

# AMSER Case of the Month:

## Ovarian Mass in a 47 Year-old Female

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# Patient Presentation

- The Patient is a 47yo WF who presented to her PCP at OSH c/o a pulling sensation in her RLQ. She was found to have a R-sided adnexal mass on CT, negative for lymphadenopathy or met's. She was scheduled for an exploratory laparotomy on 8/26.
- Past medical hx: LMP 2011. Denies h/o OCP use. H/o abnormal pap smear with subsequent LEEP procedure in late teens. S/p hysterectomy.
- Family hx: Negative for ovarian cancer. Maternal aunt with breast cancer, cervical cancer, and uterine cancer.

# Pertinent Labs

- Physical exam: Palpable mass/fullness in RLQ to midline, mild generalized tenderness to palpation, no distension or ascites, no hepatosplenomegaly, no lymphadenopathy
- Labs: CA-125 elevated

What Imaging Should We Order?

# ACR Appropriateness Criteria

**Variant 2:**

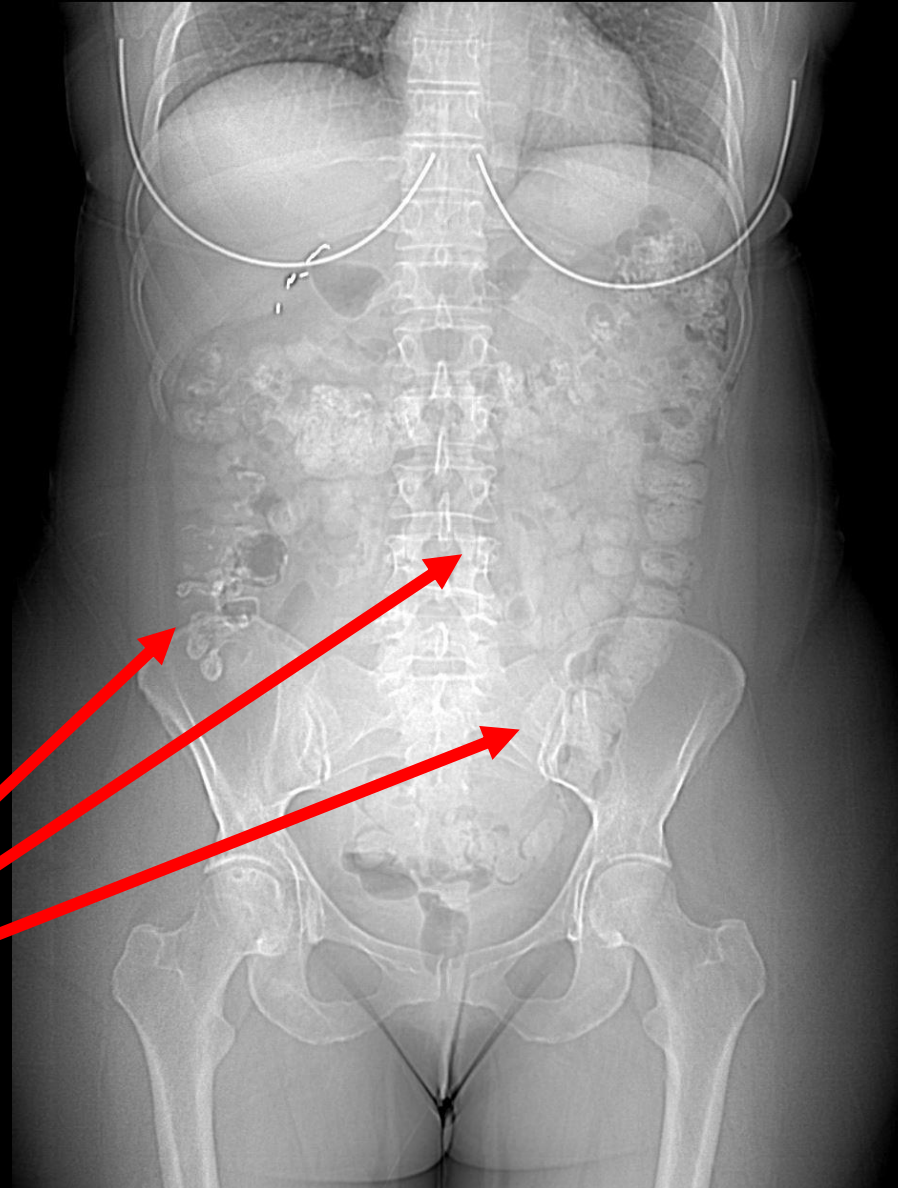
**Clinically suspected adnexal mass, no acute symptoms. Postmenopausal. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
US duplex Doppler pelvis	Usually Appropriate	○
US pelvis transvaginal	Usually Appropriate	○
US pelvis transabdominal	Usually Appropriate	○
MRI pelvis without and with IV contrast	May Be Appropriate	○
MRI pelvis without IV contrast	May Be Appropriate	○
CT pelvis with IV contrast	Usually Not Appropriate	☢☢☢
CT pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢
CT pelvis without IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢

