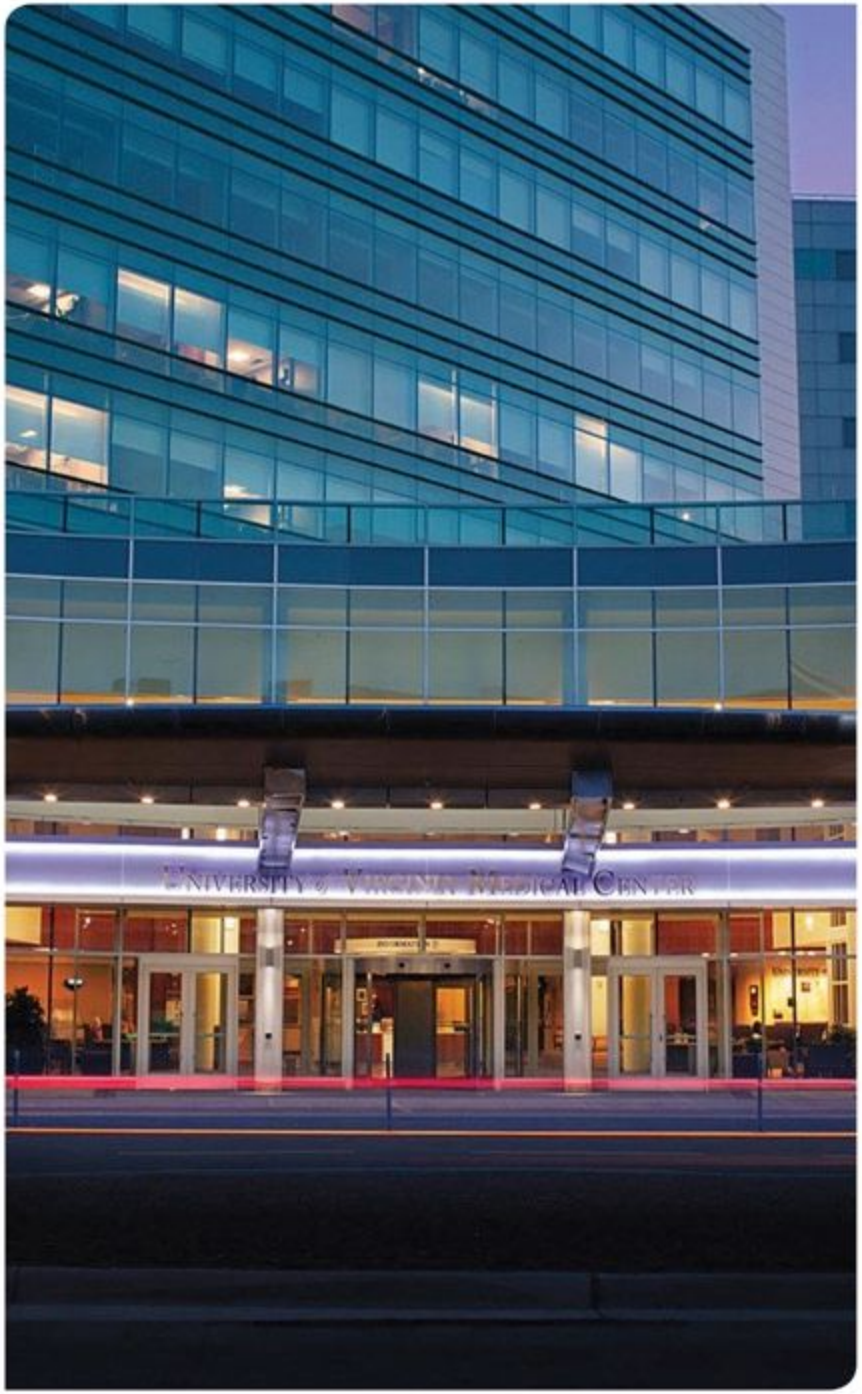

# Patient Presentation for Radiology-Pathology Correlate

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August 11, 2017

University of Virginia Health System

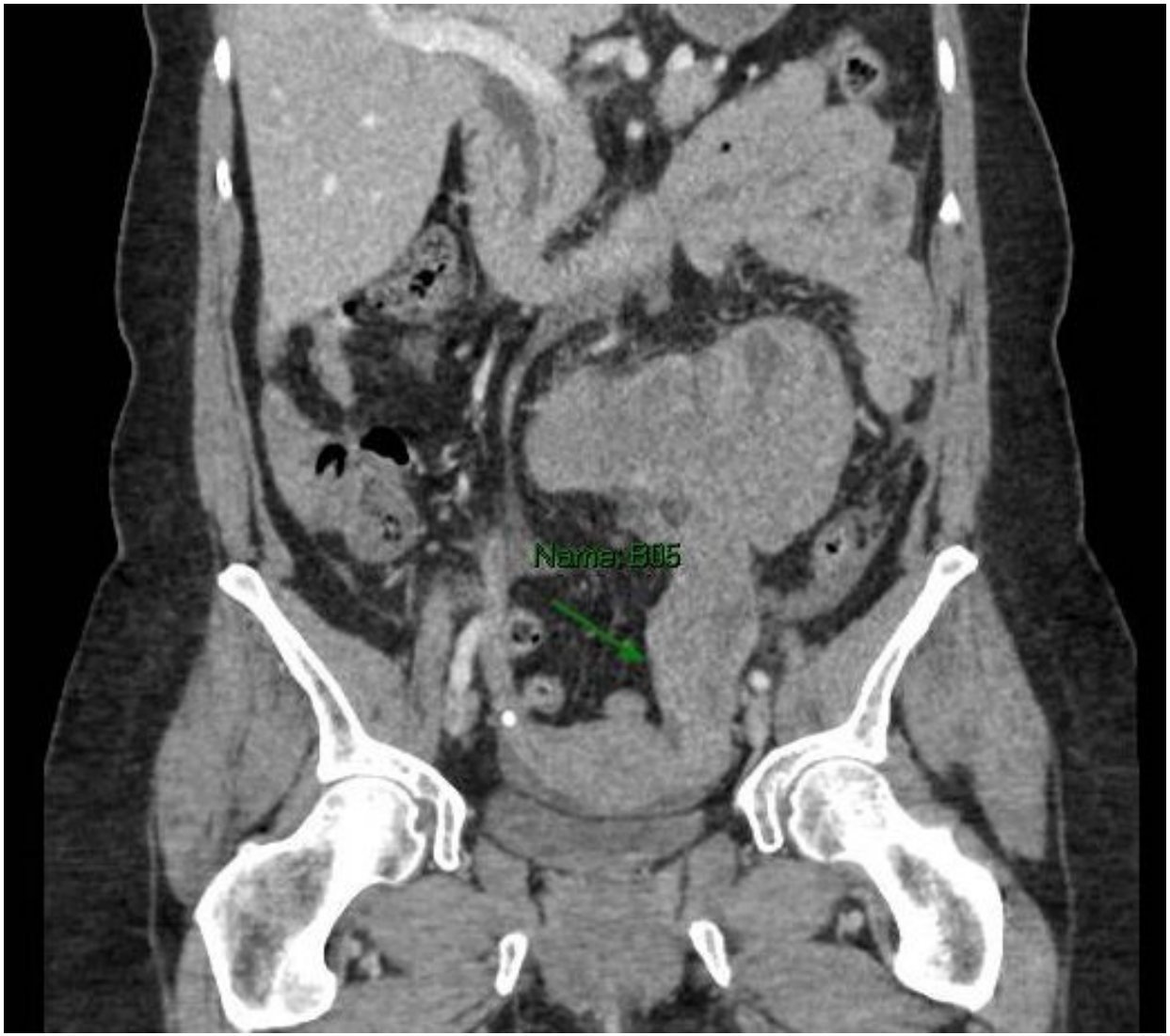
# Initial presentation

- Patient TM is a 55 year old post-menopausal female, presenting to UVA ED via transfer from outside hospital. Only relevant history is of tubal ligation.
- Presenting symptoms
  - Nausea, 4 episodes of nonbloody nonbilious emesis
  - Worsened abdominal pain: 10/10, constant sharp lower abdomen
  - 8 – 9 lbs unintentional weight loss over past week
- Recent symptoms
  - LLQ abdominal pain: 4 mo. history, cramping & occasionally sharp, radiates to left back
  - Constipation, Increased belching
  - LE swelling
- Evaluated at MJH
  - Large heterogeneous left abdominal mass appearing to arise from left ovary
  - Leukocytosis 15,000
  - Lactic acidosis 1.6
- Transferred to UVA

