

Topics in Intraoperative Gynecologic Oncology

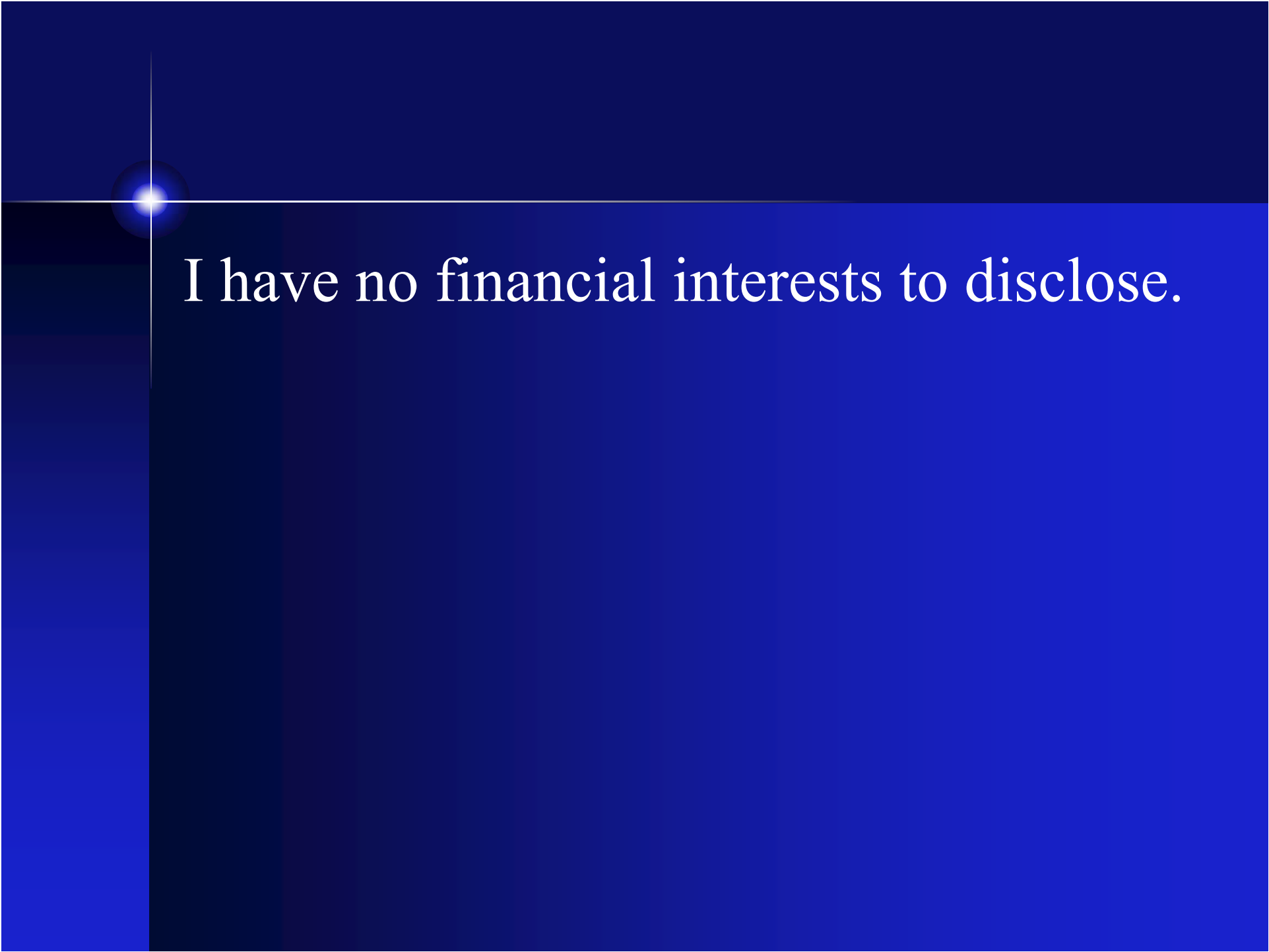
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I have no financial interests to disclose.

Learning Objectives

Please See Provided Material

Intraoperative Consult

- Cancer vs No Cancer
- Gynecologic vs Other Cancer
- Adenocarcinoma vs Squamous vs Sarcoma
- Ovarian Cancer
 - Epithelial Adenocarcinoma
 - Germ Cell Cancer
 - Sex/Cord Stromal Cancer

Cancer vs No Cancer

- Cervix: Radical Surgery vs Simple Surgery
- Uterus: Radical vs Minimally Invasive
- Ovaries/Tubes: Radical Debulking vs Resect Primary Tumor

Gynecologic vs Other Cancer

- Uterus/Ovary/Tubes
 - Radical Resection of All Visible Tumor
- Non-Gynecologic Cancer
 - Breast: Simple Resection then Chemotherapy
 - GI: Resect Primary Tumor then Chemo $\pm$ Rads
 - Lymphoma: Simple Resection and Chemo

Adenocarcinoma vs Squamous vs Sarcoma

- Adenocarcinoma
 - Radical Debulking of Tumor (except Cervix)
- Squamous Cell Carcinoma
 - Resect Only if Localized
 - METS Typically Unresectable
- Sarcoma
 - Resection of Primary Tumor
 - No Survival Benefit to Radical Debulking

Ovarian Cancer

- Epithelial Adenocarcinoma
 - Radical Debulking
(TAH/BSO/Omentectomy/Bowel Resection/Splenectomy/Diaphragm)
- Germ Cell Cancer
 - Young (USO/Omentectomy/Nodes/Biopsies)
 - Older (TAH/BSO/Omentectomy/ Nodes/Bx)
- Sex Cord Stromal Cancer
 - Same as Germ Cell Cancer

Topics in Intraop Gyn/Onc

- Vulva
- Vagina
- Cervix
- Uterus
- Tube
- Ovary

Intraoperative Consultation

Communication is the Key

Vulva

- Should Have Preoperative Biopsy
- Rare Need for a Frozen Section

Vulva: Cancer vs No Cancer

- Cancer
 - Excision
 - Simple
 - Radical
- Dysplasia
 - Excision
 - Laser

Vulvar Cancer

- All About the Depth
- If $\leq 1\text{mm}$ Depth
 - Simple vulvectomy
- If $> 1\text{mm}$ Depth
 - Radical Vulvectomy + Nodes
 - To the Fascia of UG Diaphragm
 - Bulbospongiosis
 - Ischiocavernosus
 - Superficial Transverse Perineal

Laser of VIN III



Lipoma of Vulva



Simple Vulvectomy

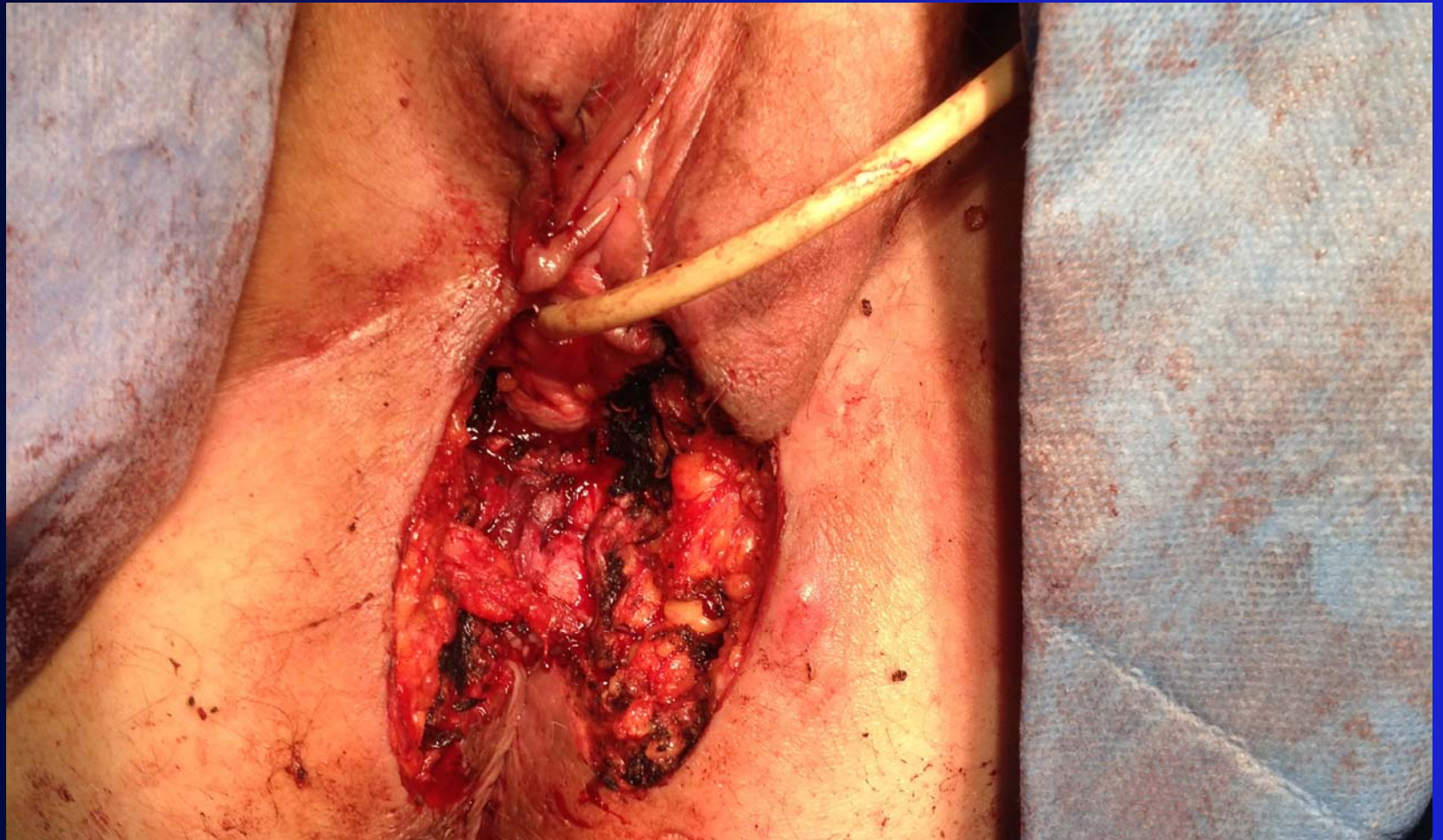




Vulvar Cancer



Radical Vulvectomy



Vulvar Reconstruction



Vulvar Cancer and Nodes ($> 1\text{mm}$)

