Bell's palsy : Clinical Practice Guideline

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Paresis vs. Paralysis

- Paralysis: total loss of nerve function

- Paresis: hypo-function or hypo-mobility
  secondary to neurologic injury

Introduction

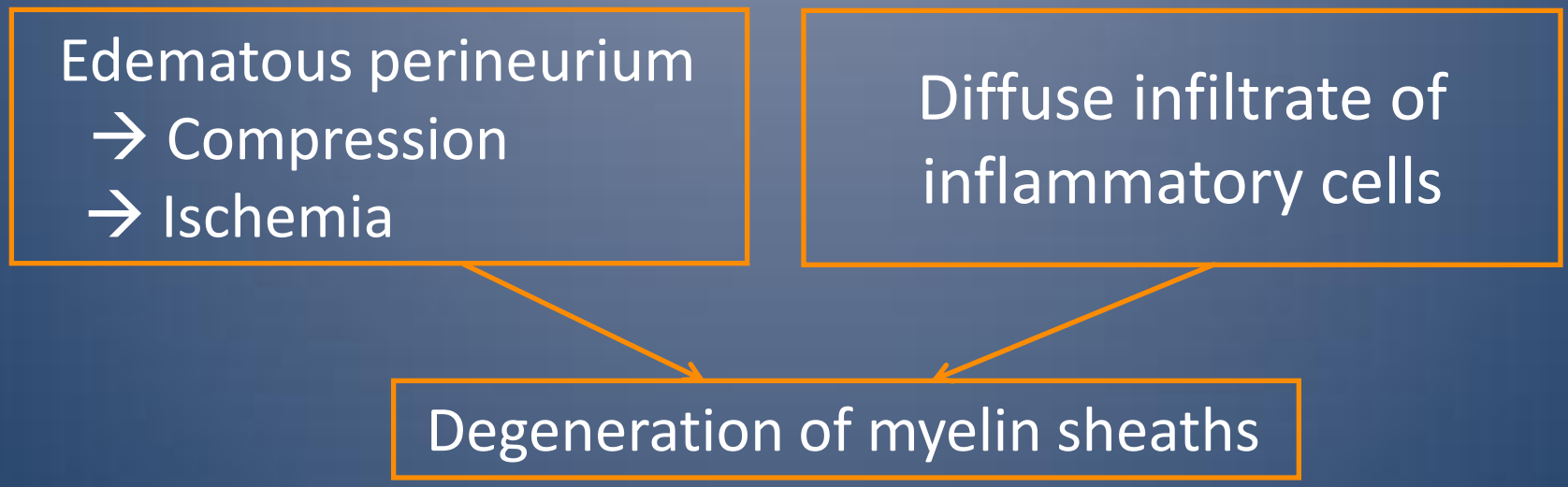
- Acute unilateral facial nerve paresis or paralysis, < 72 hours, no identifiable cause
- Facial nerve inflammation & edema may cause compression then temporary or permanent damage
- Recovery without intervention within 2 to 3 weeks
- Completely recovery within 3 to 4 months

