RLS like syndromes: Restlessness, akathisia, painful legs and moving toes. Restless legs syndrome in PD and other MD

Sleep in Movement Disorders
MDS-ES Course 2015

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RLS essentials

• Motor component: restlessness
• Mental component: urge to move

• Also daytime dyskinesias, while awake:
  - Stereotypies
  - Periodic leg jerks

RLS mimics:
conditions with restlessness and urge to move

• Akathisia
• Tics and Tourette
• Painful legs and moving toes
• Other causes of motor restlessness
Akathisia

- “A hysterical condition manifested by a sense of restlessness and inability to sit still” (Haskovec 1902)
- Since the 1950s the term has been used to describe a sense of restlessness and need to move in patients treated with neuroleptics
- Akathisia probably the most common of the so-called extrapyramidal side effects of the neuroleptics

No uniform accepted criteria for diagnosis of akathisia

- Restless movements (motor component)
- Strong and unpleasant promptings to move (mental component)
- Sensory nature of the phenomenon emphasized leading in part to confusion with RLS syndrome (Sovner and DiMascio)

Working definition (A.Col. of Neuropsychopharm.1973):
"An inability to sit or stand still and a drive to pace up and down"

Motor aspects of akathisia

- Semiporpoiseful leg and feet movements while sitting
- Shifting for one foot to another when standing
- Walking on the spot
- Unable to sit, stand or even lie still for any period of time
- May constantly pace the floor or even run about

Also a variety of hand movements:
- Simple shaking and wringing
- Complex movements such as stroking of the forehead
**Akathisia variants** (Barnes and Braude 1985)

- Acute akathisia
- Pseudoakathisia (no subjective symptoms)
- Chronic akathisia
- Tardive akathisia
- Withdrawal akathisia

**Akathisia and RLS**

- Major overlap in symptoms:
  - Sensory component
  - Urge to move

  - Stahl 1985
    RLS: “spontaneous akathisia”

  - Ondo 2015:
    “RLS: a focal form of akathisia”

**Akathisia and RLS**

<table>
<thead>
<tr>
<th>RLS</th>
<th>Akathisia</th>
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<tbody>
<tr>
<td>Peculiar sensations usually limited to the legs</td>
<td>Less conspicuous limb sensations; not limited to the legs</td>
</tr>
<tr>
<td>Present evening/night</td>
<td>Present at all times of the day</td>
</tr>
<tr>
<td>Prominent when lying or sitting; relieved when moving about</td>
<td>Most prominent when standing and improved by lying down</td>
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</tbody>
</table>
Tics and Tourette syndrome

- Tics consist of involuntary movements (motor component) in response to a subjective, inner urge to perform a movement (mental component).
- Tics share with RLS and with akathisia the urge to perform a movement: urge to tic.
- There is relieve of the “primary” sensory component with movement (Bliss 1980).
- Focal vs generalized urge: usually more generalized in akathisia and less relieved by movement.

Painful legs and moving toes (PLMT)

- Syndrome first described by Spillane et al. in 1971.
- Characterized by spontaneous achining pain in the lower limb and involuntary movements in the affected toes or feet.

Painfull legs and moving toes

- The etiology is varied, which includes a series of clinical disorders.
- The pathophysiology unclear.
- Treatment approaches, in most patients, usually temporary and not ideal.
The syndrome of painful legs and moving toes. 

Dressler D, Thompson PD, Gledhill RF, Marsden CD (Mov Disord 1994)

• PLMT develop in the setting of spinal cord and cauda equina trauma, lumbar root lesions, injuries to bony or soft tissues of the feet, and peripheral neuropathy.

• 4/20 no definitive cause found

• Pain preceded the onset of toe movements in 18 cases, but in 2 the reverse sequence occurred.

• Three patients with similar moving toes had no pain.

• The pain had many of the characteristics of causalgia, but none of the patients exhibited the full picture of reflex sympathetic dystrophy, and peripheral trauma was the trigger in only 5 cases.

Other causes of motor restlessness

• Anxiety, claustrophobia, related restlessness

• “Normal” restlessness

• Aberrant forms of gesture: mannerisms, stereotypies, rituals, habitual manipulations of the body

RLS and Parkinson disease

• Need to move is common in Parkinson disease

• May affect one limb or one side of the body or be a generalized, inner, feeling
1/30/2015

Akathisia in idiopathic Parkinson’s disease
(Lang and Johnson, Neurology 1987)

• 100 patients with Parkinson disease
• 68% periodically experienced the need to move and inability to remain still
• 26 could not explain the inability to remain still: AKATHISIA
• This patient had an urge to move but not to relieve for relieve of discomfort

Akathisia in idiopathic Parkinson’s disease
(Lang and Johnson, Neurology 1987)

• mild in 5, moderate in 13 severe in 7
• impossible to drive long distances, sit through a movie, attend social gatherings
• no consistent relationship with intake of levodopa
• some greatly improved with levodopa. Others better with drug holiday

PD: other causes of restlessness

<table>
<thead>
<tr>
<th>Off periods</th>
<th>Restless legs syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigidity</td>
<td>Inner tremor</td>
</tr>
<tr>
<td>Dystonia</td>
<td>Cramps</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Claustrofobia</td>
</tr>
<tr>
<td>Dyskinesias</td>
<td>Central pain</td>
</tr>
</tbody>
</table>
RLS and Parkinson disease

- Dopaminergic dysfunction in both disorders:
  - respond to dopaminergic treatment
  - worsen with neuroleptics
- Both conditions are associated to PLMS

PD and RLS

• RLS → PD
• PD → RLS

Calzetti et al. Neurol Sci 2009

- RLS in 13% of 118 PD patients
- RLS in 6% of 110 controls
- There is a control group
- Patients were medicated with DA
• RLS in 6% of 109 PD patients
• RLS in 4% of 116 controls
• There is a control group
• Patients were unmedicated and de novo

• Emergence of RLS in 5% (11 out 195) after 74% of reduction of DA after DBS (Kedia et al. 2004)
• Increased in PLMS index after DBS (Iranzo et al. 2002)

• RLS in 12% of PD 200 patients
• RLS in 7% of 173 controls
• There is a control group
• Patients were unmedicated and de novo

• Only urge to move in 40% PD vs. 18% controls (p<0.001)
Conclusions

• RLS does not predispose to PD
• PD probably does not predispose to RLS
• In PD most leg complaints are not RLS
• It does occur-----How to treat RLS in PD

Management of RLS in PD

• Add or increase the dose of a DA agent with long half-life (e.g., rotigotine) in the evening
• Add a non-DA agent that is effective in idiopathic RLS (e.g., gabapentin, pregabalin)
• Iron supplements if needed (ferritin <50 ng/mL)

• Thank you very much !!