# Brief history

- Medical Hx
  - Anxiety & Depression
  - Hypertension
  - OA
- Surgical Hx
  - Tubal ligation
- Family Hx
  - MGM: stomach cancer
- Social Hx
  - Never smoker
  - Occasional EtOH
  - Married, 3 children, 11 grandchildren
  - Runs a pre-school out of her home

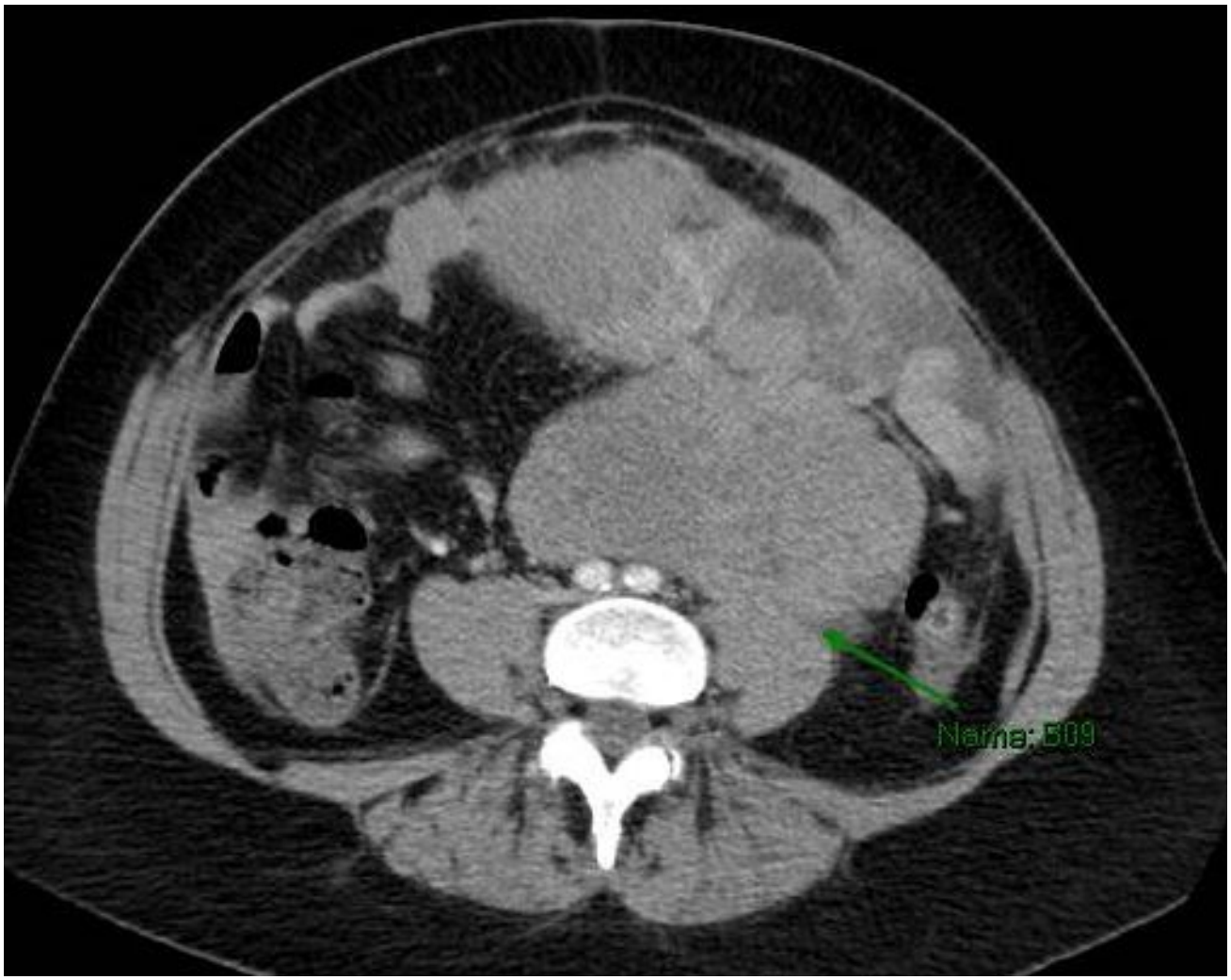
# Imaging




Heterogeneous and enlarged left ovary, continuous with a superiorly extending heterogeneously attenuating mass