- Sentinel Lymph Node
 - If $\leq 4\text{cm}$
- Inguinofemoral Lymphadenectomy
 - If $> 4\text{cm}$

Lymphedema







Vulvar Cancer

- When is Frozen Section Necessary?
 - If Suspicious Node On Sentinel Resection
 - If Positive: Formal Lymphadenectomy

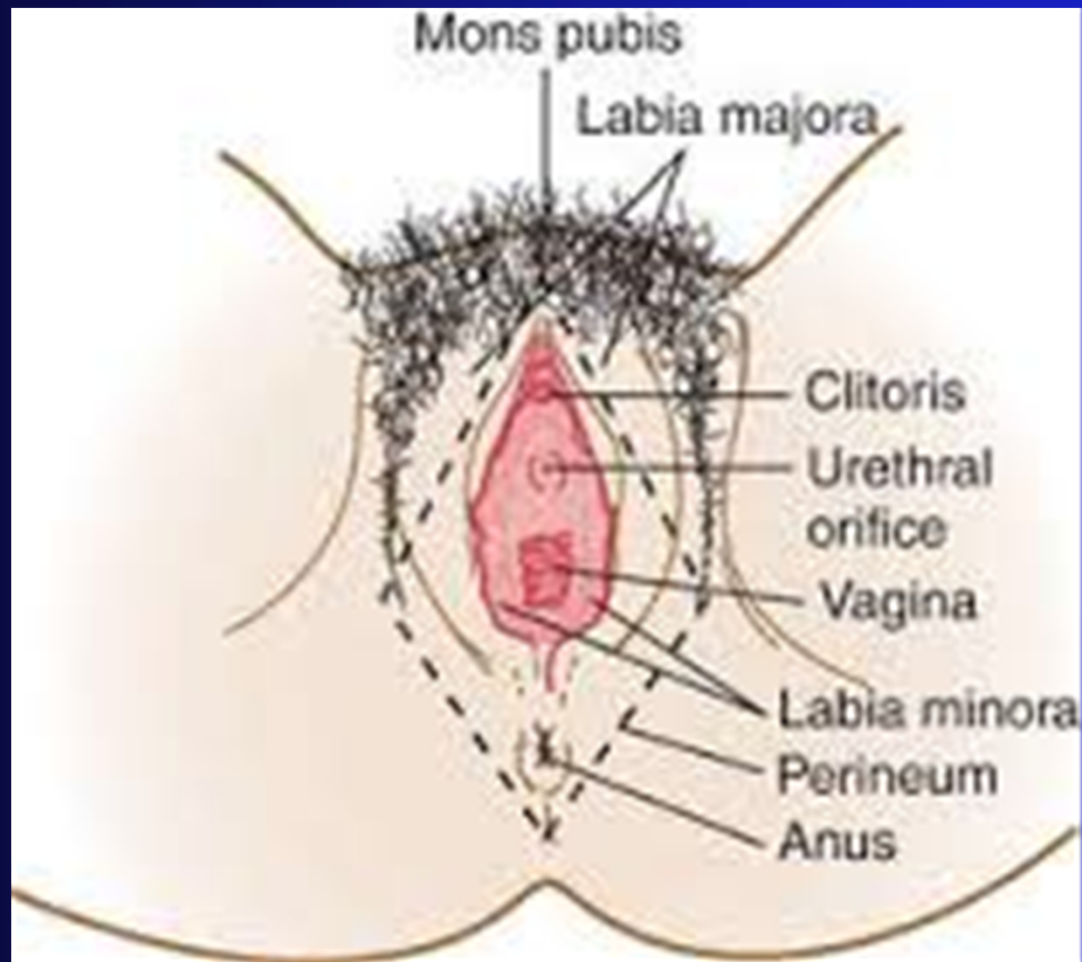
Vulvar Cancer

- Margins Important
 - If High Risk of Positive Margin: 1° Radiation
 - Periurethral
 - Perianal
 - If Positive Resection Margin
 - Re-Resect
 - Radiation

Any Excised Vulvar Lesion

Encourage Surgeon to Mark
Specimen at 12 O'clock

Marking Specimen





Paget's Disease of Vulva

- 15 – 20% with Adenocarcinoma
- Positive Margins Typical
- Mark Specimen at 12 O'clock

Black et al. Gynecol Oncol. 2007

Paget's and Marking Specimen



Paget's and Marking Specimen



Vulvar Melanoma

- 2 cm Margin Grossly
- Sentinel Nodes
- Treated as Systemic Disease

Cervical Disease

Cancer vs No Cancer

- Cervical Dysplasia: High Grade/CIS
 - CKC/LEEP
- Cervical Cancer
 - Depth and Width Determine Treatment
 - CKC/LEEP
 - Simple Hysterectomy
 - Radical Trachelectomy/Hysterectomy + Nodes

Cervix Disease

- Cold Knife Conization or LEEP
 - Equivalent for CIN, ACIS and Early Cancer
 - LEEP Considerably Cheaper
 - Frozen is a Bad Idea

Cervix Cancer

- < 3mm Depth & < 7 mm Width
 - Stage IA1 Disease
 - CKC/LEEP (If desires to maintain fertility)
 - Simple Hysterectomy

