LOW MALIGNANT POTENTIAL TUMORS OF THE OVARY

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Q1

What is a typical finding for serous low malignant potential tumors?

- A Greater than 10cm size
- B Bilateral tumors
- C Papillary projections
- D Invasive implants
Q2

- 28yo G0 post Lsc Left salpingo-oophorectomy. Pathology report at post op visit “Serous Low Malignant Potential Tumor”.

What is appropriate next step in her care

- A Hysterectomy, RSO and Staging
- B Laparoscopic Staging, preserve fertility
- C Ca125 level and CT imaging
- D Chemotherapy- Carboplatin/Paclitaxel
EPITHELIAL TUMORS

- Serous
- Mucinous
- Endometrioid
- Brenner
- Clear Cell
CONTROVERSIES

- Post-op diagnosis
- Re-staging
- Fertility sparing options

- Micropapillary Pattern
- Implants- Invasive vs Non Invasive
- Microinvasion
**Serous LMP**

- **Gross**
  - Similar to benign epithelial tumors
  - Increased papillary projections
  - Polypoid or fine papillae on surface

- **Micro**
  - Branching thick fibrovascular stromal core
  - Atypical stratified neoplastic cells
  - Ciliated cells
  - Psammoma bodies
Serous LMP

- 15% of Serous tumors
- 14% of all LMP/Malignant ovarian tumors
- Ave 9cm
- 34% bilateral
SEROUS LMP MANAGEMENT

- Fertility preserving surgery can be done
  - Oophorectomy vs cystectomy
- Inspect other ovary and upper abdomen
- Resect all visible disease
- Staging biopsies*
  - Completed in <12% of cases
  - Completed staging not proven to improve survival
  - Useful if diagnosis upgraded to carcinoma on final path. (10-15%)
  - Outcome linked to stage
POST OP DIAGNOSIS OF SEROUS LMP

- Baseline Ca125
- Baseline CT imaging
- Further staging surgery not recommended
Serous LMP Follow Up

- No consensus
- Stage I- 99.5% disease specific survival rate
- Rare recurrences treated surgically
- Pelvic U/S if cystectomy periodically
- Advanced stage- Periodic exams and Ca125
- Imaging based on symptoms, Ca125 and exams
SEROUS LMP RECURRENCE

- Median time to recurrence is 5-7 years
- Similar to original borderline tumor
  or
- Invasive carcinoma, low grade

- Surgical resection
- Chemotherapy, hormonal therapy
**Implants**

- Term used to imply better prognosis than “metastatic”

**Advanced Serous LMP tumors- Stage II-IV**

<table>
<thead>
<tr>
<th></th>
<th>Invasive</th>
<th>Noninvasive</th>
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<tbody>
<tr>
<td>Infiltration</td>
<td>Irregular infiltration of underlying tissue</td>
<td>Sharp demarcation from normal tissue</td>
</tr>
<tr>
<td>Architecture</td>
<td>Solid or cribiform nests with surrounding cleft</td>
<td>Glands or single cells</td>
</tr>
<tr>
<td>Atypia</td>
<td>Substantial atypia</td>
<td>Moderate atypia</td>
</tr>
<tr>
<td>Relapse Rate</td>
<td>44% (50/113)</td>
<td>19% (64/331)</td>
</tr>
<tr>
<td>Death from Disease</td>
<td>32% (38/119)</td>
<td>7% (30/432)</td>
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MICROPAPILLARY SEROUS LMP TUMORS

- Elongated micropapillae
- Not typical branching pattern
- Polygonal cells
- High nuclear to cytoplasmic ratio
- Few mitoses
- Bland nuclei
- >5mm area
Micropapillary Serous LMP Tumors

- Increased bilateral ovarian tumor
- Increased advanced stage disease
- Increased invasive implants
- Increased recurrence rate?
  - ? Related to invasive implant rate
- Increased risk of recurrence as low-grade serous carcinoma
- Further staging surgery should be considered in this population
Serous LMP - Microinvasion

- Microscopic foci of invasion of stroma by single cells and nests of moderately atypical cells
- $< 3 \text{mm linear dimension}$
- $< 10 \text{mm}^2$ area

- Prognosis same as serous LMP tumors without microinvasion
MUCINOUS LMP

**Gross**
- Very large
- Multilocular- multiple small cysts
- Thick fluid

**Micro**
- Endocervical cell type vs Intestinal
- <3cell layers thick
- No masses of atypical cells
- No severe anaplastic features
- No destructive stromal invasion
Mucinous LMP

- 14% of Mucinous tumors
- 10% of all LMP/Malignant ovarian tumors
- Ave 15cm
- 6% bilateral

- Largely stage I
- Excellent prognosis
Mucinous LMP Management

- Frozen section
- Challenging - multilocular non uniform cysts, subtle differences b/n tumor types, difficult to cut and mount

- Fertility preserving surgery can be done
- Due to large tumor size, multilocular -cystectomy often not possible -> oophorectomy
- Inspect other ovary, appendix and upper abdomen
- Resect all visible disease
- Staging biopsies*
Mucinous LMP Management

- No evidence of improved overall survival or PFS with adjuvant therapy, even in advanced disease
Mucinous LMP Follow up

- No consensus
- Most stage I
- Pelvic U/S if cystectomy periodically
- Rare recurrences treated surgically
CHALLENGES IN DISCUSSING DIAGNOSIS

- Cancer or not?
- Spread, but no invasion?
- Younger patients, desiring fertility?
- Limited studies on adjuvant therapy in advanced stage disease.
- Disproportionately affects patients who don’t deal well with uncertainty.
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