Likely arising from the left ovary

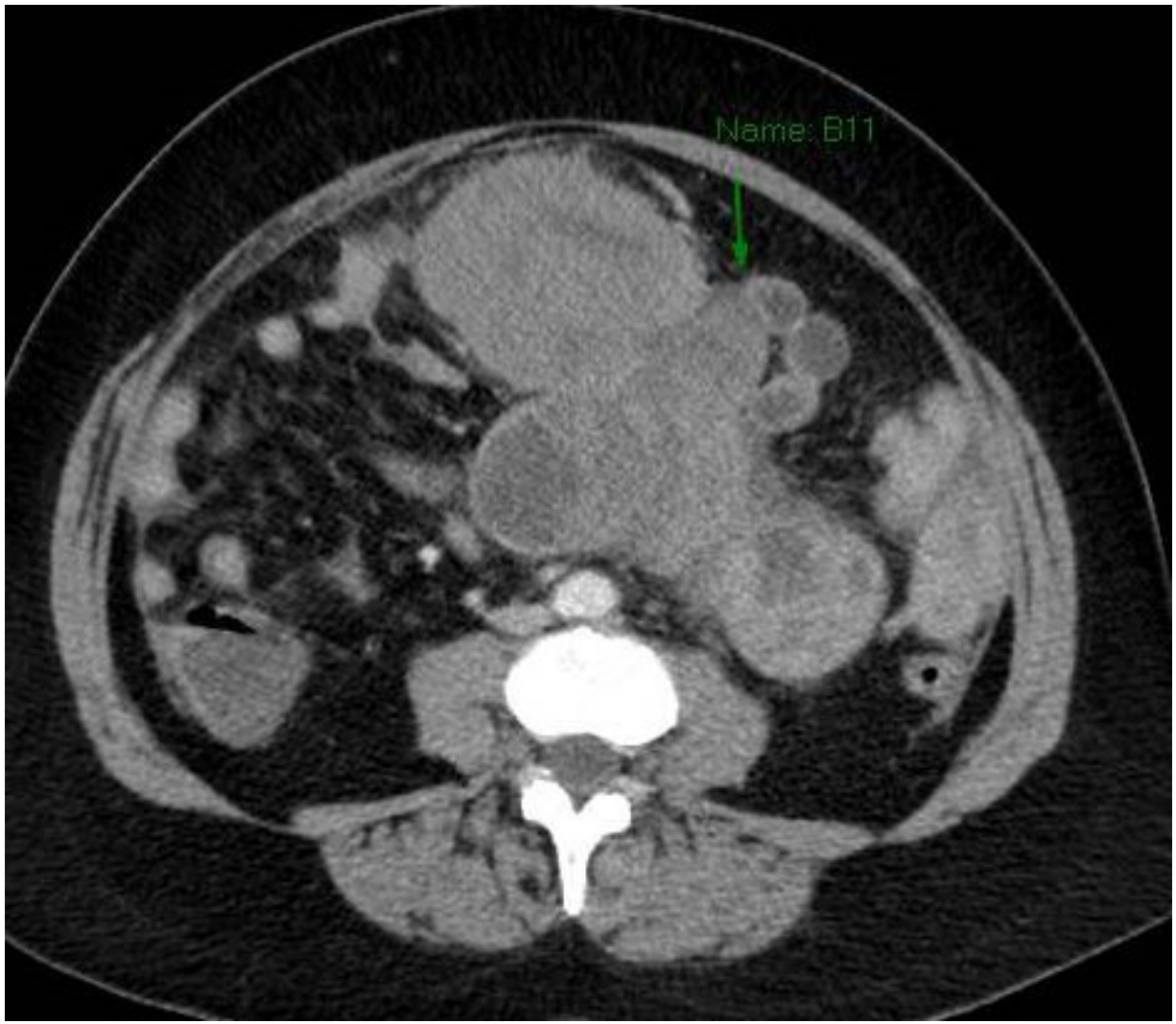
# Imaging




Large multilobulated heterogeneously attenuating mesenteric mass noted, measuring approximately 11.2 x 12.8 x 15 cm