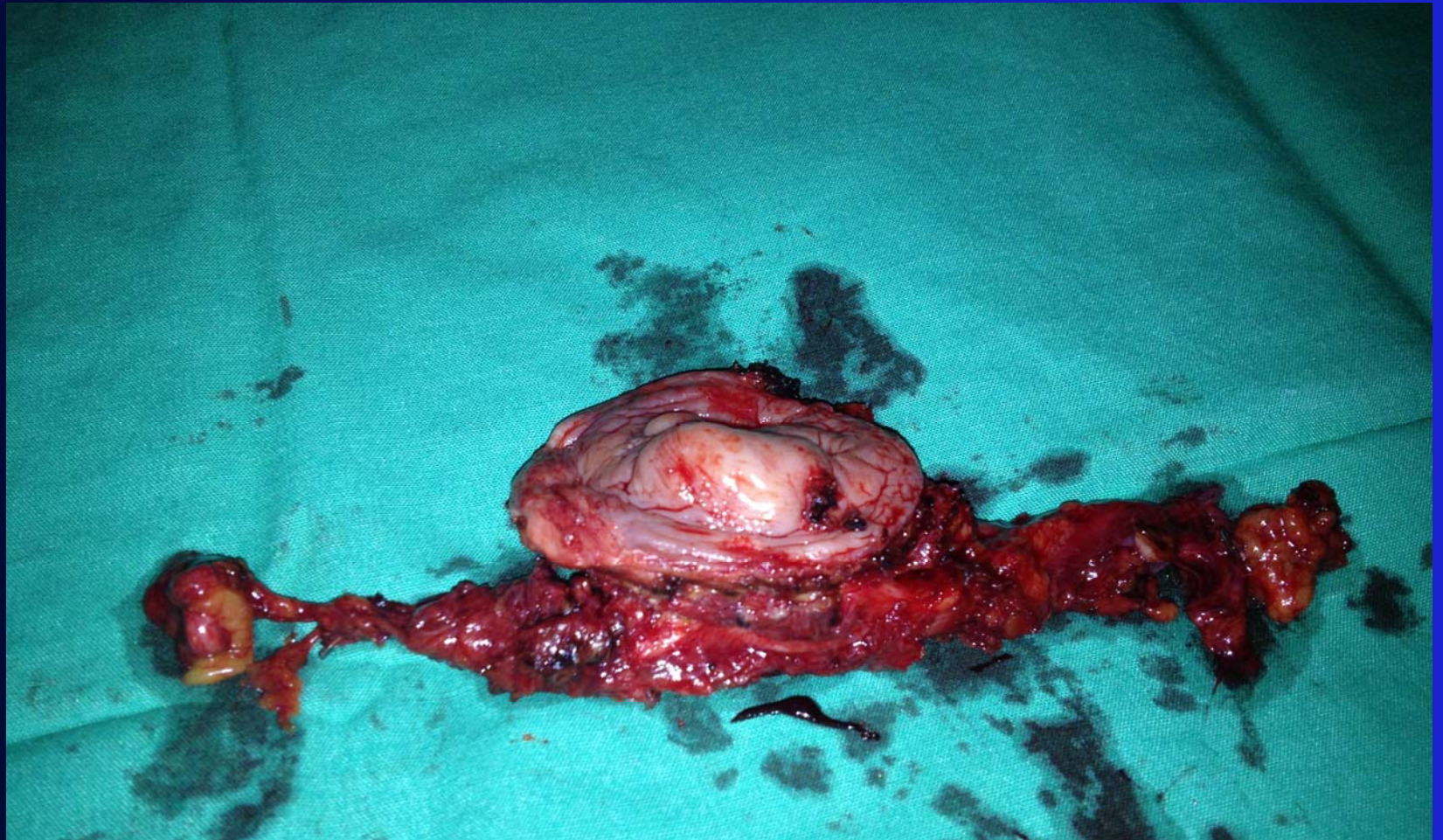
Simple Hysterectomy



Cervix Cancer

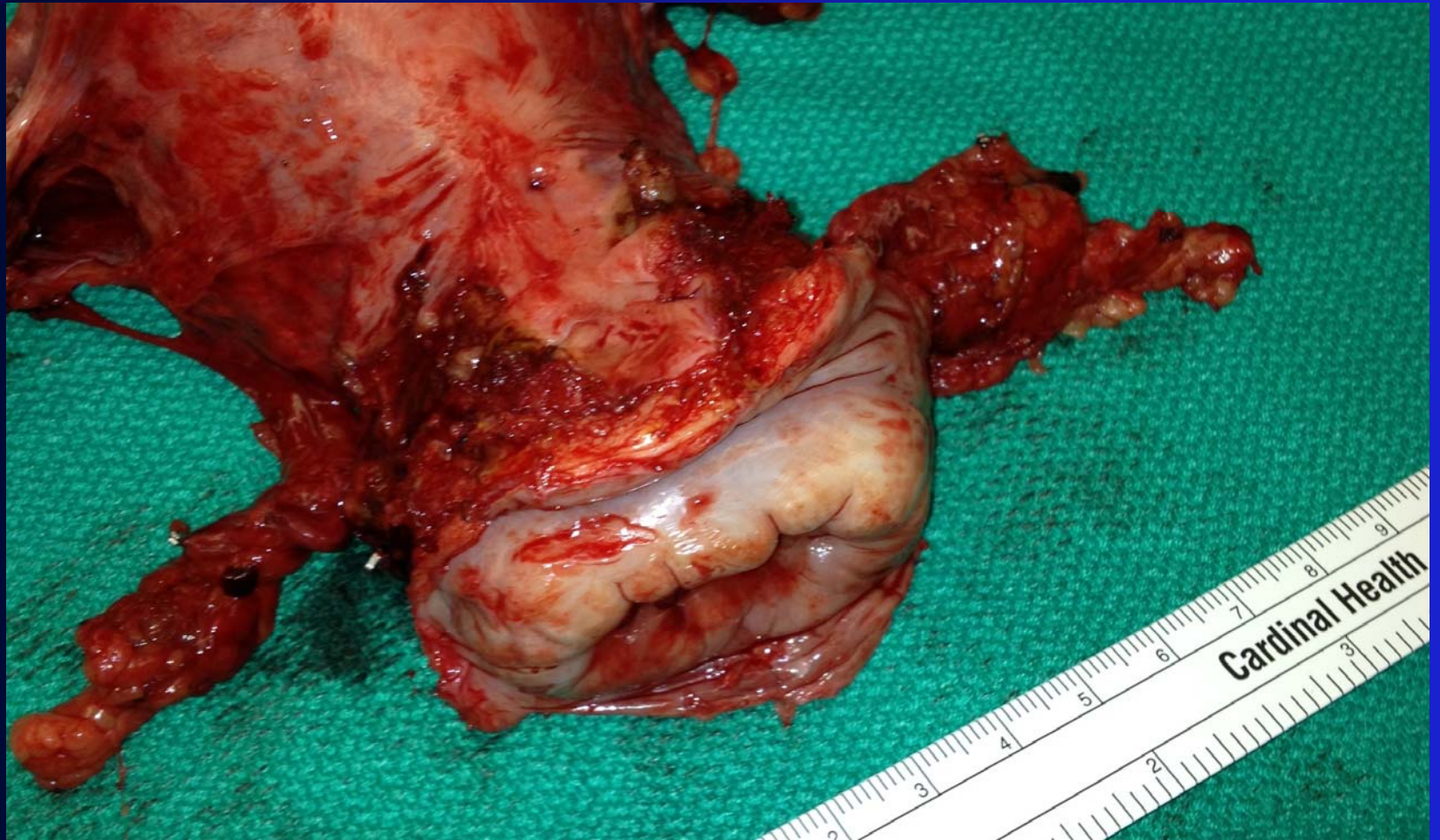
- 3 – 5 mm Depth & < 7 mm Width
 - Stage IA2 Disease
 - Radical Trachelectomy + Nodes (Fertility Sparing)
 - Modified Radical Hysterectomy + Nodes

Radical Trachelectomy



Cervix Cancer

- > 5mm Depth or > 7mm Width
 - Stage IB1: < 4cm Size
 - Radical Trachelectomy + Nodes ($\leq$ 2cm Best)
 - Radical Hysterectomy + Nodes



Cervix Cancer

- If > 4 cm : Stage IB2
 - Radiation + Chemotherapy
- If Stage II, III, IV
 - Radiation + Chemotherapy

Uterine Disease

Cancer vs No Cancer

- Benign
 - Hormones vs Minimally Invasive Surgery
- Hyperplasia
 - Without Atypia: Hormonal Therapy
 - With Atypia/EIN: Hysterectomy
- Cancer
 - Surgery : Hysterectomy $\pm$ Nodes $\pm$ Omentectomy and Biopsies

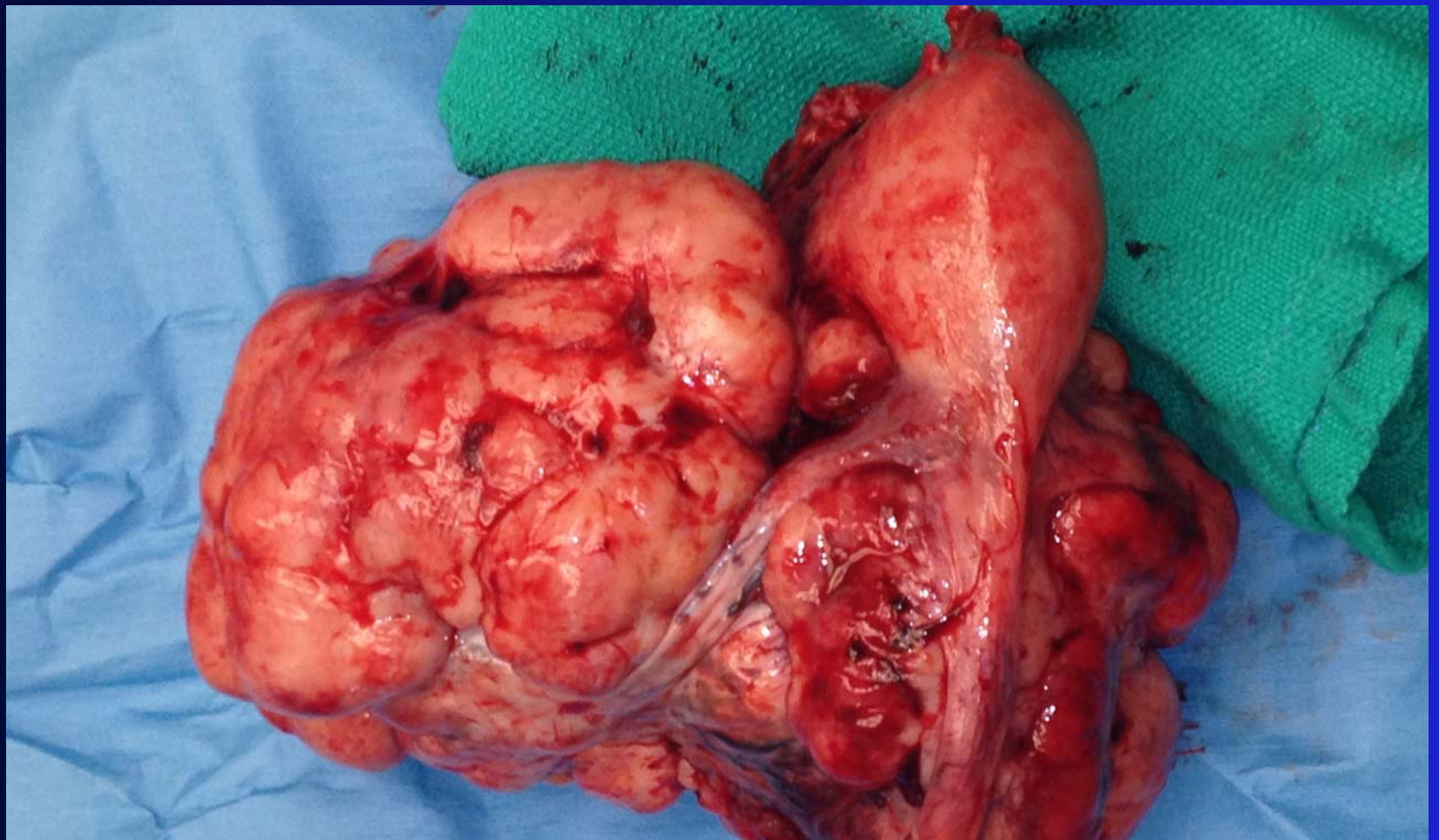
Uterine Cancer

Important Factors

- Grade 3
 - Nodes and At Least Vaginal Cuff Rads
- Depth ($> \frac{1}{2}$ Invasion)
 - Nodes and at Least Vaginal Cuff Rads
- Histologic Subtype
 - Serous and Clear Cell
 - Omentectomy/Abdominal Biopsies
 - Likely Chemo

