Sudden Sensorineural Hearing Loss and Facial Paralysis

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Definitions

- $Db = 20 \log p_2/p_1$
- SSNHL: 30db decrease at three consecutive frequencies within 3 days
- Incidence of ssnhl-1/10,000
- Majority of cases are idiopathic
Working Diagnosis

- Rule out treatable etiology
- Treatment timetable
Initial Evaluation

- Relevant history
- Office or ER examination
- Tuning forks
- Referral
- Imaging
Specialty Evaluation

- Neurotologic examination
- Audiometric testing
- Vestibular Evaluation
- Evolked potentials
- Laboratory evaluation
- MRI
PM - 3/86

<table>
<thead>
<tr>
<th>EAR</th>
<th>SRT</th>
<th>PB MAX</th>
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<tr>
<td>R</td>
<td>70</td>
<td>68%</td>
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<td>L</td>
<td>60</td>
<td>80%</td>
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Frequency in Hertz

Hearing threshold level in dB (ANSI-69)

Air Conduction 0-0 - Right  Bone [---[ - Right
X-X - Left  Conduction]---] - Left
Laboratory Evaluation

- CBC, sed rate, TSH, bun/Cr, triglycerides
- Rheumatoid factor, ANA
- Specific autoimmune work-up
- Lyme titer
- Fta-abs, HIV
- INR, PTT
Complete Differential

- Viral infection
- Vascular occlusion
- Membrane breaks
- Bacterial infections
Differential-continued

- Autoimmune inner ear disease
- Neoplasms
- Neurologic disorders
- Ototoxic medications
Vascular Causes

- Microemboli-post bypass
- Vertebrobasilar disease
- High-viscosity syndromes
- Small vessel disease
- Sickle cell anemia
AIED

- Ulcerative colitis
- SLE
- Relapsing polychondritis
- Polyarteritis nodosa
- Cogan’s syndrome
Prognostic Factors

- Initial audiogram
- Presence of vertigo
- Age
- Time to onset of therapy
Treatment-Idiopathic

Steroids
Antivirals
EBM
Prednisone Treatment

- Days 1-4: 80 mg/day
- Days 5-6: 60 mg/day
- Days 7-8: 40 mg/day
- Day 9: 30 mg/day
- Day 10: 20 mg/day
- Day 11: 10 mg/day
- Day 12: 10 mg/day
Treatment of Specific Etiology

- Repair fistula
- Autoimmune inner ear disease
- Syphilis, Lyme’s disease
- Plasmapheresis
- Neoplasm
- Meniere’s Disease
- Migraine
Sudden Deafness

- Normal exam
- 512 fork Weber away
- Prednisone taper
- Oto referral
- MRI with contrast
Facial Paralysis
Injury Classification

- Neuropraxia
- Axonotmesis
- Neurotmesis
The Ability for ENoG to Predict the Type of Facial Nerve Lesion

**Electrodiagnosis and Prognosis of Facial Nerve Lesions**

1. **Endoneural Tube intact (Axonotmesis)**
   - Very Good Prognosis
   - Good Prognosis

2. **Endoneural Tube Severed (Neurotmesis)**
   - Bad Prognosis

**Peripheral Facial Paralysis**

- Degeneration

**Reversible Conduction Block (Neurapraxia)**
Evaluation

- History
- Head and neck exam
- Imaging
MRI w
ENOOG: PURPOSE

- Quantify the % of facial n. fibers electrically stimulable in patients with facial paralysis
- Electrical evidence of degeneration with ENOG correlates with histologic evidence of neuronal degeneration
- Most accurate test available for prognosis of recovery
ENOG: PATIENT SELECTION

- Patients presenting with **total** facial paralysis (House-Brackmann Grade VI)
- > 3 and < 21 days after onset
55 yo MD with acute onset of left facial paralysis, hyperacusis, and ear pain 3 days ago
BELL’S PALSY

- Most common disorder affecting facial nerve
- Acute, unilateral paresis that evolves in 24-48 hrs
- **Untreated**, 80-85% recover completely
- **Untreated**, 15-20% show incomplete return of function and synkinesis
- Viral neuritis
ENOG:

- Pts who did not reach 90% degeneration within 14 days returned to grade I or II.

- Pts with > 90% degeneration on ENOG and no voluntary motor unit potentials on EMG had only a 42% chance of good outcome (steroids).

- 91% of pts with similar ENOG and EMG findings, who underwent middle fossa facial n. decompression, returned to grade I or II, Gantz 1999.
Treatment

- Medical
- Surgical
- Eye care
- Retraining
Medical treatment

- Prednisone taper
- Valcyclovir 1000mg po BID 7 days
Acute Facial Paralysis

Peripheral paralysis

- Prednisone
- Valcylovir
- Oto referral
- MRI
Thank you