# Scout abdominal x-ray (unlabeled)



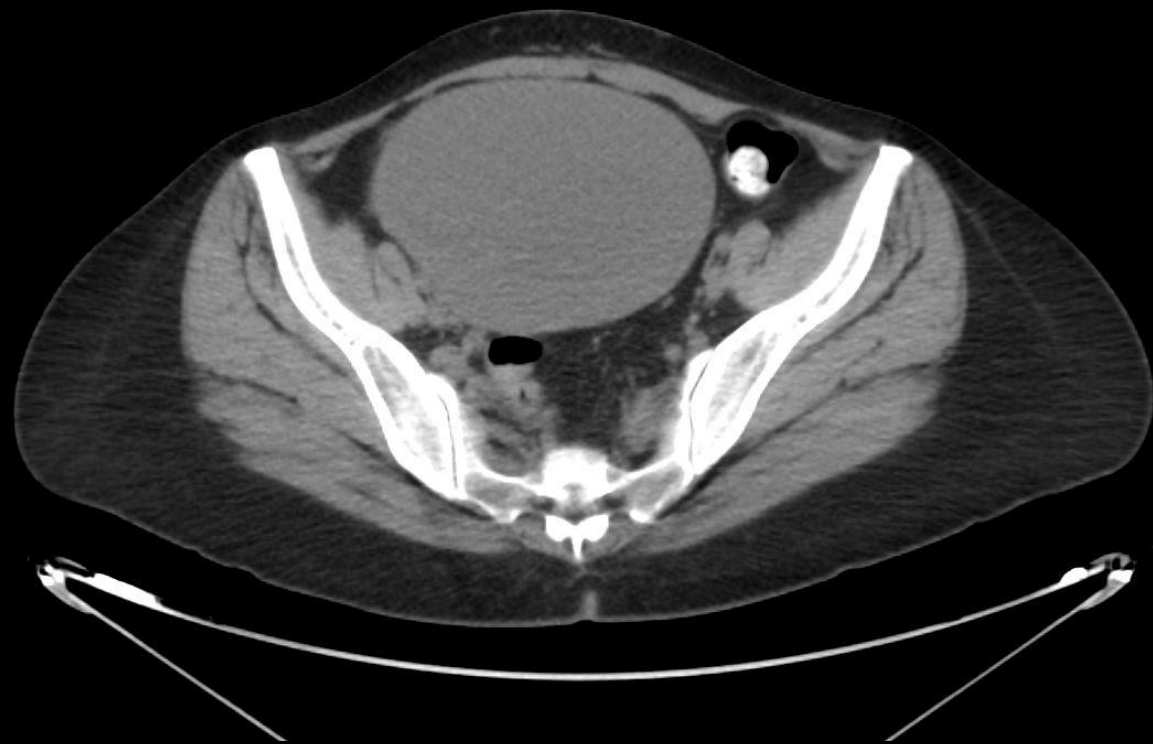
# Scout abdominal x-ray (labeled)