Fibroids vs Sarcoma on Frozen Section

- Very Difficult Position for Pathologist
- Encourage Communication
- Lymphadenectomy Not Absolute
- Laparoscopic Lymphadenectomy at Later Date if Necessary

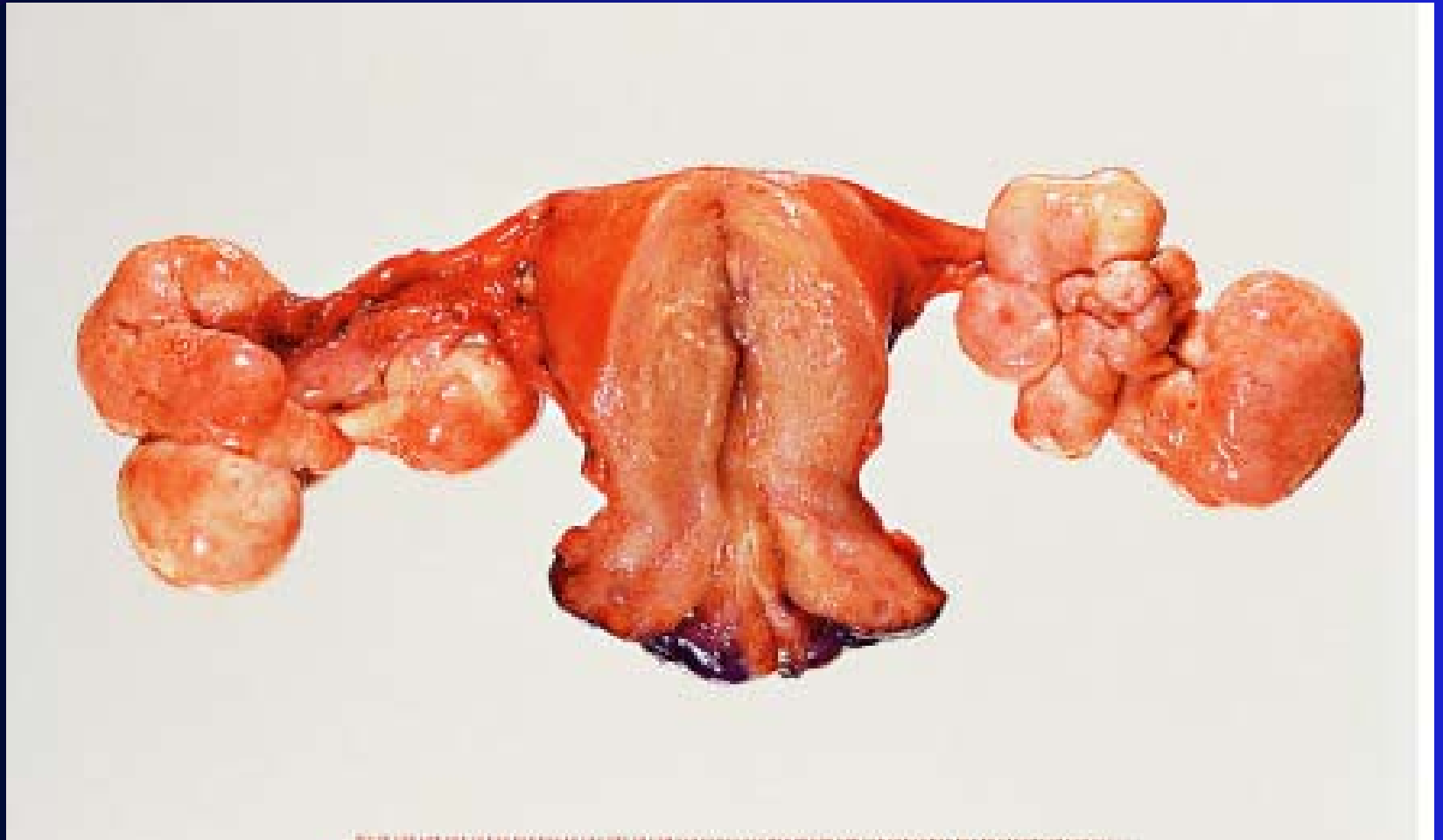


Ovarian Pathology

Gynecologic vs Other Origin

- Metastatic Disease
 - GI
 - Breast
 - Lymphoma
- Communication is Key

Krukenberg Tumor



Ovarian Pathology

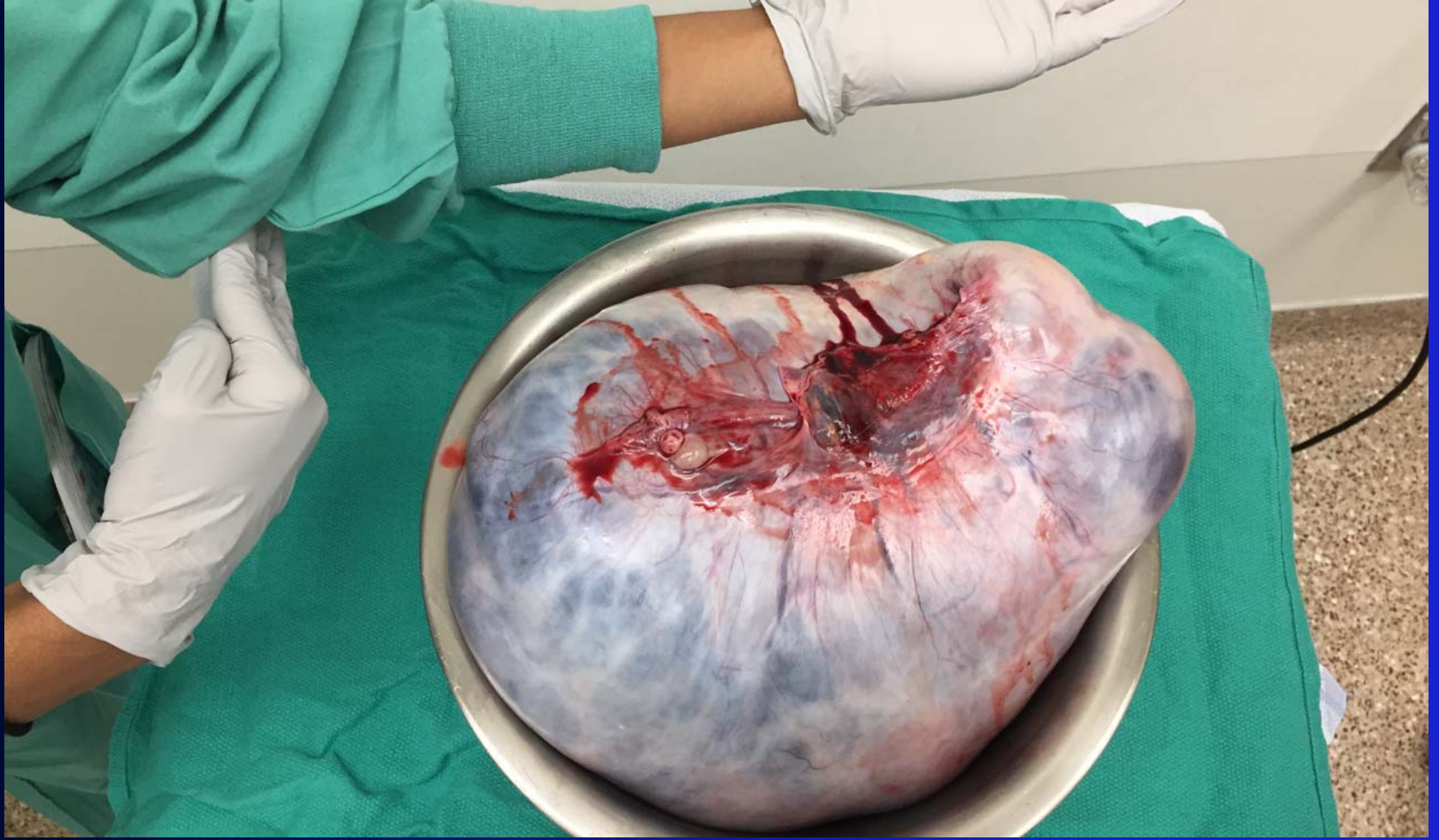
Cancer vs No Cancer

- Benign
 - Cystectomy/Oophorectomy
- LMP/Borderline
 - Cystectomy/Oophorectomy
- Cancer
 - Staging/Debulking

