Facing a pain or a functional trouble of the perineum, how can we make the differential diagnosis between pudendal neuropathy, arachnoiditis or symptomatic Tarlov’s cyst?

Jacques Beco M.D.
CHC Clinique Sainte Elisabeth
Heusy – Belgium
www.pudendal.com

AARMOR, Vichy, France, May 2012
Pudendal nerve anatomy

Possible levels of entrapment

1. Alcock’s canal: perineal and rectal branches
2. Fascia lunata
3. Sacrospinous ligament
4. Nerves through the ligament?
Pudendal neuropathy

Three clinical signs

1. Perineal hypo or hyperesthesia (pinprick)
2. Painful pudendal nerve during rectal examination
3. Painful « skin rolling test » of the perineal skin
Pinprick sensibility test

Vulvar

Para-Anal
Painful pudendal nerve
Skin Rolling Test
Validation of the 3 clinical signs of pudendal neuropathy (prevalence 20%)

<table>
<thead>
<tr>
<th>Test</th>
<th>Sens</th>
<th>Spec</th>
<th>PPV</th>
<th>NPV</th>
<th>OR</th>
<th>95% CI OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal sensibility</td>
<td>0.57</td>
<td>0.77</td>
<td>0.38</td>
<td>0.88</td>
<td>4.42</td>
<td>1.99 - 9.82</td>
</tr>
<tr>
<td>Painful pudendal nerve</td>
<td>0.70</td>
<td>0.71</td>
<td>0.37</td>
<td>0.90</td>
<td>5.52</td>
<td>2.51 – 12.15</td>
</tr>
<tr>
<td>Painful skin rolling test</td>
<td>0.55</td>
<td>0.84</td>
<td>0.47</td>
<td>0.89</td>
<td>6.56</td>
<td>2.74 – 15.68</td>
</tr>
<tr>
<td>The 3 (3 neg versus 3 pos)</td>
<td>0.68</td>
<td>0.89</td>
<td>0.60</td>
<td>0.92</td>
<td>16.97</td>
<td>4.68 – 61.51</td>
</tr>
</tbody>
</table>

Beco J, Climov D, Bex M
Pudendal nerve decompression in perineology : a case series.
Pudendal neuropathy and Descending Perineum Syndrome

1 = pudendal nerve

Normal

Descending Perineum
Perineocaliper
Measure of perineal descent with the Perineocaliper®

Beco J.: Interest of retro-anal levator plate myorrhaphy in selected cases of descending perineum syndrome with positive anti-sagging test. 
Frequency of the 3 clinical signs of pudendal neuropathy according to the perineal descent measured with a perineocaliper (n=820)

Frequency of the 3 clinical signs (%)

- Abnormal sensibility
- Painful pudendal nerve
- Positive skin rolling test

Perineal descent (cm)

Copyright J.Beco 2008
Specifications for a surgical release of the pudendal nerve

Release of the nerve from the sacral roots to the transverse muscle

1. Alcock’s canal: perineal and rectal branches
2. Fascia lunata
3. Sacrospinous ligament
4. Nerves through the ligament
5. Transposition of the nerve
Pudendoscopy: Alcock’s canal

Pudendal Nerve

Alcock’s Canal
ICS Glasgow 2011
32 patients, 15 months follow-up

Pudendal nerve decompression under endoscopic control (« pudendoscopy ») can cure or improve

<table>
<thead>
<tr>
<th>Condition</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perineodynia</td>
<td>62 %</td>
</tr>
<tr>
<td>Urge incontinence</td>
<td>66 %</td>
</tr>
<tr>
<td>Frequency</td>
<td>86 %</td>
</tr>
<tr>
<td>Painful bladder</td>
<td>58 %</td>
</tr>
<tr>
<td>Anal incontinence</td>
<td>84 %</td>
</tr>
<tr>
<td>Proctalgia fugax</td>
<td>77 %</td>
</tr>
<tr>
<td>Sexual arousal syndrome</td>
<td>87 %</td>
</tr>
<tr>
<td>Impotence</td>
<td>66 %</td>
</tr>
</tbody>
</table>
Pudendal neuropathy
The symptoms

Pee pee
Poo poo
Sex
Perineodynia
Think « pudendal nerve »
Trigger points
obturator - levator ani - piriformis

Travell & Simons: Myofascial pain and dysfunction. The trigger point manual.
Trigger points
obturator - levator ani - piriformis

Pee pee
Poo poo
Sex
Perineodynia
Trigger points, pudendal neuropathy
or sacral roots compression ???

Treat trigger points and see what happens !!
The Missing Link

Neuro-muscular troubles + Gynaecological position
=> Very late diagnosis !!!!!
The missing link

Perineologist

La Neurochirurgie
POUR LES NULS

Neurosurgeon

GYNÉCOLOGUE (AMATEUR)
Sacral roots in the spine or in the pelvis

Pee pee
Poo poo
Sex
Perineodynia

If Sacral Roots S2-S3-S4 !!