Intestines displaced  
around the R-sided  
pelvic mass

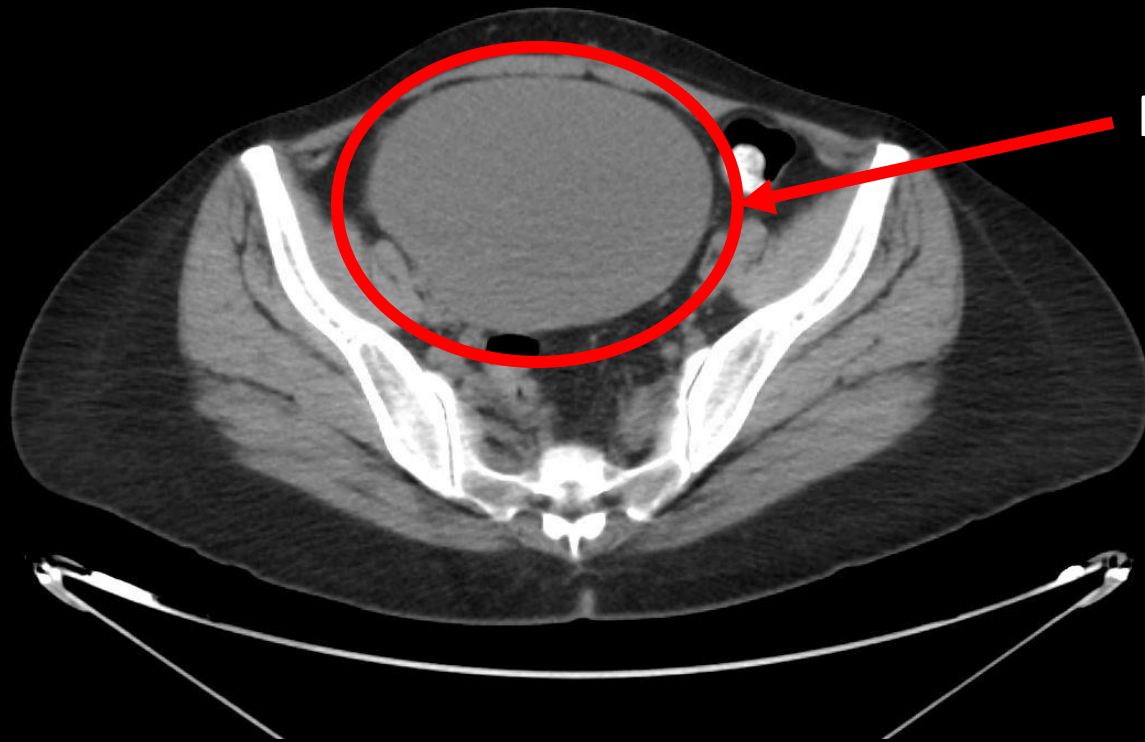


# CT abdomen/pelvis (axial view, unlabeled)



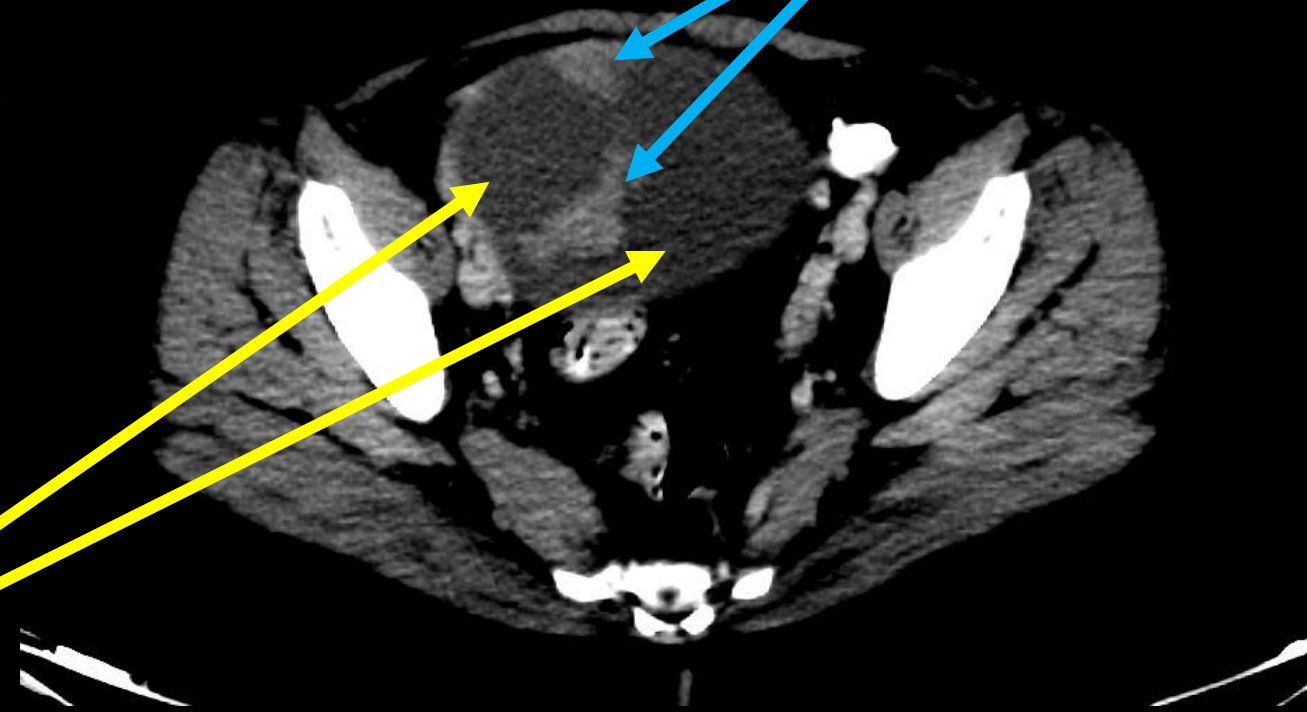