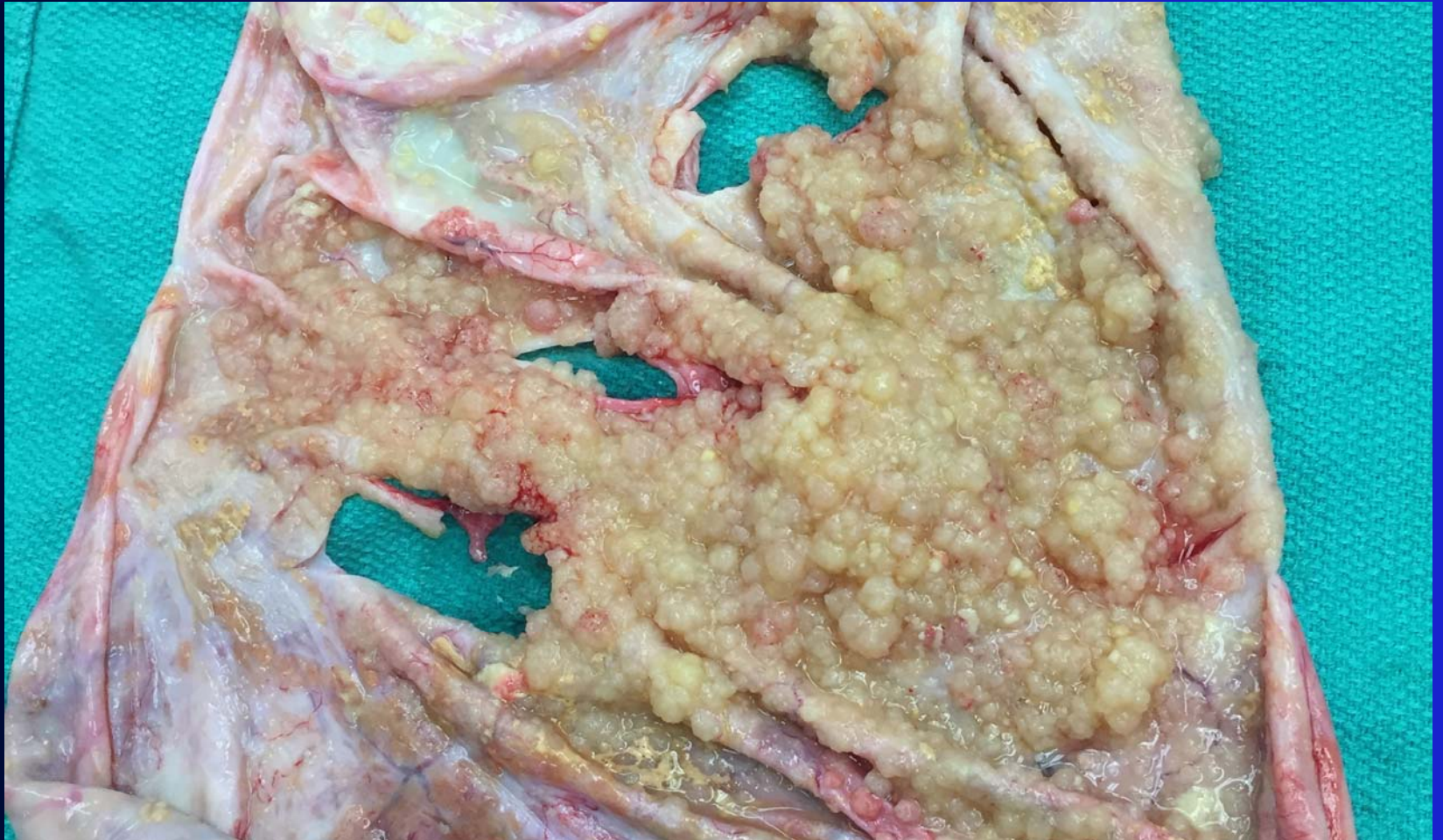
Borderline Ovarian Tumor (LMP)

- Cystectomy
 - 20% Recurrence
- Unilateral Oophorectomy
 - 5% Recurrence
- No Staging Necessary