Pudendal nerve: only its territory
S2-S3-S4: PN territory + LEGS
# Sacral roots lesions S2-S4

<table>
<thead>
<tr>
<th>In the pelvis</th>
<th>In the spine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trauma</strong></td>
<td><strong>Trauma</strong></td>
</tr>
<tr>
<td><strong>Tumor</strong></td>
<td><strong>Tumor</strong></td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td><strong>Herniated disk</strong></td>
</tr>
<tr>
<td><strong>Endometriosis</strong></td>
<td><strong>Spinal stenosis</strong></td>
</tr>
<tr>
<td><strong>Piriformis syndrome</strong></td>
<td><strong>Arachnoiditis</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tarlov’s cyst</strong></td>
</tr>
<tr>
<td>Rarely Mentioned</td>
<td>Rarely Mentioned</td>
</tr>
<tr>
<td><strong>Classical Diagnosis</strong></td>
<td><strong>Classical Diagnosis</strong></td>
</tr>
</tbody>
</table>
Sacral roots or pudendal nerve?

Function of the sacral roots in the legs:
- Sensibility – Quantitative Sensory Testing (QST)
- Motricity – Electromyography and latencies
- Achilean Reflex

Search for an etiology:
- Piriformis syndrome: history and clinical examination
- Arachnoiditis and symptomatic Tarlov’s cyst: History and MRI

Helpful tests:
- Pudendal nerve blocks
- Sacral roots blocks
- Infiltration of the piriformis muscle
- Tarlov’s cyst aspiration
Clinical examination S1

L’atteinte de S1 entraîne :
- diminution de la force du triceps ;
- diminution ou abolition des réflexes achilléen et médio-plantaire du côté malade.

Fig. 517. – Syndrome S1.

L. Leger: Sémiologie chirurgicale
Quantitative Sensory Testing on S2 and S1 dermatomes

<table>
<thead>
<tr>
<th>Fibers tested</th>
<th>Current</th>
<th>Physiological sensations</th>
<th>Test S2 and S1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A beta</td>
<td>2000 hz</td>
<td>Vibrations</td>
<td></td>
</tr>
<tr>
<td>A delta</td>
<td>250 hz</td>
<td>Cold</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>5 hz</td>
<td>Warm</td>
<td></td>
</tr>
</tbody>
</table>
EMG S2-S3

Travell & Simons: Myofascial pain and dysfunction. The trigger point manual.
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Piriformis syndrome

- Pain in the buttock with sciatalgia L5-S1
- Normal lumbo-sacral MRI
- Internal rotation of the thigh increases pain

- Consequence of pudendal neuropathy ?
- Sacral roots S2-S3-S4 compression ?
Piriformis syndrome

Travell & Simons: Myofascial pain and dysfunction. The trigger point manual.
Arachnoiditis

**History**
- blood or contrast medium in cerebro-spinal fluid (latency)

**MRI**
- Different grades described by Aldrete
- Evolution with time
**Arachnoiditis**

J.A. Aldrete: Arachnoiditis.

The evidence revealed.

<table>
<thead>
<tr>
<th>Nerve root clumping</th>
<th>Extent</th>
<th>Associated lesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade I</td>
<td>u—one space</td>
<td>A—Pseudomeningoele</td>
</tr>
<tr>
<td>Grade II</td>
<td>v—two spaces</td>
<td>B—Syringomyelia</td>
</tr>
<tr>
<td>Grade III</td>
<td>w—three spaces</td>
<td>C—Clastic arachnoiditis</td>
</tr>
<tr>
<td>Grade IV</td>
<td>y—four spaces</td>
<td>D—Obliterative arachnoiditis</td>
</tr>
<tr>
<td>Grade V</td>
<td>z—four spaces</td>
<td>E—Thoracic arachnoiditis</td>
</tr>
</tbody>
</table>

Rorshach Test for a gynaecologist

Help
Arachnoiditis ??

Normal  Arachnoiditis
Difficult for a gynaecologist 😞

Need help to confirm the diagnosis…. on line ??
Symptomatic Tarlov’s cyst

Sacral roots compression??
Pudendal neuropathy??
Or double crush ??
Difficult differential diagnosis between

1. Pudendal neuropathy
   - with piriformis syndrome
   - with central sensitization

and

2. Arachnoiditis or Tarlov’s cyst
Sacral roots or pudendal nerve?

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Summary

If peepee, poopoo, sex or perineodynia

For the Perineologist:
Neurological examination of the lower limbs + lumbo-sacral MRI
(or ask a neurosurgeon)

For the Neurosurgeon:
Search for the 3 clinical signs of pudendal neuropathy, for trigger points and perineal descent
(or ask a perineologist)
Summary

In case of doubt or double pathology, treat the less dangerous first
Tarlov cysts in 29 yr old: penile pain 4 years. Abnormal QST and PNTMLT; No prostatitis. Pain free 3 years after third pudendal nerve block.

Response to PNPI
weeks 0, 5, 9

From Dr Stanley Antolak (USA)
More information:
http://www.pudendal.com