Functional movement disorders – diagnosis and management

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handout

additional slides containing videos and photographs of patients will be shown in the presentation

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Functional movement disorders
Definition

- *causal role of psychological factors is questioned*
- *diagnosis is based on the presence of typical signs*
  - **inconsistency in time, often depending on attention and non-physiological maneuvres**
  - **incongruence with movement disorders known to be associated with „organic“ neurological diseases**
- *basic diagnostic rules*
  - **positive signs of functional origin must be present (= diagnosis cannot be made per exclusionem)**
  - **clinical features incompatible with organic disease must be evident and unequivocal**

Functional movement disorders
Epidemiology

- 2% cases in current neurological practice
- up to 10% in specialized centres
- 3:1 women/men
- age at onset: mostly between 20 and 50, rare in childhood and senescence
- tremor, dystonia, myoclonus and gait disorders the most frequent
- + non-epileptic seizures, palsies

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Common features of FMD

Suggestive history

- sudden onset, rapid progression
  - often following minor injury/surgery/stressful event
- variable patterns in time, atypical spread, severe pain
- fluctuations in severity, spontaneous remissions and exacerbations
- inadequate functional performance
- history of
  - previous somatizations
  - former health care profession
- secondary gain: compensation claim, social allowances

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Common features of FMD
Clinical examination

movements and/or postures showing

- **inconsistency**
  - **variability of amplitude, frequency, distribution over time**
  - **distractibility, suggestibility, suppressibility**

    (effect of placebo or non-physiologic procedures inadequate improvement or worsening by various factors)
  - **disability is disproportionate to objective findings**
- **incongruence**
  - **mixed, bizarre, do not present or progress according to known organic phenotypic patterns**

    (e.g. facial dyskinesia in hemidistribution)

Common features of FMD
Clinical examination

- **additional signs**
  - **bizarre gait**
  - **high energetic expenditure, extreme slowing of movement**
  - **false weakness, non-anatomical sensory disorder**
  - **inadequate pain**
  - **„la belle indifférence“, „facies martyrea“**

may require a longer observation and examination than for most movement disorders

Core specific features of FMD

Functional tremor

- **distractibility: frequency changes, decreased amplitude or full suppression with distraction**
- **entrainment: the native tremor frequency is replaced with that requested to be performed in a less affected body part**
- **coactivation, co-contraction: simultaneous tonic contraction of antagonistic and/or distant muscle groups in the affected limb**
- **suppresibility by contralateral ballistic movement: brief pause or substantial amplitude reduction**
- **variations in tremor frequency, axis and body distribution**

may require laboratory confirmation – surface EMG, accelerometers, ...

Core specific features of FMD

Functional dystonia

- **incongruent patterns**
  - **sudden onset**
  - **fixed dystonia at rest from the outset**
  - **unusual distribution: adult onset in legs, hemifacial dystonia (including lips and platysma)**
- **variable resistance to passive manipulation**
- **distractibility or absence of dystonia when unobserved**
- **possible additional late signs**
  - **secondary skin dysautonomia („complex regional pain syndrome type 1“)**
  - **contractures**