Epidemiology

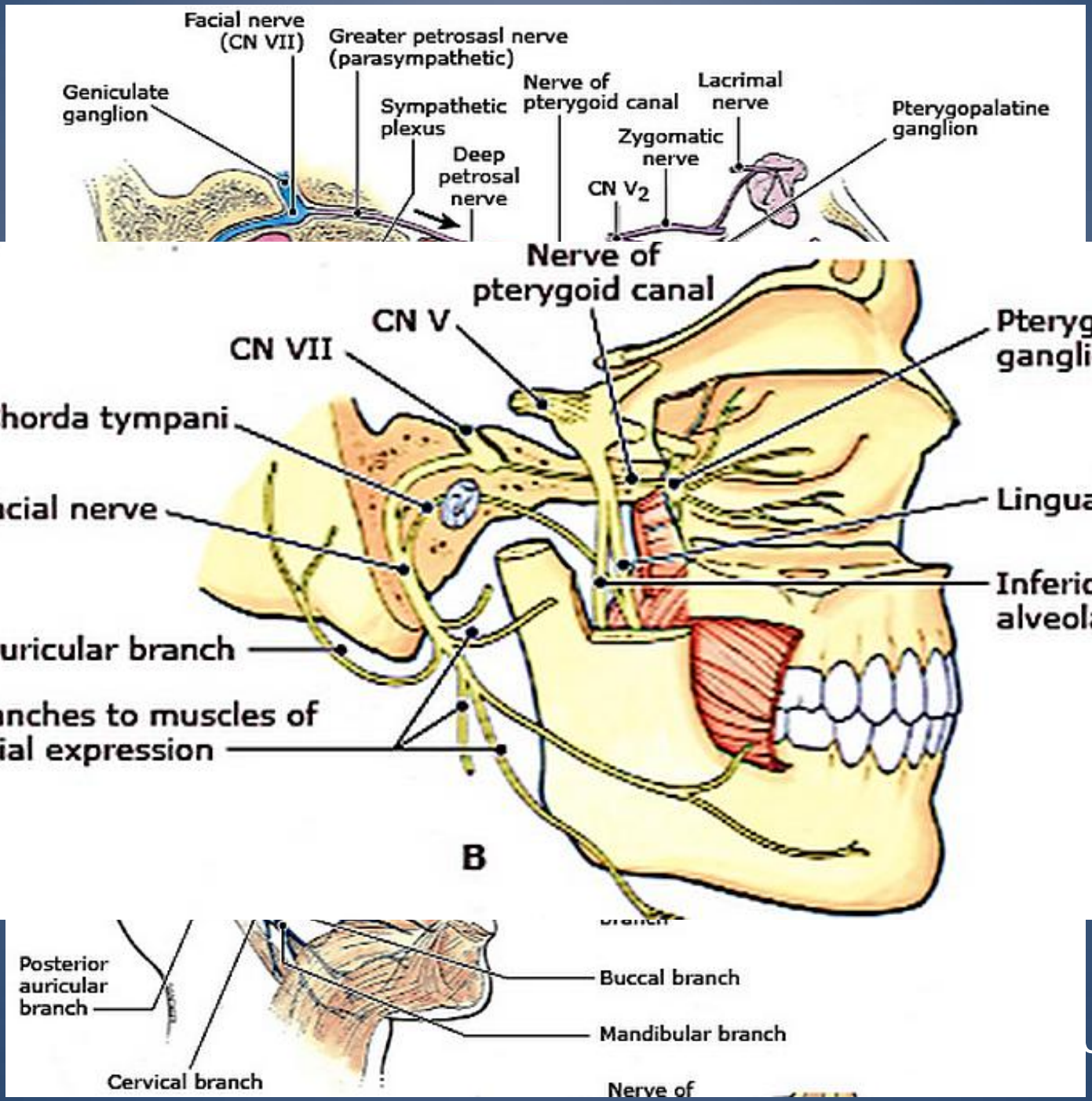
- Incidence: 11.5 - 53.3 per 100,000 person years
- Incidence rate was increased by age
- Female > male
- Highest group: 15 to 45-year-old age group

Etiology & Pathogenesis: Controversy!

- Infection: Infection leads to inflammation, demyelination & palsy
  - HSV, Herpes zoster, CMV, EBV, Adenovirus, Rubella virus, Mumps, Influenza B, Coxsackie virus



Histopathology of Bell's palsy. Laryngoscope. 1989;99(1):23


Facial nerve (CN VII)
Greater petrosasl nerve (parasympathetic)
Geniculate ganglion
Sympathetic plexus
Deep petrosal nerve
Nerve of pterygoid canal
Lacrimal nerve
Zygomatic nerve
CN V2
Pterygopalatine ganglion
Nerve of pterygoid canal
CN V
CN VII
Pterygopalatine ganglion
Chorda tympani
Facial nerve
Lingual nerve
Inferior alveolar nerve
Posterior auricular branch
Branches to muscles of facial expression
B
Posterior auricular branch
Buccal branch
Mandibular branch
Cervical branch
Nerve of

Uptodate

Manifestation

- Eyebrow sagging
- Hyperacusis
- Decreased tearing
- Inability to close eye
- Disappearance of the nasolabial fold
- Mouth drawn to the non affected side
- Loss of taste sensation on anterior 2/3 of tongue
  - Site the lesion in fallopian canal
  - Indicator of severity

Risk Factor

- Pregnancy
- Severe preeclampsia
- Obesity
- Hypertension
- Diabetes
- Upper respiratory ailments

Classification of Nerve Injury

Sunderland Classification	Anatomic Injury	Clinical Manifestation and Recovery
I (Neuropraxia)	Local conduction block, Axoplasmic continuity(+)	Recovery complete in several weeks
II (Axonotmesis)	Axoplasmic disruption, Intact endoneurium, Nerve sheath continuity(+)	Wallerian degeneration Regrowth: 1mm/day Good recovery
III (Neurotmesis)	Endoneurium disruption, Nerve sheath continuity(+)	Wallerian degeneration Synkinesis
IV (Perineurium Disruption)	Nerve sheath continuity(+) Intact epineurium(+)	Wallerian degeneration Significant synkinesis
V (Epineurium Disruption)	Complete nerve transection	Paralysis

