212-3
Paraneoplastic Upbeat Nystagmus
The patient is a 65 year old woman who was in good health until seven weeks prior to admission.

On June 22/09 on the return flight from her daughter’s wedding in Oregon she began to feel “dizziness”, characterized as “inability to sense herself in space.”
Dizziness progressed insidiously over several hours and caused difficulty in standing and inability to walk off the plane unassisted.

Fully upright she felt as though “there is a sensation of backwards motion with someone trying to push me off my heels.”
The next day she had intermittent blurring of vision and “eyes bobbing up and down“, a prominent feature that “caused quite a stir among physicians.”

An ENT specialist on Cape Cod diagnosed inner ear disease and prescribed meclizine.
The PCP diagnosed vestibular neuritis and prescribed a short course of prednisone.

The symptoms progressed and she was referred to the Massachusetts Eye and Ear Infirmary and admitted to the Massachusetts General Hospital on August 14/09.
Additional History

Impaired short term memory for 3 months
Ten pound weight loss without GI symptoms

Past Hx
Negative for head trauma, migraine, syncope
seizures, vertigo, deafness, tinnitus, impaired
balance and visual symptoms
Social History

Retired bookkeeper now helping in family business
Smoked 2 packs/day for 25 years, quit 4 years ago

Alcohol at least 2 glasses of wine/night for many years, occasionally “the better part of a bottle of wine on weekends”
Family History

Negative for neurological disease
Both parents were alcoholics and had hypertension
They died of cardiovascular disease
Ocular Motility

Upbeat Nystagmus
Lid Nystagmus
Full horizontal and vertical eye movements
Saccadic hypermetria in all directions
Saccadic pursuit
Square wave jerks
Suppression of nystagmus on convergence
Absent vertical OKN
No skew
Neurological Findings

Oriented to person and 2009. States MEEI for place. Cambridge for City, June for August. Spells WORLD backwards without error. Memory 3/3 at registration and 0/3 at 5 mins.

Impaired vibration sense, intact joint position. Normal reflexes. Limb & gait ataxia, tending to sway backwards.
Lumbar Puncture

Protein 69 mg/dl
Sugar 60 mg/dl
WBC 7
97% lymphs
3% monos
Elevated IgG 22.5 mg/dl (0-8.0)
CSF albumin 33.2 mg/dl (normal)
Brain MRI: Non-specific white matter foci consistent with small vessel ischemic change.
Neuroimaging

MRI: Sagittal view showing mild cortical atrophy
CT of abdomen / pelvis with contrast showing a solid 3.8 x 2.9 x 3.5 cm well defined heterogenous mass arising from the tail of the pancreas.
CT guided core biopsy

- Normal pancreatic acinar and endocrine cells contrasted with small, monomorphic, polygonal tumor cell population (H.E. x200)
- Immunohistochemical stains for chromogranin, synaptophysin, endocrine markers, highlight tumor cell population
- Dx Pancreatic endocrine carcinoma
Normal pancreatic acinar epithelium

Endocrine Neoplasm
Chromogranin Immunohistochemical Stain

Benign islet and tumor cells are positive

Benign acinar cells are negative
Synaptophysin Immunohistochemical Stain: This marker and chromogranin stain the cytoplasm of endocrine cells.
Trypsin Immunohistochemical Stain

- Tumor is negative
- Benign acinar cells are positive
- Benign islet is negative
Eye Movement Records

A-C show a 5 second epoch of nystagmus
A. Divergent quick phases
B. A large vertical component
C. Smaller clockwise quick phases
D. UBN decreased during convergence

Courstesy R John Leigh MD
Paraneoplastic Upbeat Nystagmus
Therapy

Appropriate therapy for Cancer
   Distal pancreatectomy
   Chemotherapy with cyclophosphamide
Immune modulation
   Intravenous methylprednisolone
   Intravenous immunoglobulin
Symptomatic treatment for nystagmus
   Memantine
References


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