No clear fat plane separates mass from left psoas muscle

# Imaging




No clear fat plane separates mass from loops of small bowel

Peritoneal carcinomatosis

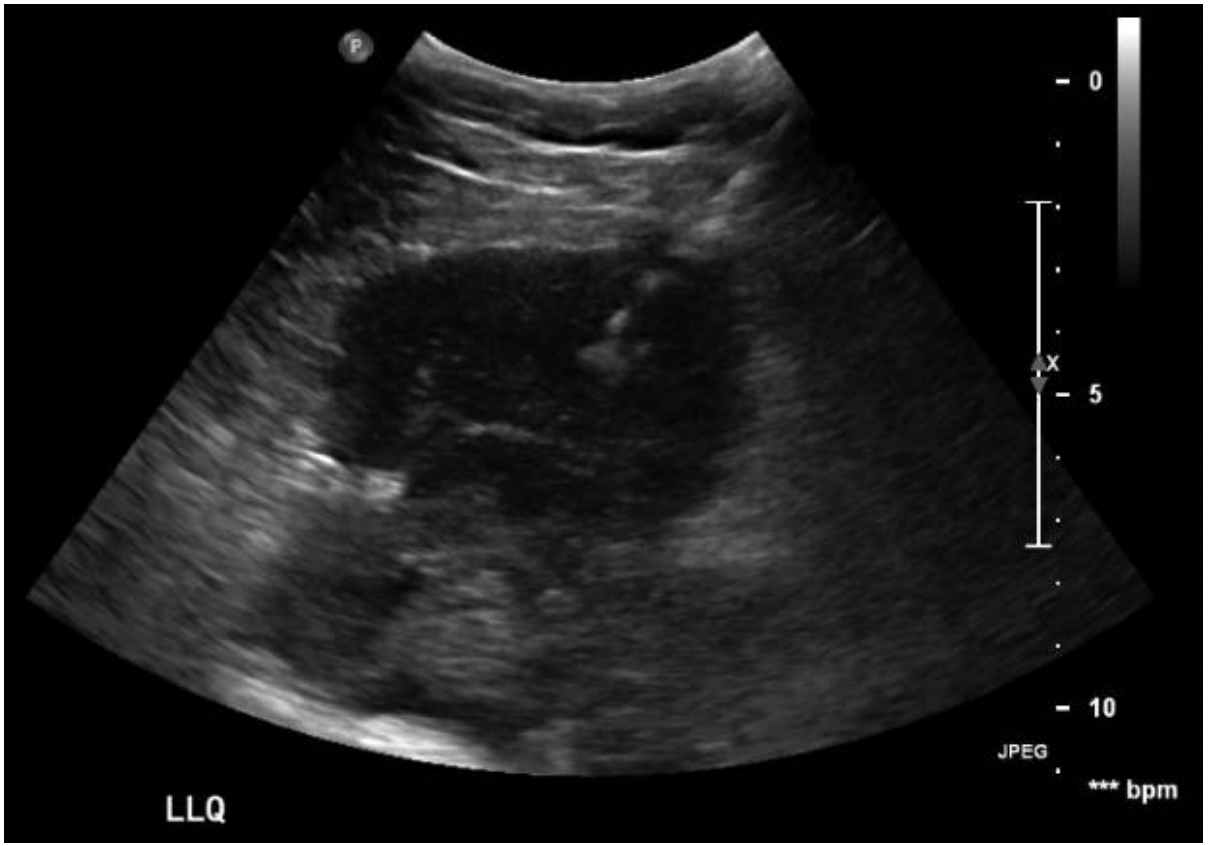
Highly suspicious for metastatic ovarian cancer

# Pre-Procedure

- Informed consent obtained
- Labs
  - PT: 15.1
  - INR: 1.3
  - Plts: 260
  - CA-125: slightly elevated
  - CEA: normal

