Anatomic sites and risk factors for deep dyspareunia

Paul Yong, MD, PhD, FRCSC
Assistant Professor, Dept of Obstetrics & Gynaecology, University of British Columbia; Centre for Pelvic Pain and Endometriosis & Multidisciplinary Vulvodynia Program Vancouver, Canada
Disclosures

• None
Clinical problem

• Superficial dyspareunia
  – Classic history
  – Hypoestrogenism
  – Dermatosis
  – Pelvic floor
  – Cotton swab test

• Deep dyspareunia: approach?
Objective

• To identify anatomic sites associated with deep dyspareunia, and possible risk factors
Building a foundation


Endovaginal ultrasound-assisted pain mapping in endometriosis and chronic pelvic pain

P. J. Yong¹,², C. Sutton¹, M. Suen¹ & C. Williams¹,²

¹Department of Obstetrics and Gynaecology, University of British Columbia and ²BC Women’s Centre for Pelvic Pain and Endometriosis, Vancouver, British Columbia, Canada
Potential anatomic sites

A = adnexae (ovaries)
PF = pelvic floor
Methods

• Analysis of cross-sectional baseline data from a prospective cohort at the BC Women’s Centre for Pelvic Pain and Endometriosis

• ClinicalTrials.gov: NCT02911090

• 87% consent rate

Assessment of anatomic sites

<table>
<thead>
<tr>
<th>Anatomic site</th>
<th>Endovaginal ultrasound-assisted examination</th>
<th>Tenderness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder</td>
<td>Single digit palpation of the bladder at the anterior vaginal wall.</td>
<td>Present/Absent</td>
</tr>
<tr>
<td>Pelvic floor (PF)</td>
<td>Single digit palpation of the levator ani bilaterally at 3 o’clock and 9 o’clock.</td>
<td>Present/Absent</td>
</tr>
<tr>
<td>Uterus-cervix</td>
<td>Single digit palpation of the cervix (cervical motion tenderness) and uterine fundus, and endovaginal ultrasound palpation of the visualized cervix and fundus.</td>
<td>Present/Absent</td>
</tr>
<tr>
<td>Cul-de-sac/ Uterosacrals</td>
<td>Single digit palpation and endovaginal ultrasound palpation of the right uterosacral, cul-de-sac, or left uterosacral.</td>
<td>Present/Absent</td>
</tr>
<tr>
<td>Adnexae (A)</td>
<td>Single digit palpation of the paracervical regions at 3 o’clock and 9 o’clock, and endovaginal ultrasound palpation of each visualized ovary.</td>
<td>Present/Absent</td>
</tr>
</tbody>
</table>
Study criteria

• Inclusion
  – Recruitment December 2013 – April 2015
  – Able to perform full endovaginal ultrasound-assisted pelvic exam

• Exclusion
  – Menopausal or age ≥ 50 years
  – Previous hysterectomy or oophorectomy
  – Not sexually active
Statistical analysis

• **Primary outcome:**
  Severity of deep dyspareunia: 0-10

• **Primary analysis:**
  – Association between tenderness at each anatomic site and the primary outcome

• **Secondary analysis:**
  – Association between possible risk factors and each tender anatomic site
Results

• n = 548
• Sample characteristics:
  – Age = 34.5 +/- 7.4 years
  – BMI = 25.3 +/- 5.7 kg/m^2
  – Caucasian 74%, Heterosexual 95%
  – Previous pregnancy 49%, Median 2 years college
  – Endometriosis 54%, IBS 53%, BPS 42%
  – Primary outcome (severity of deep dyspareunia) = 5.9 +/- 3.2 (0-10)
Primary analysis

• Bladder, Pelvic floor, Uterus-cervix, and the Cul-de-sac/uterosacral had an independent association with severity of deep dyspareunia

<table>
<thead>
<tr>
<th>Anatomic site</th>
<th>Pair-wise</th>
<th>Multiple linear regression$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean +/- SD</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>Bladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>102</td>
<td>7.4 +/- 2.5</td>
</tr>
<tr>
<td>Non-tender</td>
<td>446</td>
<td>5.5 +/- 3.2</td>
</tr>
<tr>
<td>Pelvic floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>155</td>
<td>7.0 +/- 2.6</td>
</tr>
<tr>
<td>Non-tender</td>
<td>393</td>
<td>5.4 +/- 3.3</td>
</tr>
<tr>
<td>Uterus-cervix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>168</td>
<td>7.0 +/- 2.8</td>
</tr>
<tr>
<td>Non-tender</td>
<td>380</td>
<td>5.4 +/- 3.3</td>
</tr>
<tr>
<td>Cul-de-sac/uterosacral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>313</td>
<td>6.6 +/- 2.8</td>
</tr>
<tr>
<td>Non-tender</td>
<td>235</td>
<td>4.8 +/- 3.4</td>
</tr>
<tr>
<td>Adnexae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>209</td>
<td>6.4 +/- 3.1</td>
</tr>
<tr>
<td>Non-tender</td>
<td>339</td>
<td>5.5 +/- 3.2</td>
</tr>
</tbody>
</table>

Regression adjusted for new or re-referral, physician, and abdominal trigger point
Number of tender anatomic sites

\[ r = 0.34, \ p < 0.001 \]

**Severity of deep dyspareunia**

**Number of tender anatomic sites**

\[ r = 0.34, \ p < 0.001 \]
Secondary analysis

• Tenderness of the **bladder** and **pelvic floor**:
  – More depression symptoms (PHQ-9)*

• Tenderness of the **uterus-cervix**:
  – At least one miscarriage and red meat consumption

• Tenderness of the **cul-de-sac/uterosacrals**:
  – Endometriosis

*Controlled for anti-depressant usage
Conclusion

• Severity of deep dyspareunia was independently associated with tenderness of the:

<table>
<thead>
<tr>
<th>Potential risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder: Depression symptoms</td>
</tr>
<tr>
<td>Pelvic floor: Depression symptoms</td>
</tr>
<tr>
<td>Uterus-cervix: Miscarriage, red meat</td>
</tr>
<tr>
<td>Cul-de-sac/uterosacral: Endometriosis</td>
</tr>
</tbody>
</table>

But not with the ovaries/adnexae
Future directions

• Formalizing the examination for deep dyspareunia:
  – Blinding
  – Reproducibility
  – Inter-observer reliability
  – Generalizability
Acknowledgements

- Research team
- UBC and Research Institutes
- Funding