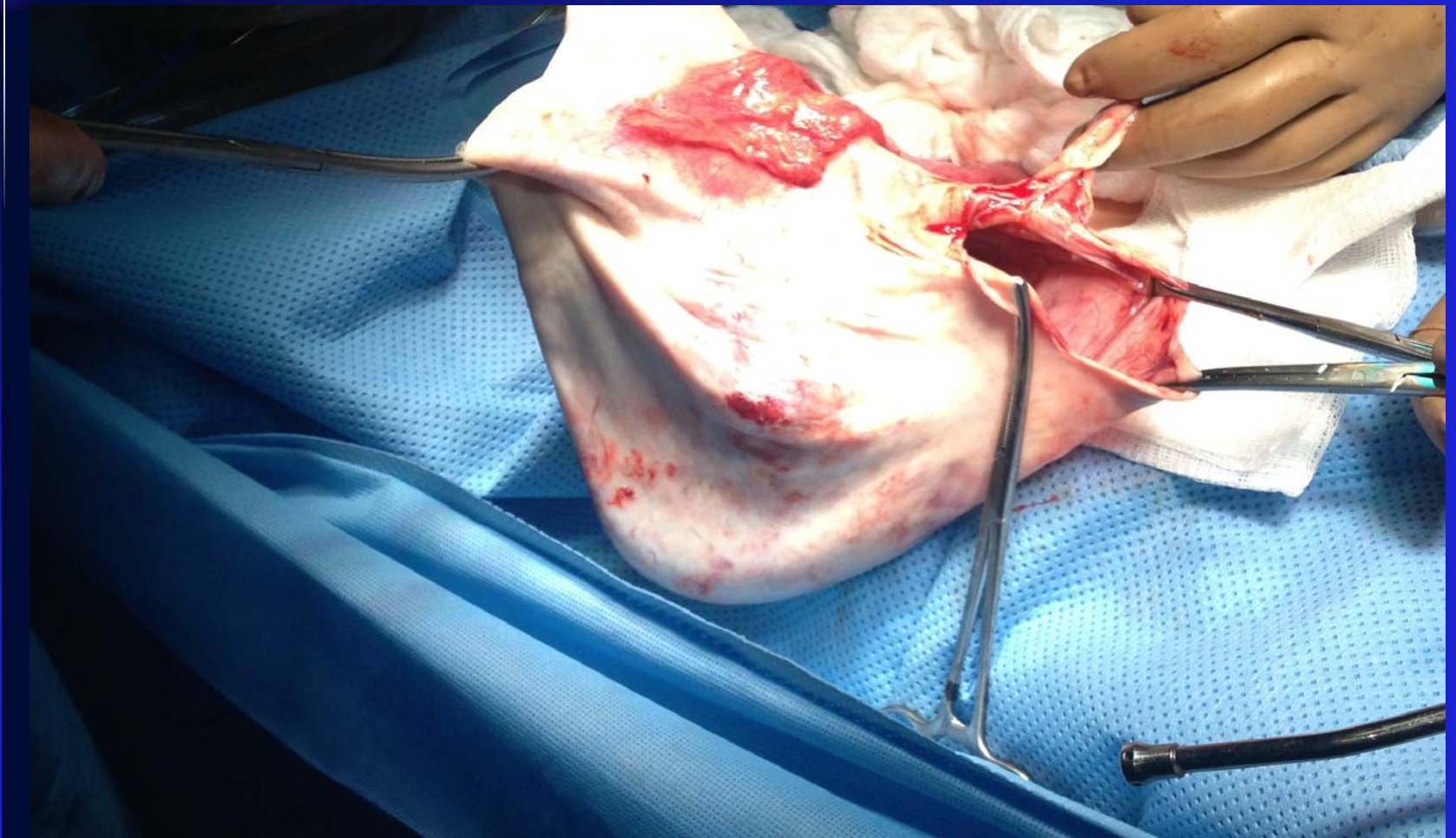
Shazly et al. Am J Obstet Gynecol. 2016



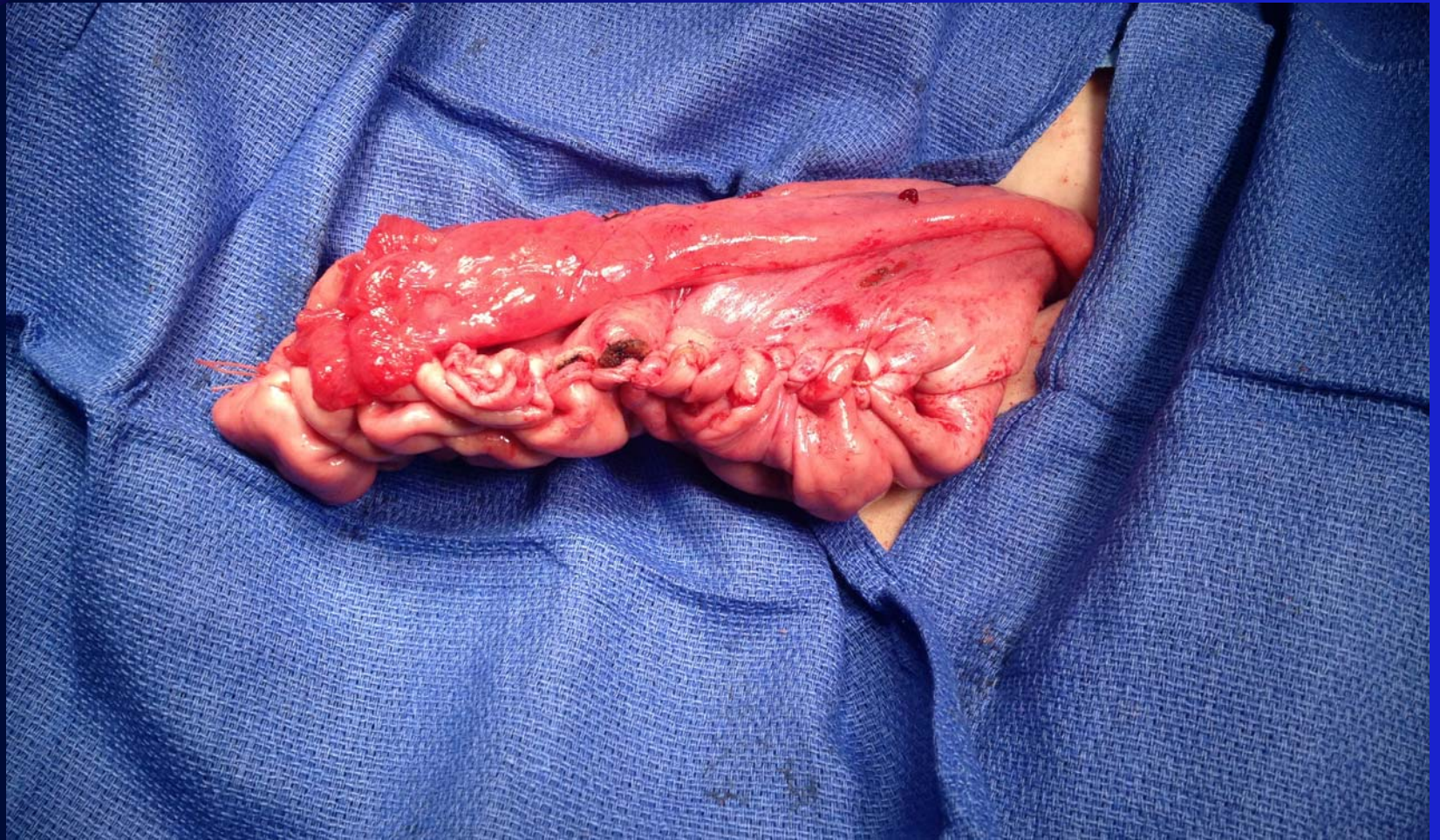
LMP



LMP with Cystectomy



LMP Following Cystectomy



Ovarian Cancer

- Epithelial Adenocarcinoma
- Germ Cell Cancer
- Sex Cord/Stromal Cancer

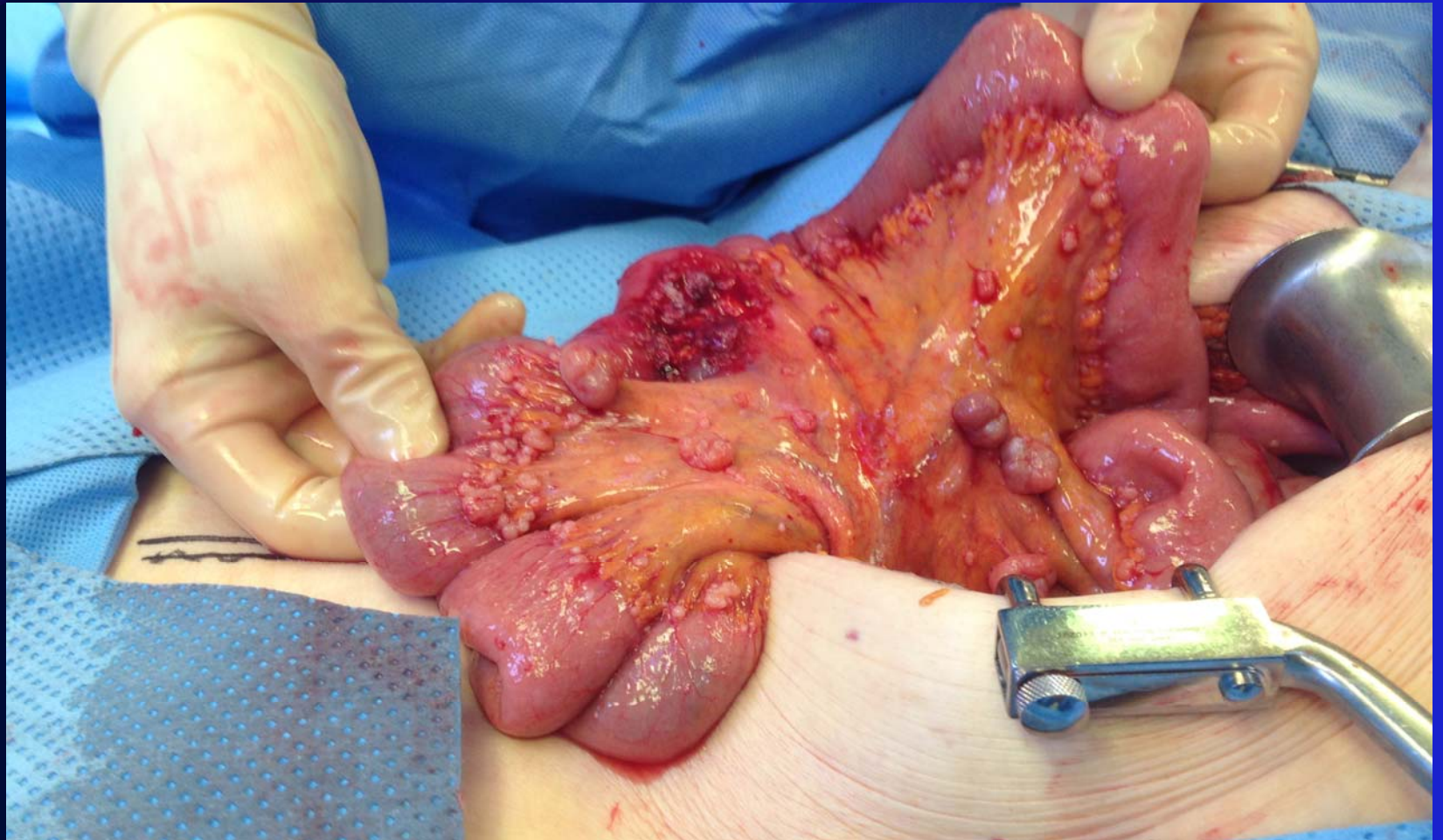
Epithelial Ovarian Cancer

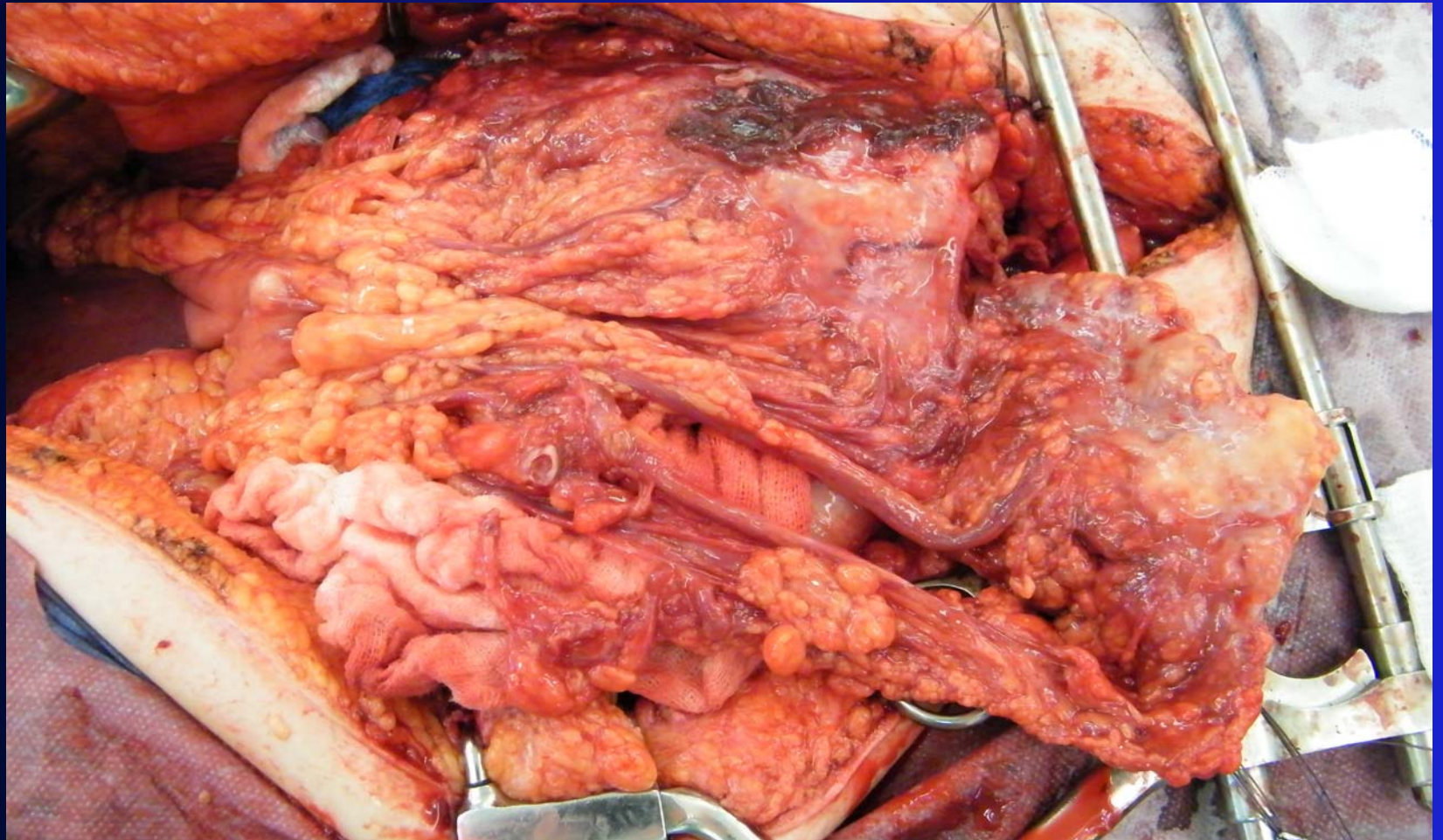
- Acceptable to Retain Uterus and Unaffected Ovary
- Often Bilateral Ovarian Disease
- Optimal Debulking is the Goal
 - Each Lesion < 1cm
 - Typical: TAH/BSO/Omentectomy/Nodes
 - Often: Bowel Resection/Splenectomy/Diaphragm Resection