House-Brackmann Facial Nerve Grading

House-Brackmann	Motion	General, at rest
Grade I - Normal	Normal facial function	
Grade II – Slight Dysfunction	**Forehead** - good function **Eye** - complete closure **Mouth** - slight asymmetry	Slight synkinesis Normal symmetry
Grade III – Moderate Dysfunction	**Forehead** - Fair movement **Eye** - complete closure with effort **Mouth** – mild weak with effort	Noticeable synkinesis, contracture Normal symmetry
Grade IV – Moderate Severe Dysfunction	**Forehead** – none **Eye** - incomplete closure **Mouth** - asymmetric with effort	Obvious weakness Normal symmetry
Grade V – Severe Dysfunction	**Forehead** – none **Eye** - incomplete closure **Mouth** - slight movement	Asymmetry at rest
Grade VI – Total Paralysis	No movement	

Recovery

- Without treatment, facial function is restored within 6 months in
  - 70% of patients with complete paralysis
  - 94% of patients with incomplete paralysis

- 30% of patients do not recover completely

Differential Diagnosis

- Lyme disease
  - Facial palsy, heart block, arthritis, vertigo, & hearing loss. Painless, non-tender swelling & erythema of face
- HIV infection
  - CSF lymphocytosis(early), chronic demyelinating polyradiculopathy lymphomatosis(later)
- Melkersson-Rosenthal syndrome
  - Facial paralysis, episodic facial swelling, & fissured tongue, beginning in adolescence, with recurrent episodes of facial palsy

Differential Diagnosis

- Otitis media(including cholesteatoma)
  - Gradually onset
- Sarcoidosis
  - Bilateral facial palsy
- Sjögren syndrome
- Malignant parotid gland tumor

Clinical Practice Guideline

American Academy of Otolaryngology- Head & Neck Surgery

Strong recommendation

Patient History & Physical Examination

- Using history & physical examination to exclude identifiable causes of facial palsy

- Identification of other causes of facial palsy avoidance of unnecessary testing & treatment

Recommendation (against)

Routine Laboratory Testing

- No obtaining routine laboratory testing in patients with new-onset Bell's palsy

- Avoidance of unnecessary testing or treatment, avoidance of pursuing false-positives, cost savings

- But specific disease, eg: Lyme disease serology in endemic areas, can usually be identified by history

Recommendation (against)

Routine Diagnostic Imaging

- No routinely performing diagnostic imaging for patients with new onset Bell's palsy

- Avoidance of unnecessary radiation exposure, incidental findings, contrast reactions, & cost savings

Strong recommendation

Oral Steroids

- Prescribe oral steroids within 72 hours of symptom onset for Bell's palsy patients ≥ 16 years
- Improvement in facial function & faster recovery
- Dosage: 1 mg/kg or 60 mg/day for 6 days, then taper for a total of 10 days
- Caution:
  - Tuberculosis, Sarcoidosis, Sepsis, Active infection
  - Immunocompromise, Pregnancy
  - Diabetes mellitus, Malignant hypertension
  - Renal or hepatic dysfunction, Peptic ulcer disease

Strong recommendation (against)

Antiviral Monotherapy

- No prescription of oral antiviral therapy alone for patients with new-onset Bell's palsy
- Avoidance of medication side effects & cost savings
- Acyclovir : 400 mg orally 5 times/day for 10 days
  - 800 mg 5 times/day for Varicella zoster virus
- Valacyclovir: 500 mg twice/day for 5 days
  - 1000 mg 3 times/day for Varicella zoster virus

Option

Combination Antiviral Therapy

- May offer oral antiviral therapy + oral steroids within 72 hours of symptom onset for patients with Bell's palsy

- Potential improvement in facial nerve function

Strong recommendation

Eye Care

- Eye complications
  - Lagophthalmos
  - Exposure keratitis
  - Corneal complications
- Prophylatic treatment
  - (Preservative free) artifical tear
  - Ophthalmic gel or ointment
- Surgical treatment
  - Tarsorrhaphy

Recommendation (against)

Electrodiagnostic Testing with Incomplete Paralysis

- No performing electrodiagnostic testing in Bell's palsy patients with incomplete facial paralysis

- Avoidance of unnecessary testing, & cost savings

Option

Electrodiagnostic Testing with complete Paralysis

- May offer electrodiagnostic testing to Bell's palsy patients with complete facial paralysis.

