FACIAL NERVE DISORDERS

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ENT
HIMSR
FACIAL NERVE COURSE

- INTRA CRANIAL COURSE (15-17mm)
- INTRA TEMPORAL COURSE –
  - MEATAL SEGMENT (8-10mm)
  - LABYRINTHINE SEGMENT (3-5 mm)
  - TYMPANIC SEGMENT (8-11 mm)
  - MASTOID SEGMENT (10-14 mm)
- EXTRA CRANIAL COURSE
BRANCHES OF FACIAL NERVE

- GREATER SUPERFICIAL PETROSAL NERVE
- NERVE TO STAPEDIOUS
- CHORDA TYMPANI
- COMMUNICATING BRANCHES
- POSTERIOR AURICULAR NERVE
- MUSCULAR BRANCHES TERMINAL BRANCHES
Muscles of expression
BLOOD SUPPLY

- LABYRINTHINE ARTERY
- PETROSAL ARTERY
- STYLOMASTOID ARTERY
PATHOPHYSIOLOGY NERVE INJURY

**SUNDERLAND CLASSIFICATION**

- **FIRST DEGREE** (obstruction of axoplasm, neuropraxia)
- **SECOND DEGREE** (injury to axon, axonotmesis)
- **THIRD DEGREE** (injury to endoneurium, neurotmesis)
- **FOURTH DEGREE** (injury to perineurium)
- **FIFTH DEGREE** (injury to epineurium)
Types of facial palsy

- **Upper motor neuron facial palsy** - paralysis of only lower half of face on the contralateral side
- **Lower motor neuron facial palsy** - all the ipsilateral muscles become paralysed
A. Facial nerve lesion
(Bell’s palsy)

B. Supranuclear lesion

Nucleus of facial nerve (cranial nerve VII)

Lesion in facial nerve

Facial nerve

Supranuclear lesion

FRONTAL WRINKLING LOST
NORMAL FUNCTION IN UPPER PART OF FACE

BELLS SIGN

DEVIATION OF MOUTH TO NORMAL SIDE

LOWER MOTOR NEURON

Clinical features of upper and lower motor neuron facial paralysis
INVESTIGATION

- Electrical Test
- Nerve Excitability Test
- Maximal Stimulation Test
- Electro Neuro Graphy
- Electromyography
- Nerve Conduction Velocity
Topo diagnostic test

- **SCHIERMER’S TEST** – a strip of filter is hooked in lower fornix of each eye and kept for five min. The length of wetting of strip is measured.
  - result: 20-30% decrease in lacrimation indicate that lesion is proximal to geniculate ganglion.

- **TASTE TEST OR ELECTROGUSTOMETRY**

- **SUBMANDIBULAR SALIVARY FLOW**
<table>
<thead>
<tr>
<th>Saliva</th>
<th>Method</th>
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<tbody>
<tr>
<td>Mixed</td>
<td>Draining/gasping/expectoration and then spit into a collection vessel (swab)</td>
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<tr>
<td>Mixed</td>
<td>Suction method: Suction method utilizing a collection vessel [1]</td>
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CAUSES

- Central
- Cerebellopontine angle tumour
- Intratemporal part
  - idiopathic
  - Infection
  - surgical trauma
  - Accidental trauma
  - Neoplasm
- Parotid
  - congenital
  - systemic disease
Complication

- Incomplete recovery
- Exposure keratitis
- Synkinesis
- Tics and spasm
- Contractures crocodile tear
- Frets syndrome (gustatory sweating)
- Psychological and social problem
Bell’s palsy

- Idiopathic demyelinating disease
- Unilateral lower motor neuron facial palsy
- Both sexes equally affected
- Risk factors: diabetes and pregnancy
Etiology

- Viral infection
- Vascular ischemia
- Hereditary
- Autoimmunity
C/F

- Inability to close eye
- Bells phenomenon
- Dribbling of saliva
- Asymmetrical face
- Epiphora
- Ear ache
- Hyperacusis
- Diminished taste sensation
DIAGNOSIS

- LABORATORY TEST – CBC, peripheral smear, ESR, blood sugar.
- NERVE EXCITATION TEST
- TOPODIAGNOSTIC TEST
TREATMENT

- GENERAL MEASURES
  - REASSURANCE
  - ANALGESICS
  - EYE CARE - ARTIFICIAL TEARS, EYE BOINTMENT FOLLOWED BY EYE PATCH
  - PHYSIOTHERAPY

- MEDICAL MEASURES
  - STEROIDS
  - ACYCLOVIR
  - OTHER DRUGS – VASODILATOS, VITAMINS, MAST CELL INHIBITORS AND ANTIHISTAMINICS
Surgical Facial Decompression

Vertical and tympanic segment is decompressed. It improves micro circulations.

Prognosis

Majority of patients (85-90%) recover fully. Recovery begins within 3 weeks of onset.
Melkersson‘s Syndrome

- Idiopathic disorder
- Triad of facial palsy, swelling of lips and fissured tongue.
- Recurrent attacks of facial palsy
- Treatment similar to bell’s palsy
RAMSAY HUNT SYNDROME OR HERPES ZOSTER OTICUS (VARICELLA-ZOSTER VIRUS)

- Caused by varicella-zoster virus

- **Clinical features** -
  - Painful vesicles with erythematous base in canal, concha, soft palate.
  - Later, crust formation
  - Unilateral facial palsy
  - Deep ear pain
  - 25% patients have vertigo, nystagmus, tinnitus, and hearing loss
Cont......

- **Treatment**
- Tab. Acyclovir 800 mg 5 times a day or famcyclovir 500mg TDS or valacyclovir 1 g TDS for 7 days
- Tab. Prednisone tapering dose for 6 weeks
- Topical antibiotic /steroids ear drops
- Eye care
TEMPORAL BONE FRACTURES

- Facial palsy is due to intraneural hematoma, compression by bony spicule or transection of nerve

- c/f –
  - Hearing loss
  - Dizziness
  - Facial weakness
  - Ear bleeding
  - Hemotympanum
  - Racoon eye
  - Battle’s sign
Indication for surgery

- Immediate onset of complete facial nerve palsy
- Delayed onset complete facial nerve palsy associated with:
  - Radiological evidence of a fracture through fallopian canal
  - Poor prognostic test with ENG OR EMG
ITAROGENIC OR SURGICAL TRUMA

- FACIAL NERVE may be damaged accidentally during stapedectomy, tympanoplasty or mastoid surgery.
- Paralysis may be immediate or delayed
HYPERKINETIC DISORDERS

- INVOLUNTARY TWITCHING of facial muscles on one or more sides
- occur in cases of: -
  - Hemifacial spasm
  - Blepharospasm
Surgical treatment

- Decompression
- In SOM :-
  - Myringotomy
  - Tympanomastoid surgery
- End to end amastmosis
- Nerve graft
- Hypoglossal-facial anastomosis
- Plastic procedures
Thank you