Core specific features of FMD

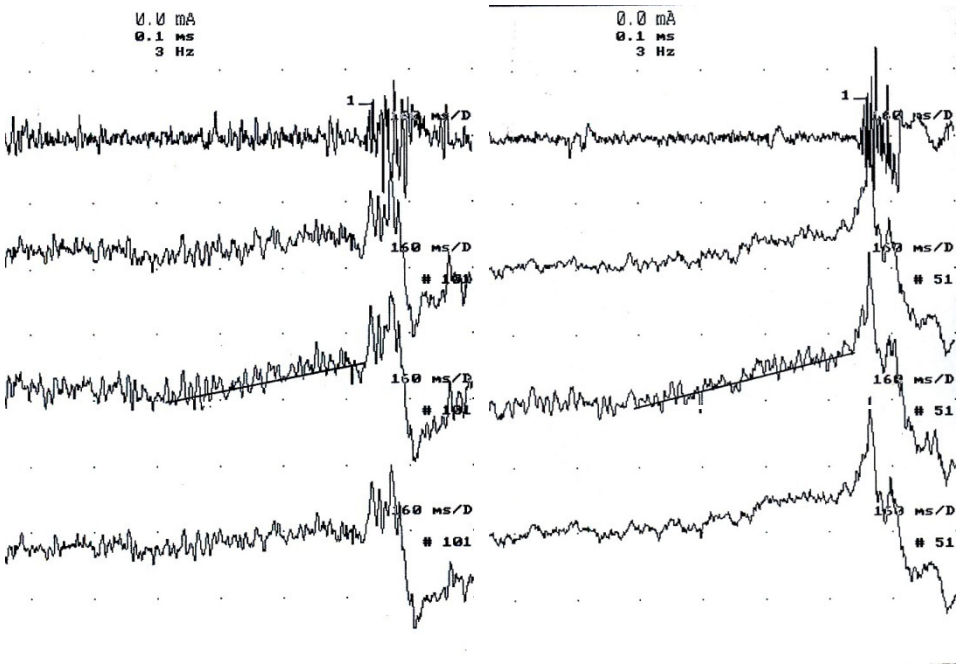
Functional myoclonus

- **variability in duration, amplitude and distribution of jerks - less stereotyped compared to an organic myoclonus**
- **distractibility: can be fully suppressible by distraction**
- **entrainment: in rhytmic myoclonus, adoption of frequency of repetitive movements performed in a less affected body part**
- **stimulus-sensitivity (may be in organic myoclonus, too) with variability in latency of jerks**
- ***often require laboratory confirmation***
  - **EMG: longer duration of contractions (never <250 ms), lack of typical spread of muscle activation**
  - **EEG: back averaging - Bereitschaftspotential**

Jerk-locked EEG back averaging

Bereitschaftspotential (readiness-potential)

- **of cortical origin**
- **if BP present, myoclonus is likely to be functional**



Core specific features of FMD
Functional parkinsonism

- **excessive slowness**, discordant with „automatic tasks“ performance (e.g. shoe lacing)
- **absence of amplitude decrement** during repetitive movements
- **atypical muscle rigidity**: no plastic resistance or cogwheeling, no increase with contralateral limb movement
- possibly in combination with functional tremor
- **distractibility**: improvement and/or changes in pattern
- **gait** very slow, often with additional features
  - extreme effort, noisy breathing, knee buckling
  - active adduction of the affected arm
- after suggestion, may respond to placebo and not to L-DOPA

Core specific features of FMD

Functional gait disorders

4 typical phenotypes of functional gait

- **unsteady gait: excessive staggering, wobbling, with paradoxical narrowing of base (tight-rope walking); or excessively broad base**
- **pseudoparetic gait: leg stiffness, dragging leg behind, foot in external rotation, no circumduction**
- **knee buckling, usually without falling**
- **excessively slow or effortful gait: bizarre postures, high energetic expenditure, may show hesitations or freezing with normal turns**

common signs

  - **inadequate compensation with uneconomic or unusual postures and/or complex acrobatic-like movements**
  - **distractibility, e.g. Romberg sign improving with distraction**
  - **often accompanying other FMD**