# CT abdomen/pelvis (axial view, labeled)



Pelvic mass

Thickened  
nodular  
septations



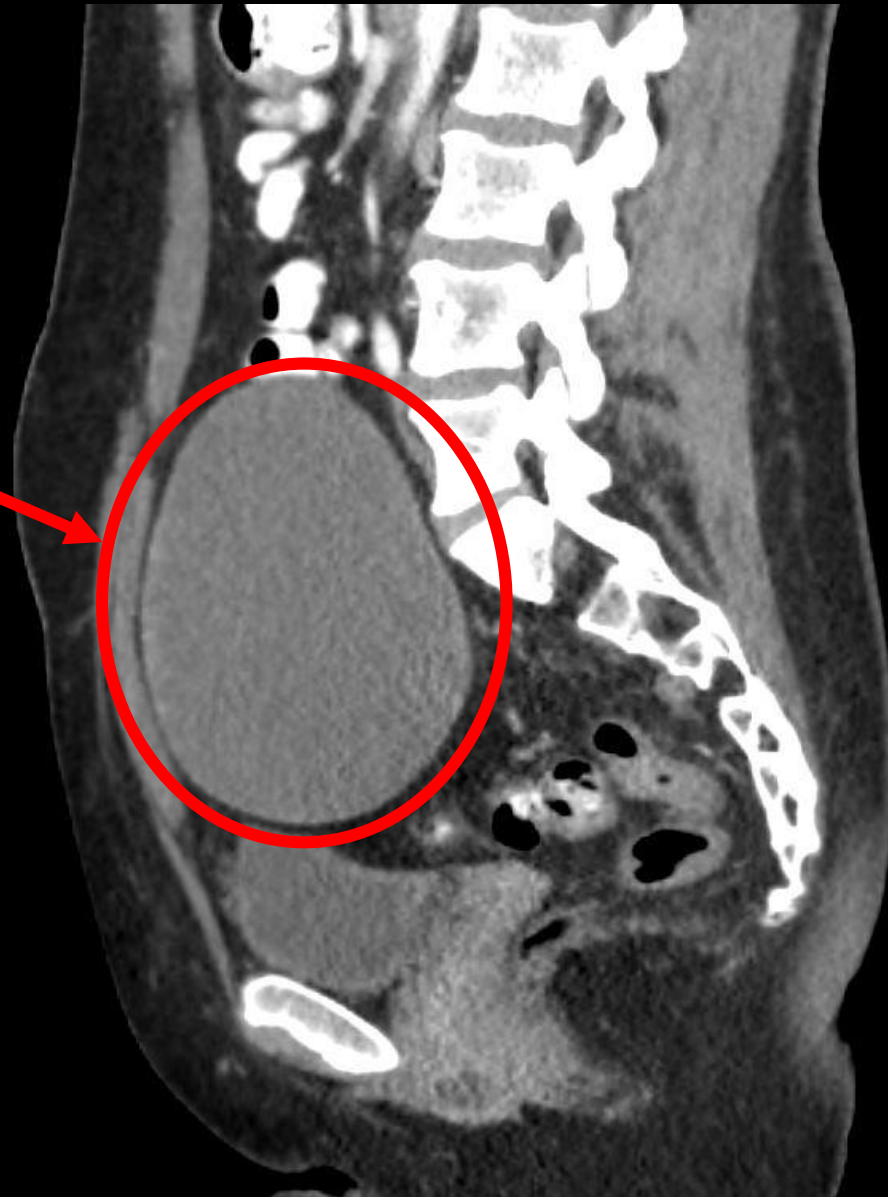
Cystic components

# CT abdomen/pelvis (sagittal view, unlabeled)



# CT abdomen/pelvis (sagittal view, labeled)

Pelvic Mass