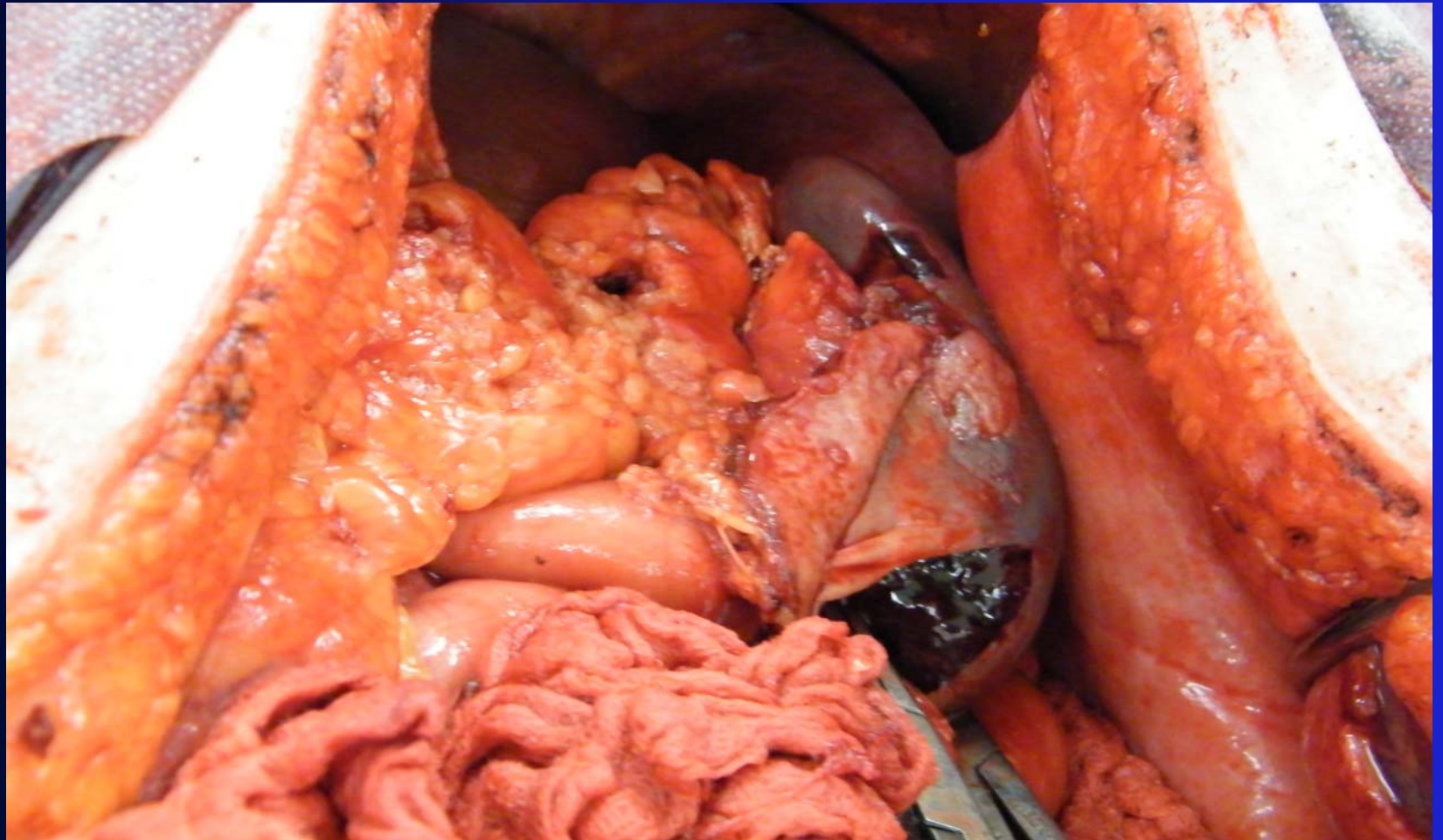
Ovarian Cancer in Pregnancy



Ovarian Cancer







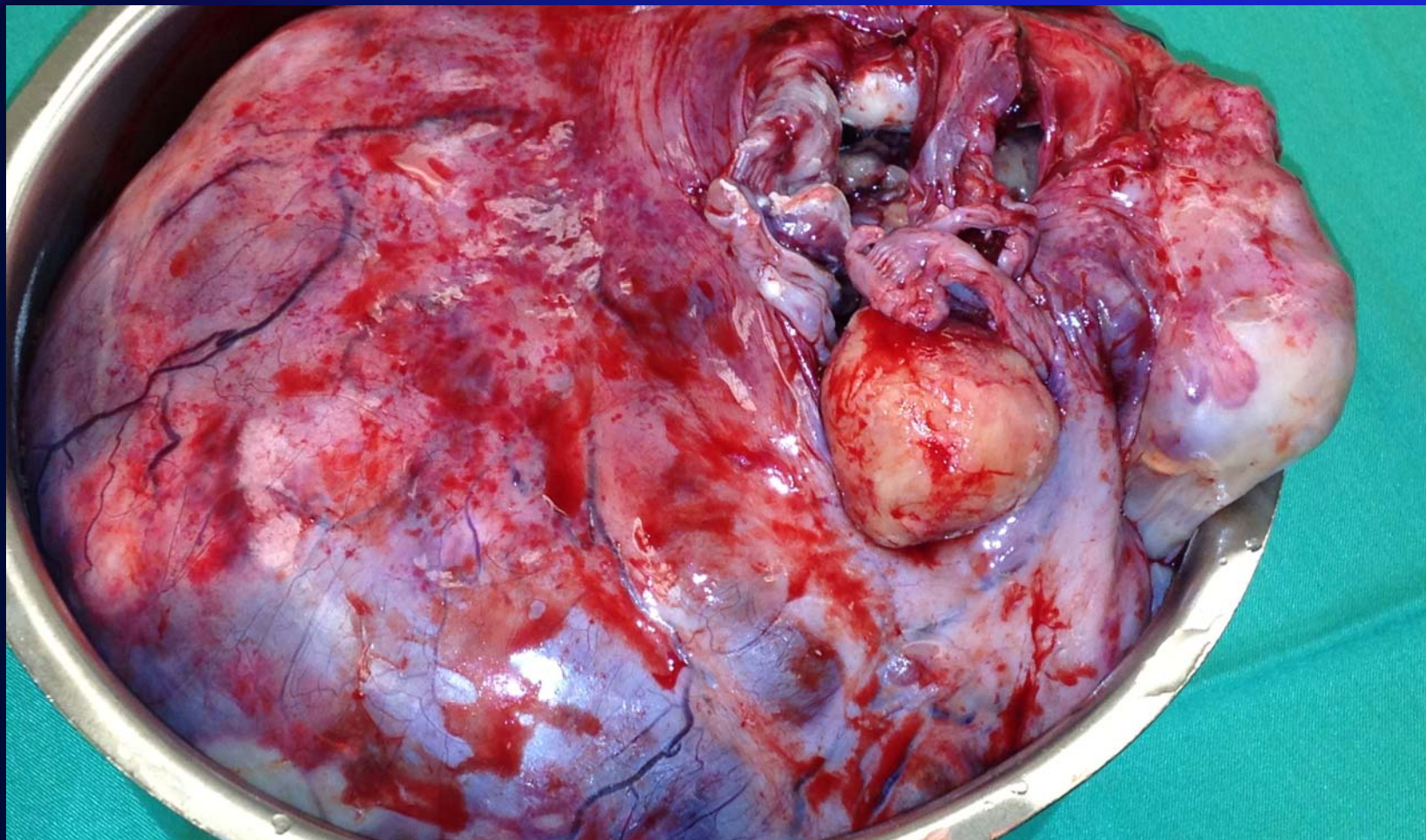
Germ Cell Cancer Ovary

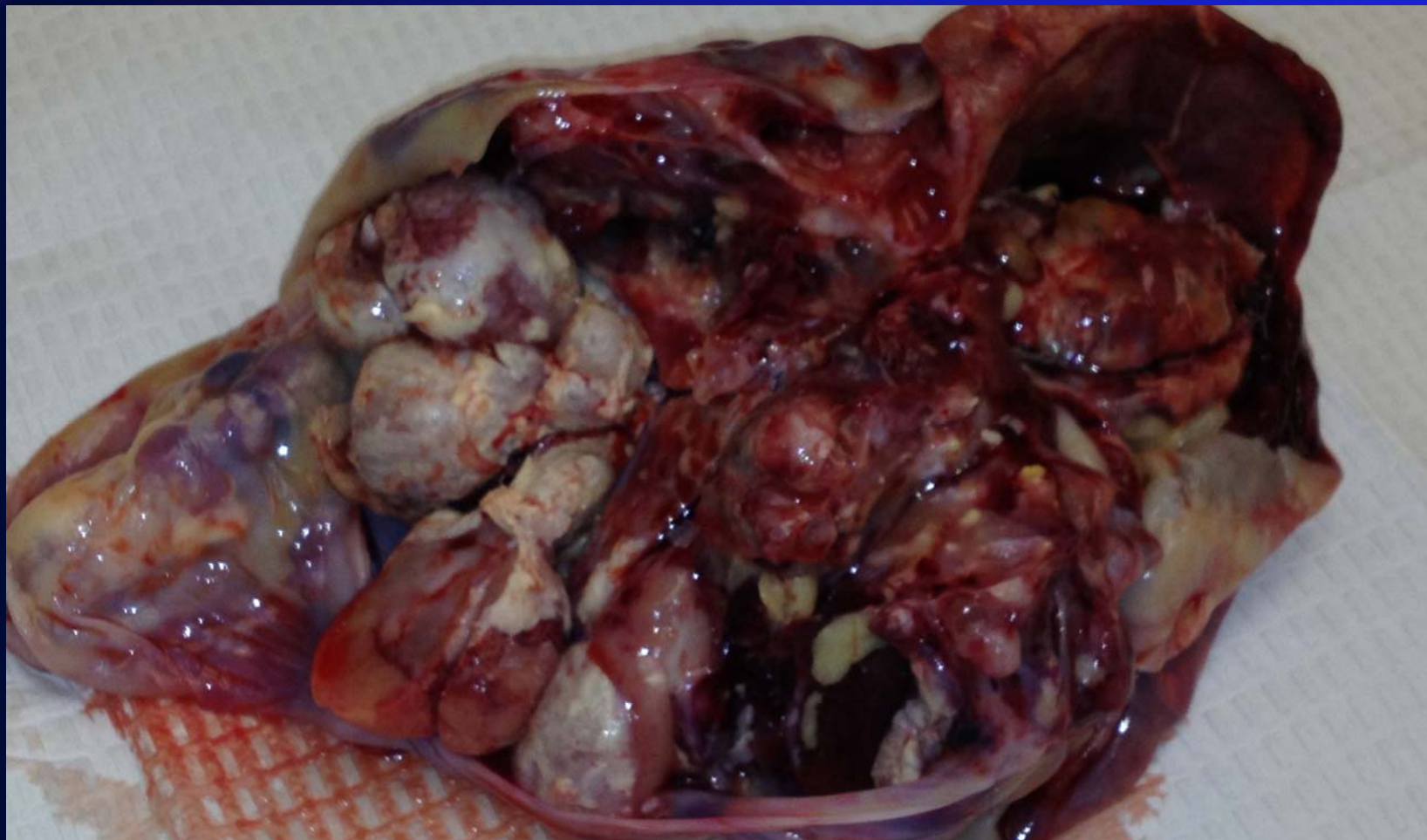
- Typically Unilateral
- If Young: Retain Uterus and Opposite Tube & Ovary (Even with METS)
- Oophorectomy/Omentectomy/Nodes/Biopsies (Debulking if Necessary)



Sex Cord/Stromal Cancer Ovary

- If Young: Retain Uterus and Opposite Tube & Ovary (Even with METS)
- Oophorectomy/Omentectomy/Nodes/Biopsies (Debulking if Necessary)
- If Granulosa Cell Cancer and Retained Uterus: Endometrial Biopsy (25% Cancer)



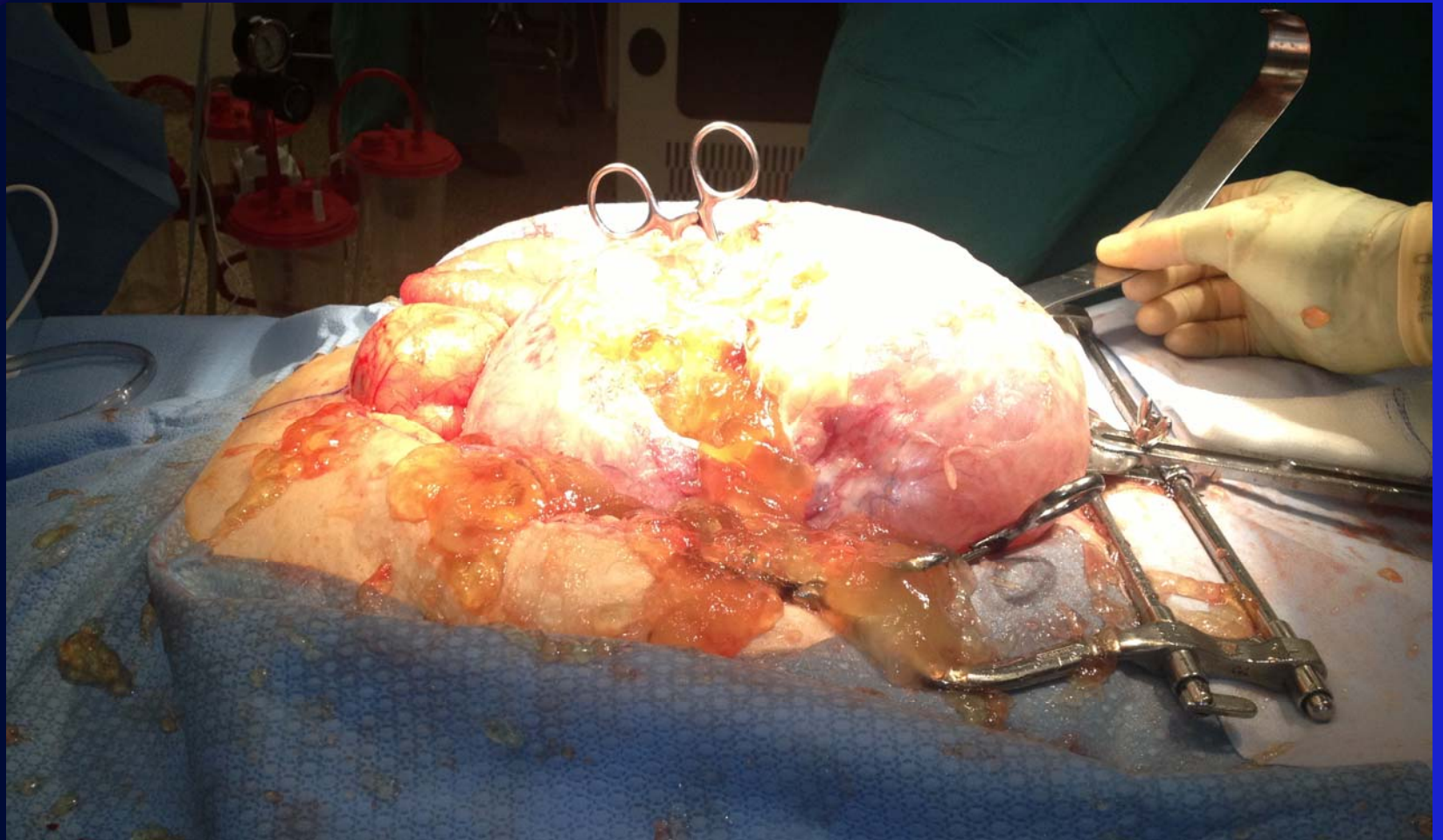


Mucinous Ovarian Mass

- Pathologists: Appendectomy
- Gyn/Onc Literature: No Appy

Lin et al. Am J Obstet Gynecol. 2013 Jan

Pseudomyxoma Peritonei



BRCA Abnormality

- Gonadal Vessels to Pelvic Brim
- Submit Entire Tube & Ovary
- Pelvic and Abdominal Washings

BRCA1 Abnormality and Aggressive Endometrial Cancer

- High Grade Serous Cancers
- 2.6% Risk if BSO Only
- Recommend Hysterectomy at time of Prophylactic Oophorectomy

Shu et al. JAMA Oncol Jun 2016

Fallopian Tube Cancer

- 40% – 70% Of All Ovarian Cancers
- Prophylactic Salpingectomy Now Common
- Most Arise in Fimbria
- No Need to Distinguish from Ovarian Cancer (Staged and Treated the Same)