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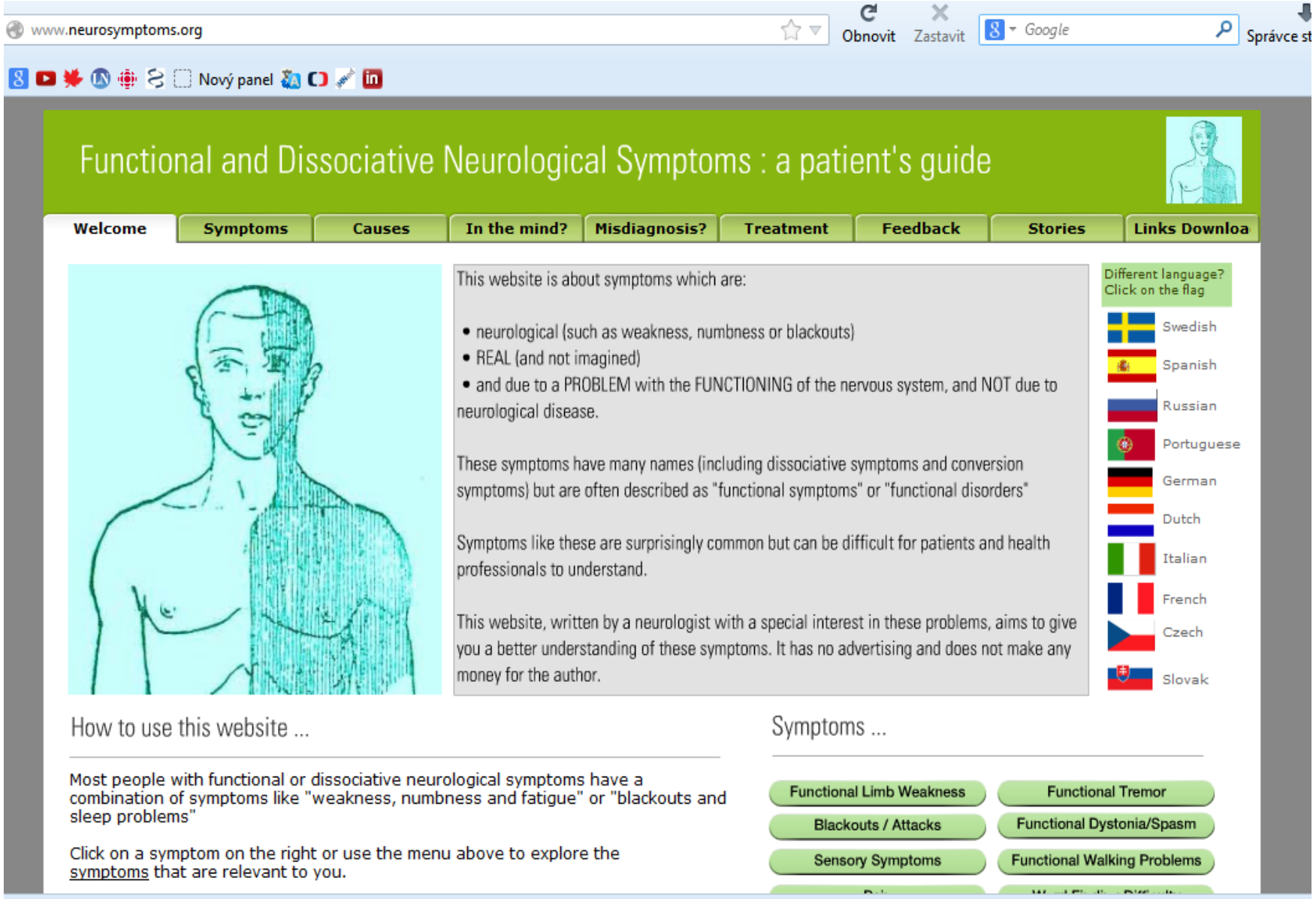
Functional movement disorders

Management

- Simple communication strategies can result in a marked increase in patient satisfaction and outcome:
- make it clear that you believe the patient's symptoms
- emphasize that the patient has something recognizable, common and reversible
- explain the reasoning behind the diagnosis, show the positive signs of FMD and explain their potential utility for physiotherapy
- provide sources of self-help information (leaflets, web)
- patients can benefit from a brief, low cost intervention from a therapist specifically trained in the treatment of FMD

www.neurosymptoms.org



Fuctional movement disorders

Summary

- functional movement disorders are not rare
- functional tremor, dystonia, myoclonus and gait disorders are the most frequent
- proper clinical examination is crucial for diagnosis of FMD
- positive diagnosis of FMD: inconsistency + incongruence
- management
  - make it clear that you believe the patient's symptoms
  - emphasize that the patient has a recognizable, common and reversible disorder, provide explanation
  - recommend physiotherapy, see the patient again

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Suggested reading

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