Topics in Intraoperative Gynecologic Oncology

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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 ± 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 $\leq 1$mm Depth
    - Simple vulvectomy
  - If $> 1$mm Depth
    - Radical Vulvectomy + Nodes
      - To the Fascia of UG Diaphragm
        - Bulbospongiosis
        - Ischiocavernosus
        - Superficial Transverse Perineal
Laser of VIN III
Simple Vulvectomy
Vulvar Cancer
Radical Vulvectomy
Vulvar Reconstruction
Vulvar Cancer and Nodes (> 1mm)

- Sentinel Lymph Node
  - If $\leq$ 4cm

- Inguinofemoral Lymphadenectomy
  - If $> 4$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

- Mons pubis
- Labia majora
- Clitoris
- Urethral orifice
- Vagina
- Labia minora
- Perineum
- Anus
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 (≤ 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 ± Nodes ± Omentectomy and Biopsies
Uterine Cancer
Important Factors

- Grade 3
  - Nodes and at Least Vaginal Cuff Rads
- Depth (> ½ 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

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)
Six 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

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)