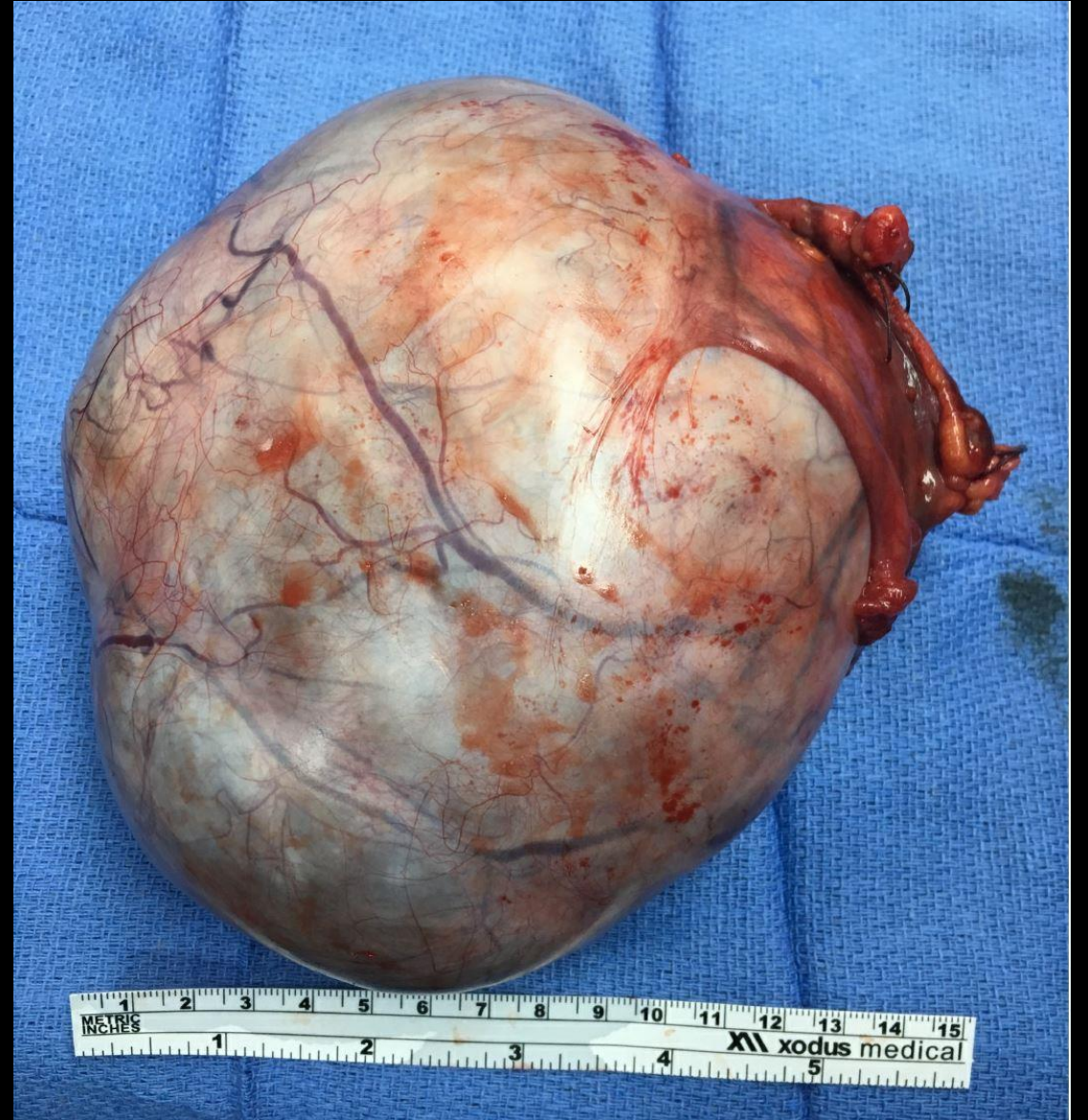
# Differential Diagnosis Based On Imaging:

- Ovarian cystic neoplasm (cystadenoma vs. cystcarcinoma)
- Simple adnexal cyst
- Endometrioma
- Teratoma