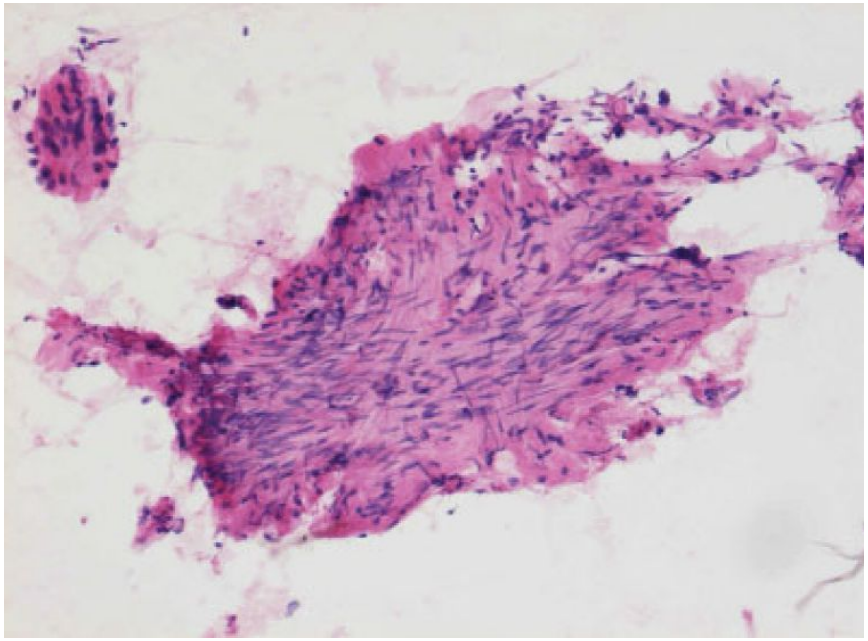
# Biopsy

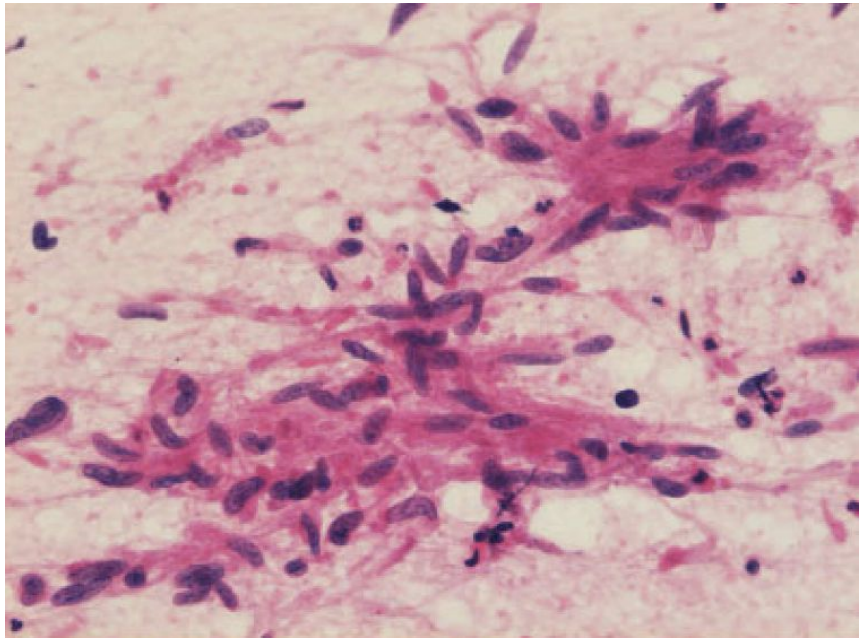
- US guided FNA
- Anterior approach
- Patient supine