- Provide prognostic & identification of potential surgical candidates

No recommendation

Surgical Decompression

- No recommendation can be made regarding surgical decompression for Bell's palsy patients
- Benefit: Improved facial nerve functional recovery
- Risks: Surgical risks and complications, anesthetic risks, direct & indirect costs of surgery

No recommendation

Acupuncture

- No recommendation can be made regarding effect of acupuncture in Bell's palsy patients
- Acupuncture may provide potential improvement in facial nerve function & pain
- Risks: cost of acupuncture therapy, time required for therapy, therapy side effects, & delay in instituting steroid therapy

No recommendation

Physical Therapy

- No recommendation can be made regarding effect of physical therapy in Bell's palsy patients
- Potential functional and psychological benefit
- Risks: cost of therapy, time required for therapy

Recommendation

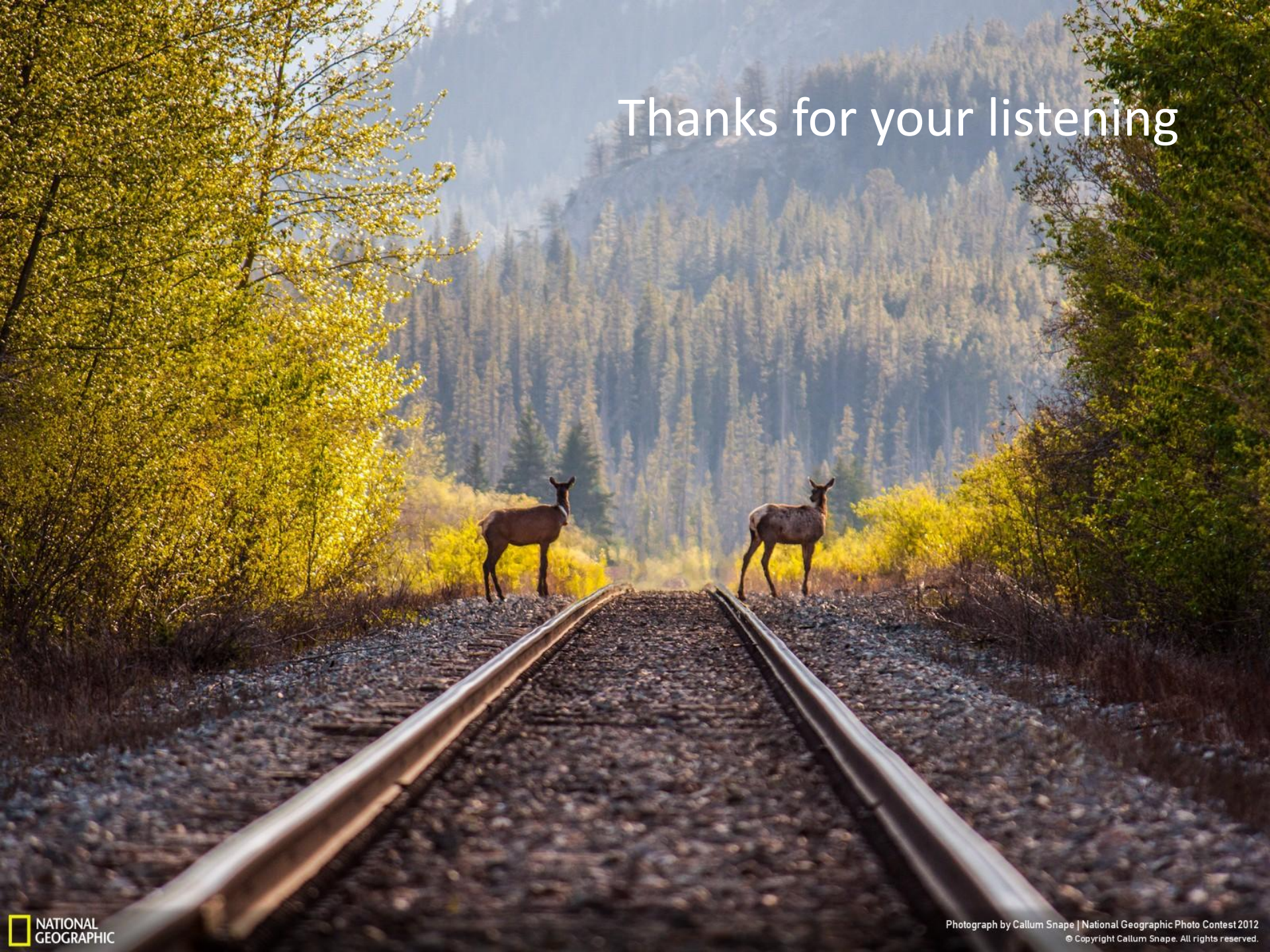
Patient Follow-up

- Reassess Bell's palsy patients with
  - New or worsening neurologic findings at any point
  - Ocular symptoms developing at any point
  - Incomplete facial recovery 3 months after initial symptom onset
- Reevaluation for alternate diagnoses of facial paralysis

Summary

When patient with Bell's palsy…

- Take thorough history & physical examination
- Prescription of oral steroids
- Consider oral steroids + antiviral agent
- Eye care
- Electrodiagnostic testing with complete paralysis
- Patient follow-up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