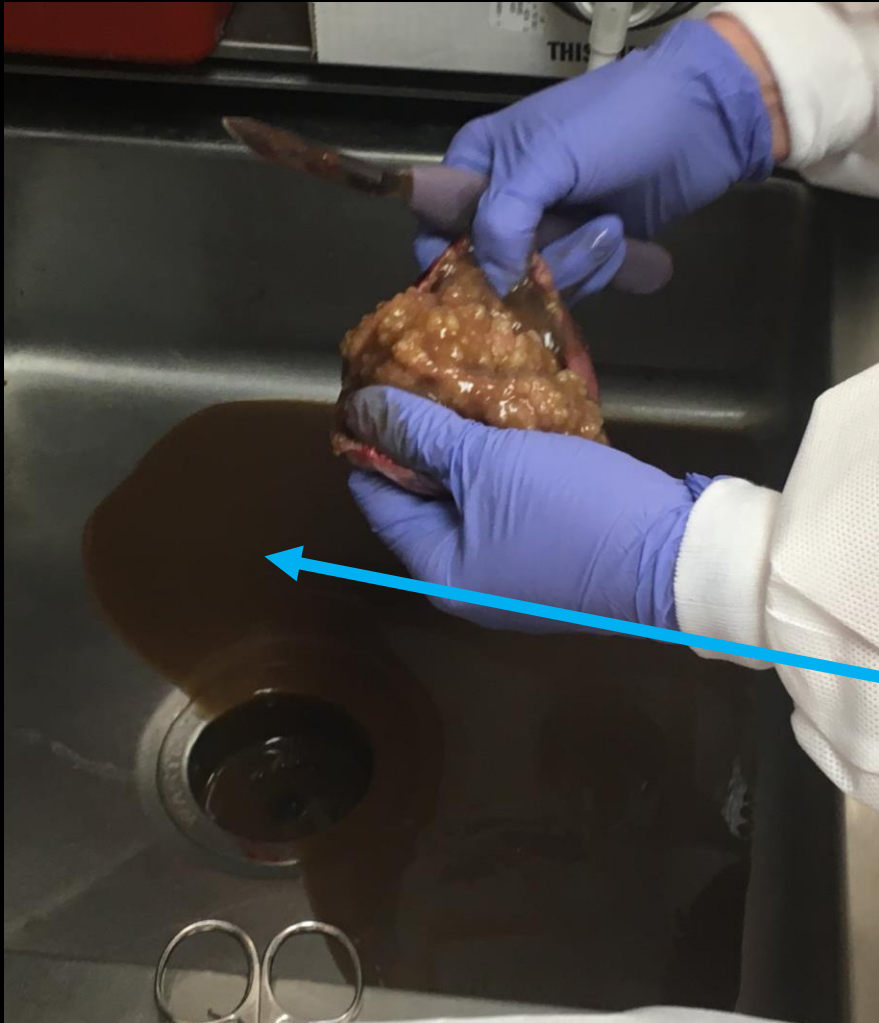


# Gross Surgical Specimen: R ovary

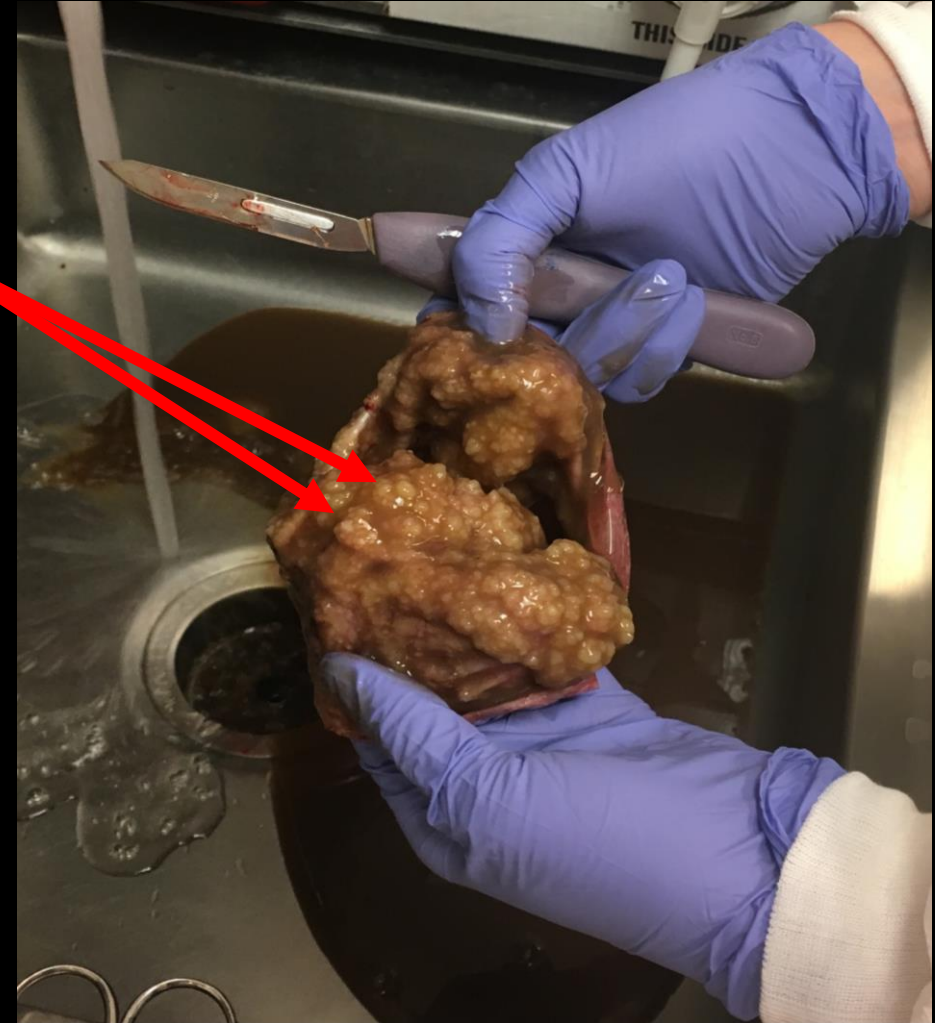
- Size: 15.0 x 14.0 x 8.0cm
- Smooth, tan-pink and glistening external surface