# FNA Findings

- Spindle cells?!?
- 2 core biopsies taken





# Core Biopsy Findings

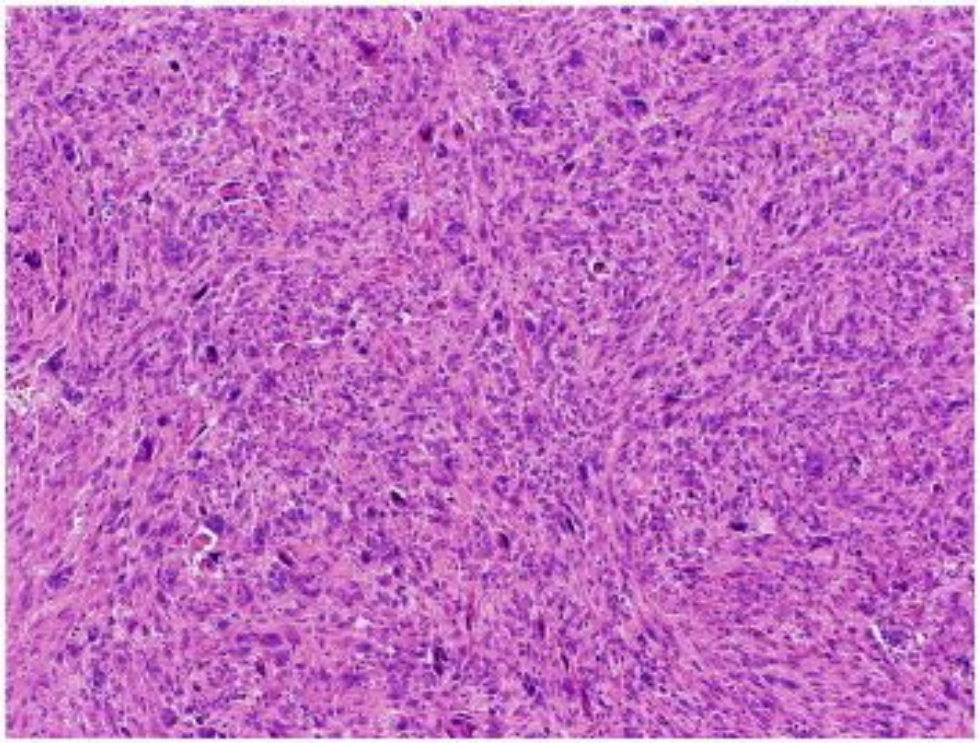
- Core findings:
  - Cellular spindle cell proliferation
  - Frequent mitotic figures (up to 40 per 10 hpf)
  - Nuclear pleomorphism
  - Tumor necrosis
- Differential: leiomyosarcoma vs GIST
- Immunohistochemistry:
  - Positive staining with SMA and desmin
  - Negative for c-kit (CD117), Dog-1 and CD34
- Diagnosis of leiomyosarcoma supported

# Leiomyosarcoma

- Most common uterine sarcoma; accounts for 1 – 2% of uterine malignancies
- Aggressive, associated with poor prognosis and high risk of recurrence (53 - 71%)
- Vast majority are sporadic; leiomyomas are not precursors
- Clinical-pathologic features
  - Peri- or postmenopausal age
  - Extrauterine extension
  - Large size (over 10 cm)
  - Infiltrating border
  - Necrosis

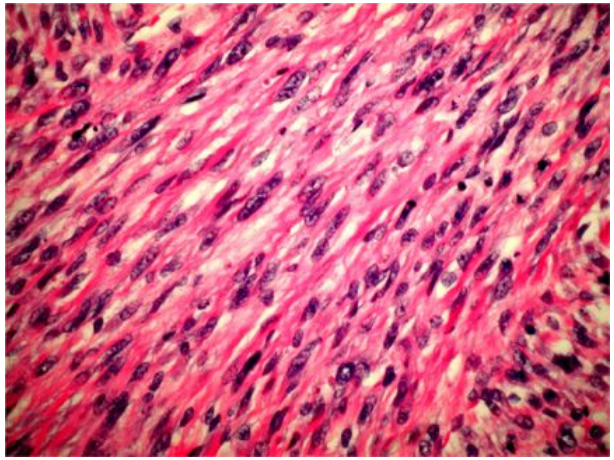
# Path Presentation

- Pathologic features
  - Hypercellularity
  - Severe nuclear atypia
  - High mitotic rate



