Case 6
• 64 YO lady
• THBSO for prolapse
• At gross:
  A 3 cm endometrial polyp in the fundus
Numerous irregular, large glands with leaf-like pattern
Large glands with broad-based papillary infolding into the lumen

Implantation base of the polyp: myometrium
Stromal cellularity is accentuated around the glands forming hypercellular cuffs with less cellular mesenchyme away from the glands.
stromal cells: hypercellularity, one or two mitoses, plump nuclei
epithelium: columnar, no atypical endometrial epithelium
Diagnosis?
Mullerian adenosarcoma
## WHO 2003

### mixed mullerian tumors

<table>
<thead>
<tr>
<th>Benign stroma</th>
<th>Malignant stroma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benign epithelium</strong></td>
<td><strong>Malignant epithelium</strong></td>
</tr>
<tr>
<td>Benign stroma</td>
<td>Adenofibroma</td>
</tr>
<tr>
<td></td>
<td>Adenomyoma (APA)</td>
</tr>
<tr>
<td>Malignant stroma</td>
<td>Adenosarcoma</td>
</tr>
</tbody>
</table>
Adenosarcoma

- 8% of all uterine sarcomas
- At any age but most are postmenopausal (14-89 years, median 60)
- Vaginal bleeding
- « Recurrent endometrial polyp » (5%) : retrospectively interpreted as adenosarcoma
- After pelvic radiation or Tamoxifen therapy

_Clement and Scully, Hum Pathol 1990_
Gross

- Polypoid or papillary mass
- 1 - 17 cm (5 cm)
- Grossly can not be distinguished from endometrial polyp
- Located:
  - endometrium 83%
  - cervix 7%
  - myometrium 4%
  - multiple site 7%
Architecture: phyllodes, leaf-like, intraglandular polypoid projection
Architecture : phyllodes
Epithelial component : Dilated, cystic glands
• Epithelium: proliferative endometrioid without atypia with frequent metaplasia (mucinous, squamous, ciliated)
Stroma: ESS or fibrosarcoma, atypia and mitoses (2-40/10HPF)
Hypercellularity is more intense around the glands with periglandular cuffing.
Sarcomatous component

- Heterologous elements
  24% of cases
  Rhabdomyosarcomatous differentiation, bone, cartilage or fat

- Sex-cord like differentiation
  13% of cases
• Myometrial invasion: 15-25% of cases
Sarcomatous overgrowth

- Defined as the presence of pure sarcoma, usually high grade, without a glandular component, occupying at least 25% of the tumor surface
- 8% of cases
- After many recurrences or be seen *de novo*
- Myometrial invasion 60% (sarcoma)
**Adenosarcoma – IHC**

Mesenchymal component ( = ESS)

*Soslow and Oliva 2008  Aggarwal et al 2012*

<table>
<thead>
<tr>
<th>IHC Marker</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER, PR</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>(57% if sarcomatous overgrowth)</td>
</tr>
<tr>
<td>CD10</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>(28% if sarcomatous overgrowth)</td>
</tr>
<tr>
<td>Ki67</td>
<td>5-20% (cuffing)</td>
</tr>
<tr>
<td></td>
<td>(30% if sarcomatous overgrowth)</td>
</tr>
<tr>
<td>WT1</td>
<td>80%</td>
</tr>
<tr>
<td>Desmin</td>
<td>32%</td>
</tr>
<tr>
<td>AE1/AE3</td>
<td>25%</td>
</tr>
<tr>
<td>CD34</td>
<td>35% but patchy</td>
</tr>
</tbody>
</table>
Adenosarcoma – differential diagnosis

• Mullerian adenofibroma:
  – phyllodes and leaf like pattern
  – no mitoses (< 2 mitoses/10HFP)
  – no atypia, no hypercellularity of stroma or cuffing
  – no heterologous element

Differential is impossible on curettage: adenofibroma = well differentiated adenosarcoma for Gallardo and Prat, 2009

2/55 cases: no atypia with < 2mitoses/10HPF on curettage and typical adenosarcoma on HT
Adenosarcoma – differential diagnosis

• **Endometrial polyp**
  – no phyllodes or leaf-like pattern
  – no periglandular cuffing
  – recurrence of large endometrial polyp
Adenosarcoma – prognostic

* Tannet et al, 2013 *

- **Myoinvasion:**
  15 - 25% of cases
  40 - 60% if sarcomatous overgrowth

- **Local recurrence:**
  25% of cases
  usually > 5 years following hysterectomy
  76% of cases if sarcomatous overgrowth
Adenosarcoma – prognostic

• Distance metastasis: 5% of cases

• Recurrences
  – 13% no myoinvasion
  – 46% if myoinvasion
  – 70% if sarcomatous overgrowth

  Gallardo and Prat, 2009

• Most important prognostic factors:
  – myometrial invasion
  – sarcomatous overgrowth
Adenosarcoma – prognosis


- 76% stage I at diagnosis (20% with extrauterine disease)
- Dead of disease:
  - 25% of patients
  - 71% if sarcomatous overgrowth
- Five-year survival:
  - 71% for stage I
  - 48% for stage III
Adenosarcoma – treatment

Tanner et al 2013, Sutton, 2013

- Surgical staging with hysterectomy
- Oophorectomy should be considered (low frequency of ovarian extension but for hormonal suppression: no influence on OS)
- No staging lymphadenectomy
- No adjuvant therapy for stage I, resected tumors
- Adjuvant therapy for high stage and sarcomatous overgrowth (sarcoma regimens)
TAKE HOME MESSAGES
Mullerian adenosarcoma

- Recurrent endometrial polyp: be careful
- Phyllodes and leaf-like pattern
- Periglandular cuffing
- Atypia and mitoses
- Look for myoinvasion and sarcomatous overgrowth