# Specimen is immediately evaluated by the pathologist in the frozen room



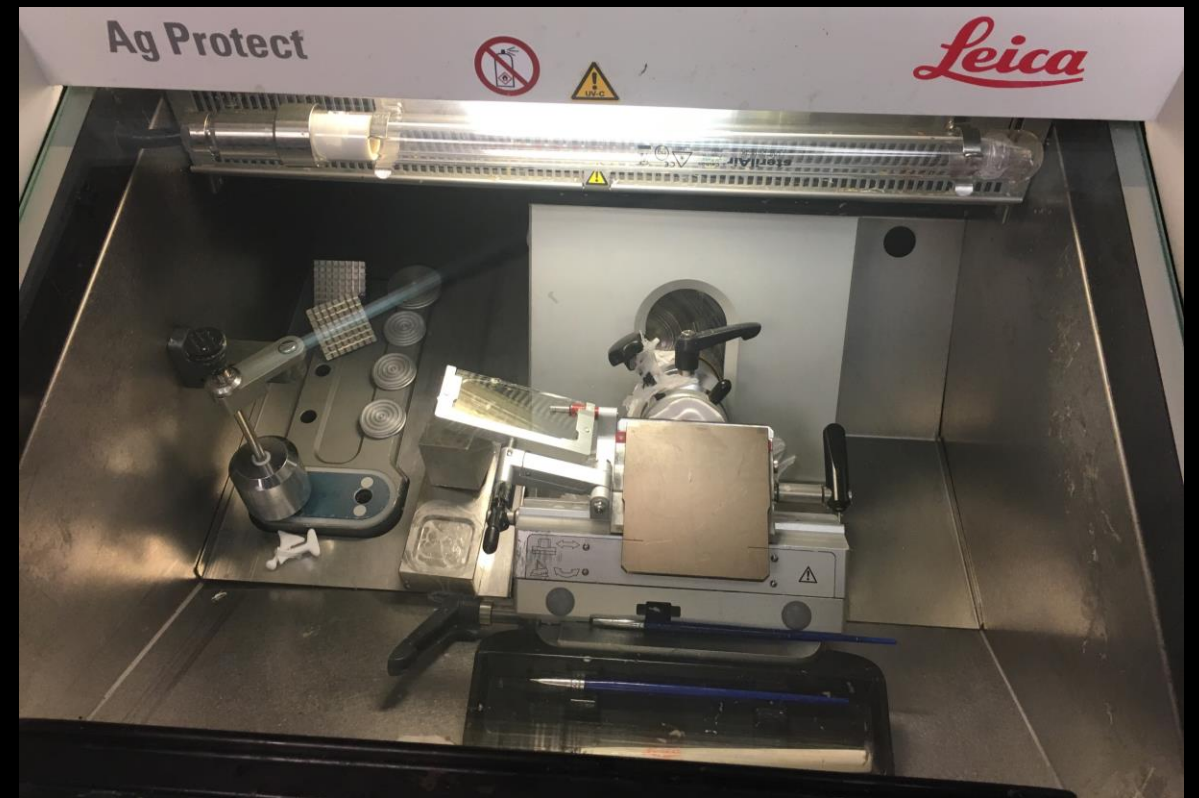
- The internal surface is tan-pink with diffuse tan papillary-like projections occupying approximately 95% of the overall internal lining
- The specimen consists of a uniloculated cyst containing a mucinous, bloody fluid





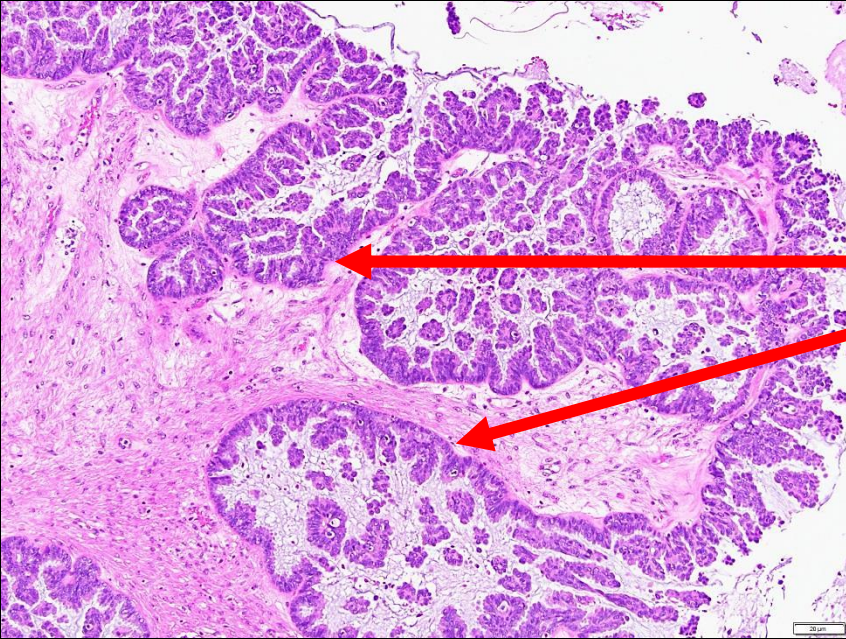
# Specimen is immediately evaluated by the pathologist in the frozen room

