ANTEPORTAL EJACULATION
IN SPINAL CORD INJURED PATIENTS

Pr François GIULIANO, urologist
Hôpital Raymond Poincaré, Garches, France

President of the European Society of Sexual Medicine
Disclosures

Consultant for Menarini, Pfizer, Sanofi
Introduction
ISSM definition of acquired premature ejaculation (PE)

Sexual dysfunction characterized by
1) a clinically significant reduction in latency time, often to about 3 minutes or less
2) the inability to delay ejaculation on all or nearly all vaginal penetrations
3) responsible for negative personal consequences, such as distress, bother, frustration and/or the avoidance of sexual intimacy.

The etiology and the pathophysiology of acquired PE are unknown.
Systematic review of ejaculation in spinal cord injured (SCI) patients

- Conducted using the following MeSH terms in databases:
  - “Ejaculation” OR “Fertility”
  AND
  - “Spinal cord injuries” OR “Paraplegia” OR “Quadriplegia”

- 513 original articles identified (1948-2011)

- Databases and cross references identified 45 publications providing data about:
  - Antegrade ejaculation rate (whatever the method used to elicit)
  - Characterisation of spinal cord injury

- Data available in 3851 patients
Ejaculation in spinal cord injured men
50% complete / 50% quadriplegics (above T2)

Stimulation by masturbation / coitus
15% ejaculation

Failure of stimulation by masturbation / coitus
85% anejaculation

Stimulation by penile vibratory stimulation (PVS)
42% ejaculation

Failure of stimulation by PVS
43%

Failure of stimulation by PVS + midodrine
26.5%

Stimulation by PVS + midodrine
16% ejaculation

Intra rectal electrical stimulation (EEJ)

Surgical spermatozoa retrieval

• A large cohort of SCI patients has been assessed for urogenital function

• Unexpectedly post-SCI acquired PE patients were identified and observed.
Patients and Methods

• 2531 SCI patients from two rehabilitation centers assessed for neurogenic bladder and sexual dysfunction between 1986 and 2014

• Identified patients reporting post-SCI acquired PE underwent a structured interview regarding sexual dysfunction focusing on ejaculation.
Results

• Forty-six patients i.e. 1.8% of the studied population reported post-SCI acquired PE

• Mean age at SCI was 33.5 +/- 13.1 years.
Etiology of SCI

- **Traumatic** in 38 pts
- **Medical** in 8 pts: non traumatic spinal cord compression in 4, spinal cord infarction in 3, spinal cord ependymoma in 1.
• SCI complete in 19 pts (41 %) with the upper limit of the spinal lesion always located below T9.

Results cont’d
Results cont’d

• Post-SCI PE occurred from the first sexual activity in all but one patient.

• Ejaculation was described as dribbling by 40 (87%), with decreased forcefulness by 5 (11%), and normal by 1 patient.
• At each sexual intercourse attempt 43 pts (93%) reported anteportal ejaculation.

• Fourteen of them (33%) regained intravaginal ejaculation overtime (mean time: 1.6 +/- 0.8 mo) without any treatment including 8 with concomitant neurological recovery.

• For 3 pts (7%) ejaculation was intravaginal albeit premature with a mean intravaginal latency time of 1.4 min (0.2 to 3).
Results cont’d

• Ten pts (22%) reported dribbling anteportal ejaculation triggered only by erotic thoughts without genital stimulation, and not associated with orgasm.

• For the 33 others, genital stimulation was required.
Results cont’d

• In comparison to prior SCI, orgasm was absent in 10 (22%), decreased in 34 (74%) and unchanged in 2 pts (4%).

• In 36 pts (78%) complaining of both anteportal ejaculation and erectile dysfunction (ED), ED treatment was effective for all but only 2 recovered intravaginal ejaculation.
Results cont’d

Pharmacological management

Among 42 patients with AE,

- 14 (33%) recovered intravaginal ejaculation without treatment,
- 2 with prn PDE5i (15%),
- 1 with IC alprostadil (10%),
- 8 with daily antidepressants (62%),
- 1 with prn dapoxetine (50%),
- None with tramadol (out of 7).

Limitations: retrospective uncontrolled study.
## Review of the literature: PE in SCI patients

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</thead>
<tbody>
<tr>
<td><strong>Nb of patients</strong></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>23</td>
<td>46</td>
<td>80</td>
</tr>
<tr>
<td><strong>Complete lesion</strong></td>
<td>0/3</td>
<td>0/1</td>
<td>0/1</td>
<td>3/6</td>
<td>2/23</td>
<td>0/46</td>
<td>8%</td>
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<tr>
<td><strong>Sympathetic centres</strong></td>
<td>3/3</td>
<td>1/1</td>
<td>0/1</td>
<td>6/6</td>
<td>UNK</td>
<td>32/46</td>
<td>73%</td>
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<tr>
<td>(T12-L2) intact</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Putative SGE</strong></td>
<td>0/3</td>
<td>1/1</td>
<td>0/1</td>
<td>0/6</td>
<td>UNK</td>
<td>10/46</td>
<td>16%</td>
</tr>
<tr>
<td>(L3-L5) intact</td>
<td></td>
<td></td>
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<tr>
<td><strong>Lesion of pΣ/somatic</strong></td>
<td>3/3</td>
<td>1/1</td>
<td>0/1</td>
<td>6/6</td>
<td>23/23</td>
<td>46/46</td>
<td>98%</td>
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<tr>
<td>centres (S2-S4)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Anteportas</strong></td>
<td>1/3</td>
<td>1/1</td>
<td>1/1</td>
<td>5/6</td>
<td>23/23</td>
<td>43/46</td>
<td>95%</td>
</tr>
<tr>
<td><strong>Orgasm</strong></td>
<td>3/3</td>
<td>1/1</td>
<td>1/1</td>
<td>UNK</td>
<td>UNK</td>
<td>17/17</td>
<td>100%</td>
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</table>
The prototypical SCI PE patient

• Incomplete lesion

• Intact sympathetic centres (T12-L2)

• No or incomplete lesion of the SGE (L3-L5)

• Lesion of parasympathetic and somatic centers (S2-S4)
Spinal control of ejaculation

Brain

Inhibitory / activatory

T12-L2

L3-L5

S2-S4

Onuf's nucleus

SPINAL GENERATOR of EJACULATION

Chehensse et al Ann. Neurol. in press

Emission from the ejaculatory orifice

Emission from the prostate

Somatic EXPULSION

Contraction of the seminal tract

EMISSION

Inhibitory / activatory

Secretion of semen

Chehensse et al Ann. Neurol. in press

Onuf's nucleus
PE in SCI patients
Pathophysiological hypotheses

• Lesion at the spinal cord level of inhibitory supraspinal inputs
  AND/OR

• Lesion at the spinal cord level of peripheral inhibitory inputs
Conclusion 1

- This study identified rare cases of post-SCI PE most often anteportal and documented their neurogenic etiology.

- Acquired anteportal ejaculation triggered by psychogenic arousal without genital stimulation is unique to SCI patients.
Conclusion II

• Acquired anteportal ejaculation, the most severe form of PE, can be neurogenic due to lower thoracic or lumbar spinal cord lesion from traumatic or medical origin.

• Such evidence suggests that acquired recurrent anteportal ejaculation should prompt neurological examination to search for lower spinal cord lesion.
Take home message

Acquired premature ejaculation can be a neurogenic disorder