The Many Faces of Multiple Sclerosis

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Case 1

• 37-year-old male construction worker with history of right sided numbness over the last 10 days

• Prior history of right sided weakness lasting about 2 weeks that improved spontaneously although not completely resolved

• Exam shows slight decrease to pinprick on the right leg and trunk and mild right sided weakness.
Multiple Sclerosis

- Autoimmune disease characterized by inflammation, demyelination and axon loss of the CNS
- Prevalence 1:1000
  - Affects 2.5 million people worldwide
- Etiology unknown
- Genetic component: 50% concordance in twins
- Diagnosis: no gold standard, but MRI, clinical exam, VEP, CSF and labs supportive
  - Revised McDonald criteria 2005
- No cure, but several FDA-approved disease modifying treatments available
Clinical Presentation

• Sensory changes
• Focal weakness
• Visual loss/changes
• Urinary/bowel dysfunction
• Fatigue
• Dizziness
• Loss of coordination
Case 2

• 46 year old man presents with one week history of acute back pain followed by urinary retention, progressive weakness and numbness/tingling in all extremities

• Sensation of tight band around his chest

• 2 year history of intermittent episodes of back pain followed by urinary retention that would spontaneously resolve within a few weeks

• Prior history of blurry vision left eye that was diagnosed as “iritis”

• Exam revealed hyperreflexia, mild 4/5 weakness in both proximal and distal muscles, and diffuse sensory loss in all limbs to PP/LT
Devic's disease (Neuromyelitis Optica)

- Idiopathic inflammatory demyelinating and necrotizing disease characterized by predominant involvement of the optic nerves and spinal cord
- Known as Opticospinal MS in Asia
- IgG antibody binds to aquaporin-4, a water channel in the foot processes of astrocytes in the CNS
  - Perivascular deposition of IgG and complement
  - Granulocyte and eosinophil infiltration
  - Hyalinization of vascular walls
- NMO IgG antibody supportive of diagnosis
- Mayo 2006 absolute criteria: Optic neuritis and acute myelitis

Wingerchuck et al., 2006; Neurol 66:1485-9. Rae-Grant, CCF 2010

Case 3

- 37 y/o male physician with four week history of dizziness, gait imbalance, nausea, and double vision
- Examination revealed vertical skew deviation, unsteady native gait, and mild heel shin ataxia
- Previously healthy
Case 3

Acute Disseminated Encephalomyelitis

- Isolated episode of acute CNS inflammation of the CNS
- Usually follows infection due to molecular mimicry
- Most common presentation:
  - UMN signs and encephalopathy
  - Usually in children, but more severe course in adults
- Distinguishing MRI features of MS vs ADEM
  - Absence of diffuse bilateral lesion
  - Periventricular lesions (2 or more)
  - Black holes
- Monophasic with rare recurrence and MS convert rate
- Treatment: IV steroids, IVIG, Plasmapheresis

Case 4

- 25 RHWF with progressive right sided weakness and dizziness over 2-3 week period
- PMH significant for migraines
- Exam shows right hemiparesis LE>UE with right sided hyperreflexia
- No sensory changes or CN deficits
Case 4

Tumor Like Demyelinating Plaque

• Monophasic course
• Favorable prognosis
• Responds well to IV steroids
• Most do not progress to typical remitting/relapsing course of MS
  – Only 2 of 24 in one series (Kepes J. Ann Neurol 1993; 33:18–27.)
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