- Within 20min of resection, the pathologist performs a rapid microscopic analysis of the specimen
- The sample is placed on a metal tissue disk and is rapidly frozen to -20 to -30°C
- Specimen is embedded in a gel-like medium
- Small slices are made with a microtome (pictured to the right) and evaluated on a glass slide
- Initial impression of frozen section: borderline ovarian tumor (image not shown)

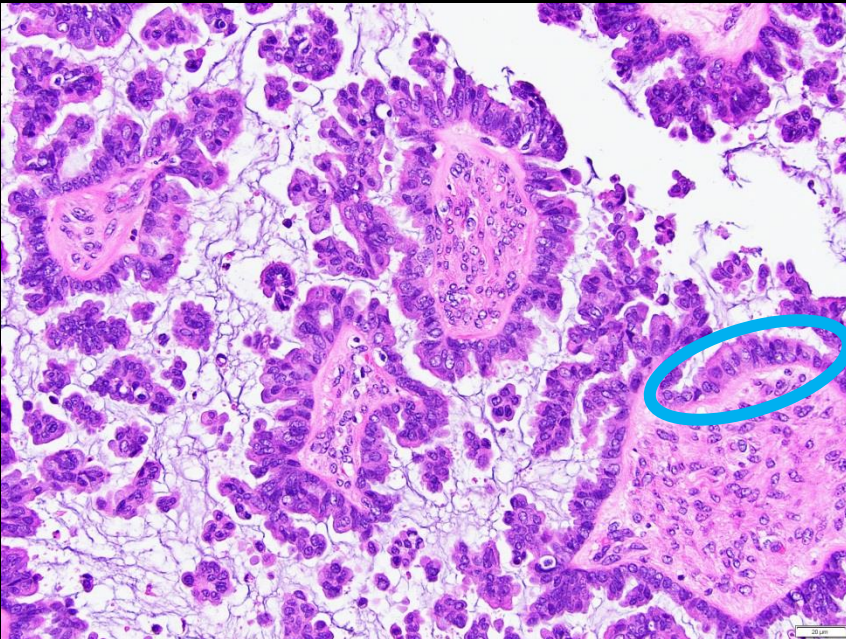




# Pathology



- Numerous delicate micropapillae with no fibrovascular cores (100x amplification)
- Micropapillae radiate in “medusa” nonhierarchical branching pattern from thick fibrous stalks
- Micropapillae are covered by cuboidal / columnar cells with relatively uniform mildly atypical nuclei (200x amplification)



Final Dx:

Serous borderline ovarian tumor, micropapillary type

# Case Discussion

- Borderline tumors of the ovary are tumors of low-malignant potential
- They are defined histologically by an atypical epithelial proliferation without stromal invasion
- Borderline ovarian tumors account for 14-15% of all primary ovarian tumors
- A diagnosis of borderline ovarian tumor on frozen-section implies the need for comprehensive surgical staging; however, no postoperative treatment is typically warranted and the tumors have an excellent prognosis

# Case Discussion

- Borderline ovarian tumors behave intermediately between benign cystadenomas and invasive carcinomas
- Serous borderline tumors with a micropapillary pattern behavior more similarly to low-grade invasive carcinomas, when compared to typical serous borderline tumors
- Management of borderline ovarian tumors includes resection and frozen-section examination, whenever possible

# References:

- American College of Radiology. ACR Appropriateness Criteria®. Available at <https://acsearch.acr.org/list> . Accessed August 29, 2019.
- Karseladze AI. [WHO histological classification of ovarian tumors. Geneva, 1999 (R.E. Scully, L.H. Sobin]. Arkh Patol 2005; Suppl: 1.
- Skirnisdottir I., Garmo H., Wilander E., Holmberg L. Borderline ovarian tumors in Sweden 1960-2005: trends in incidence and age at diagnosis compared to ovarian cancer. Int J Cancer 2008; 123: 1897.
- Trimble C.L., Trimble E.L. Ovarian tumors of low malignant potential. Oncology (Williston Park) 2003; 17: 1563
- Seidman J.D., Kurman R.J. Pathology of ovarian carcinoma. Hematol Oncol Clin North Am 2003; 17:909.