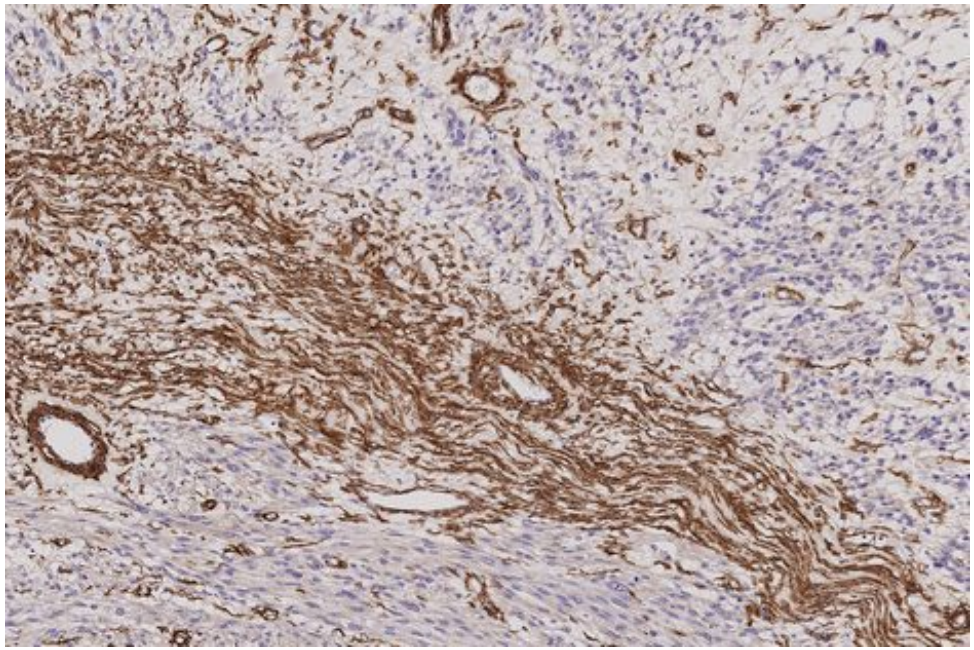
Spindle cell variant

Well-differentiated



# Immunohistochemistry

- Usually express smooth muscle markers
  - Histone deacetylase 8 (HDCA8)
  - **Smooth muscle actin (SMA)**
  - **Desmin**
  - H-caldesmon



# Malignant?

- Malignancy judged based on Stanford criteria: (1) cellular atypia, (2) mitosis, (3) coagulative necrosis
- Staged using the 2009 International Federation of Gynecology and Obstetrics (FIGO) staging system

| Group | Mitotic Index (MI) (per 10 HPF) | Atypia | Coagulatve tumor cell necrosis | Designation | Metastatic or recurrent disease |
|---|---|---|---|---|---|
| I | ≥5 to <20 | None or mild | None | Leiomyoma with increased MI | 1/89 |
| II A | <10 | Diffuse, moderate or severe | None | Atypical leiomyoma with low risk percent or recurrence | 2/46 |
| II B | ≥10 | Diffuse, moderate or severe | None | Leiomyosarcoma | 4/10 |
| III | ≤20 | Diffuse, moderate to severe | Present | Leiomyosarcoma | 19/33 |
| IV A | <10 | None to mild | Present | Smooth muscle tumors of low malignant potential, limited experience | 1/4 |
| IV B | ≥10 | None to mild | Present | Leiomyosarcoma | 3/4 |
| V | ≥1 to ≤20 | Multifocal, moderate to severe | None | Atypical leiomyoma, limited experience | 0/5 |

# Treatment & Prognosis

- Overall survival rate 15 - 25%, with median survival of 10 months (in one study)
- Cohort of 2017 National Cancer Database study of N = 7455 showed 10 - 14% 5-year survival in metastatic leiomyosarcoma
- Size, grade, and stage help in prognostication
  - Survival decreases dramatically with increasing tumor size
- Early and complete surgical resection remains the best-evidenced effective treatment
  - Once disease has spread beyond uterus, likelihood of achieving long-term survival is low with current therapeutics
- Influence of adjuvant therapy on survival is uncertain
  - Radiation may be useful for local recurrences
  - Chemotherapy increases survival of women with metastatic leiomyosarcoma, although the survival benefit may not persist and long-term survival, or chance of cure, remains low

- Case follow-up
  - Results of biopsy conveyed by GynOnc to patient TM via telephone encounter
  - Planning to do chemotherapy due to size of mass and involvement of great vessels

- References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- Questions?

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