LASOP
Annual Resident & Fellow Symposium

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Patient History

• 53 year old Caucasian female
  – Screening mammography at outside hospital:
    • Left, spiculated breast mass
    • 1.6 cm greatest dimension
    • BI-RADS 4B
  – Core needle biopsy performed at UCLA
Core Needle Biopsy

Invasive ductal carcinoma with lobular features
MBR score: 6/9
Grade 2
Lumpectomy 3 weeks later
Invasive carcinoma

In situ
Lumpectomy E-Cadherin

Supportive of ductal differentiation
Sentinel node lymph node #1

Macrometastasis
1.2 cm
Sentinel node lymph node #2
Diagnosis

- Invasive ductal carcinoma with lobular features - Grade 2, 2.3 cm, ER/PR +, HER2 -
- Ductal carcinoma in situ (DCIS), solid and cribriform types, intermediate nuclear grade
- Metastatic carcinoma in two sentinel lymph nodes (SLN) (macro and micrometastasis)
- Atypical endosalpingiosis with calcifications (present in 3 of 4 sentinel nodes) (see Comment)
- pT2N1a
Comment / Differential Dx

- Given the unexpected finding of Mullerian-type tissue involving axillary lymph nodes, additional work-up is recommended to exclude the possibility of an ovarian or other Mullerian-type neoplasm as indicated.

- No known ovarian or peritoneal lesions at the time of lumpectomy and SLN dissection
Follow up

• PET scan (3 months later)
  – Intense FDG uptake within left adnexal mass (containing calcification) requires further evaluation with pelvic ultrasound
Follow up

- **Ultrasound**
  - Complex solid left adnexal mass, 6.2 cm in maximum diameter, previously measuring ~5 cm on ultrasound from 3 years prior from outside hospital (not known to us)
  - Imaging appearance is nonspecific and although is most consistent with dermoid, tissue diagnosis may be warranted
Operative course

Bilateral salpingo-oophorectomy with D&C:
• Frozen intraoperative consultation: at least borderline papillary serous neoplasm

Further surgical treatment initiated:
• Robotic assisted laparoscopic hysterectomy
• Bilateral salpingo-oophorectomy
• Bilateral pelvic lymph node dissection
• Left para-aortic lymph node dissection
• Omental biopsy
• Pelvic washing
Left Ovary

Serous borderline tumor
Size: 3.7 cm
Microinvasion: 0.2 cm
Right Ovary

Serous borderline tumor
Size: 1.0 cm
Pelvic LN
Endosalpingiosis
Pelvic Washing
Atypical cells
IHC: mammaglobin and GCDFP15 negative
Diagnosis

- Bilateral serous borderline tumor, multiple areas of microinvasion (serous tumor of low malignant potential)
- All lymph nodes negative, some with benign endosalpingiosis
- Pelvic washing with atypical cells consistent with serous borderline tumor
- pT1cN0Mx
Follow Up Addendum to Lumpectomy

- In view of the finding of bilateral serous borderline tumors of the ovaries, focal areas of the Müllerian-type tissue present in the axilla may be considered non-invasive implants in a background of endosalpingiosis. No invasion is identified.
Discussion

- Metastases of ovarian serous neoplasms to breast and/or axillary lymph nodes is rare
- Presents a diagnostic pitfall as breast and ovarian carcinoma can be similar
  - Papillary architecture seen in majority of serous ovarian carcinoma metastases
  - Need to rule out invasive micropapillary breast carcinoma

Recine, et al 2004¹
## Cystic inclusions in SLN differential diagnosis

<table>
<thead>
<tr>
<th></th>
<th>Benign Inclusion</th>
<th>Endosalpingiosis</th>
<th>Metastatic Micropapillary Carcinoma</th>
<th>Metastatic Ovarian Carcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Architecture</strong></td>
<td>Simple</td>
<td>Simple/complex</td>
<td>Complex</td>
<td>Complex</td>
</tr>
<tr>
<td><strong>Cytology</strong></td>
<td>Bland</td>
<td>Bland</td>
<td>Atypical</td>
<td>Atypical</td>
</tr>
<tr>
<td><strong>IHC</strong></td>
<td>P63 + SMMHC +</td>
<td>Mammaglobin-</td>
<td>Mammaglobin+ GCDFP + EMA pattern</td>
<td>Mammaglobin- GCDFP -</td>
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<td></td>
<td></td>
<td>GCDFP -</td>
<td>WT-1 + Pax-8 +</td>
<td>WT-1 + Pax-8 +</td>
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</tbody>
</table>
Benign inclusion in the lymph node

p63

SMMHC
Micropapillary Breast Carcinoma
EMA “inside out” appearance
Metastatic serous papillary carcinoma

Psammomatous calcifications
High grade nuclei with marked pleomorphism
Review of literature

- Rare reports of ovarian serous carcinoma with metastases to axillary lymph nodes\(^1\)
- One case of collision metastasis of breast and ovarian carcinoma in the axillary nodes\(^2\)
- In a long term follow up series of 137 serous borderline tumors, one case with advanced stage and invasive implants metastasized to an axillary lymph node\(^3\)
Patient follow up

- Patient doing well status 2 years post diagnosis
- Received adjuvant chemotherapy and radiation for breast carcinoma
- Ongoing aromatase inhibitor therapy
- Borderline serous tumors of ovary with non-invasive implants have a very good prognosis with recommended long term follow up\textsuperscript{3,4}
- Resection only for ovarian tumor with ongoing annual CT scans
- Bilateral salpingo-oophorectomy may have a beneficial effect on breast carcinoma
References


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