Honk Kong East Cluster

Integrative Medicine Seminar

中西醫結合研討會 2021

Facial palsy 面癱

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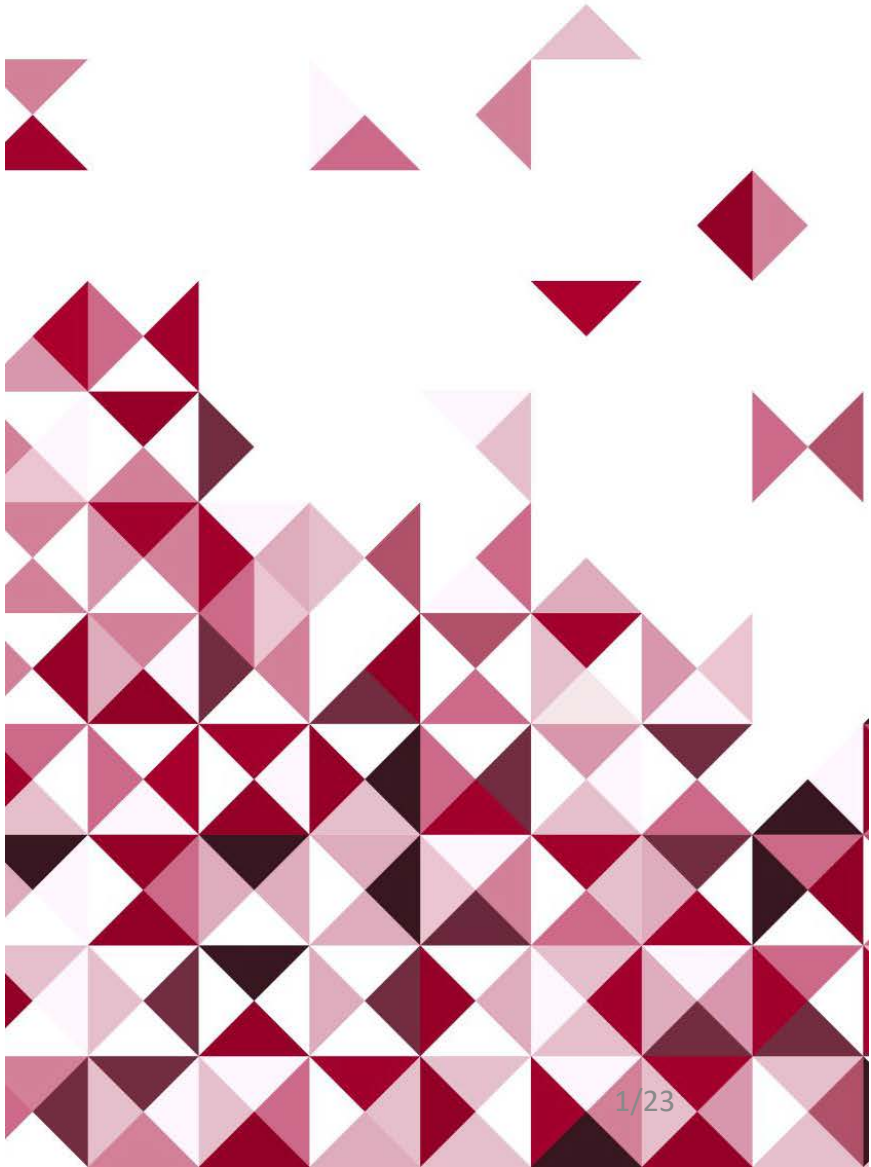
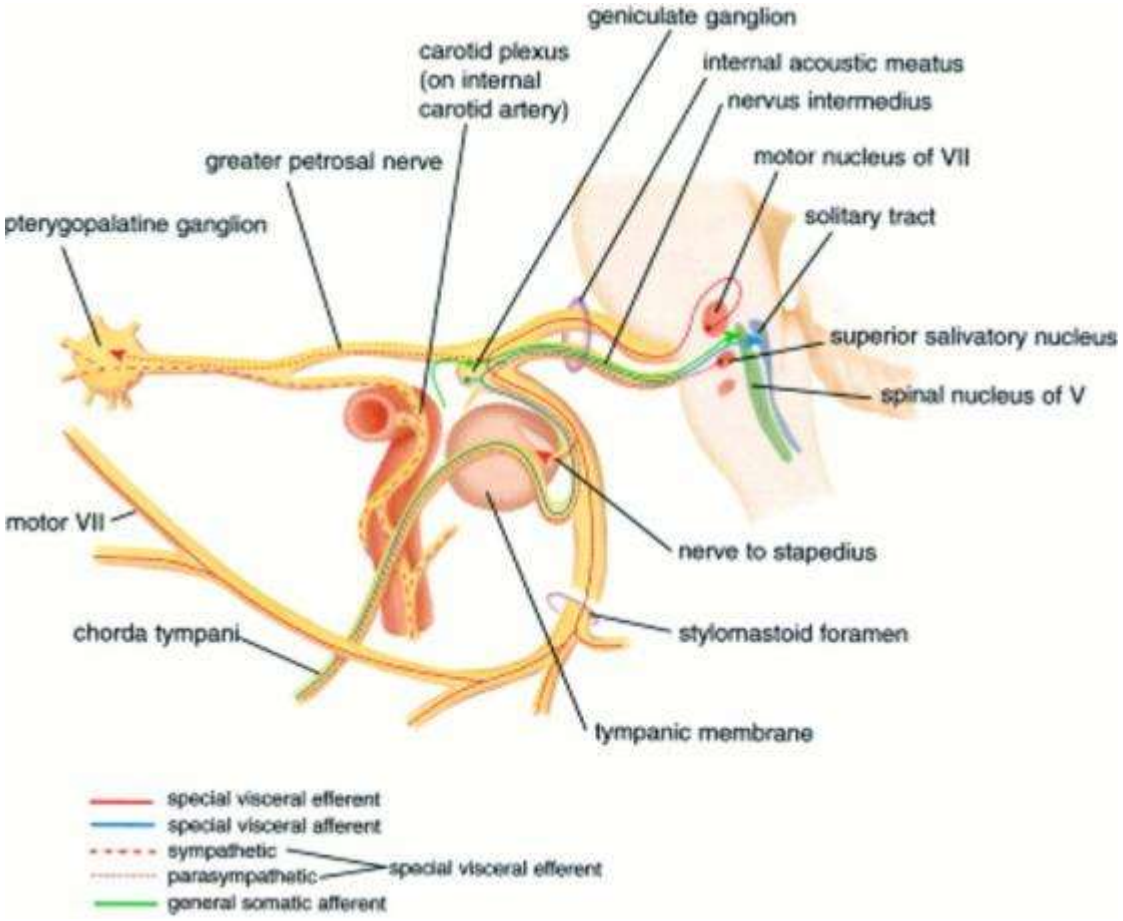
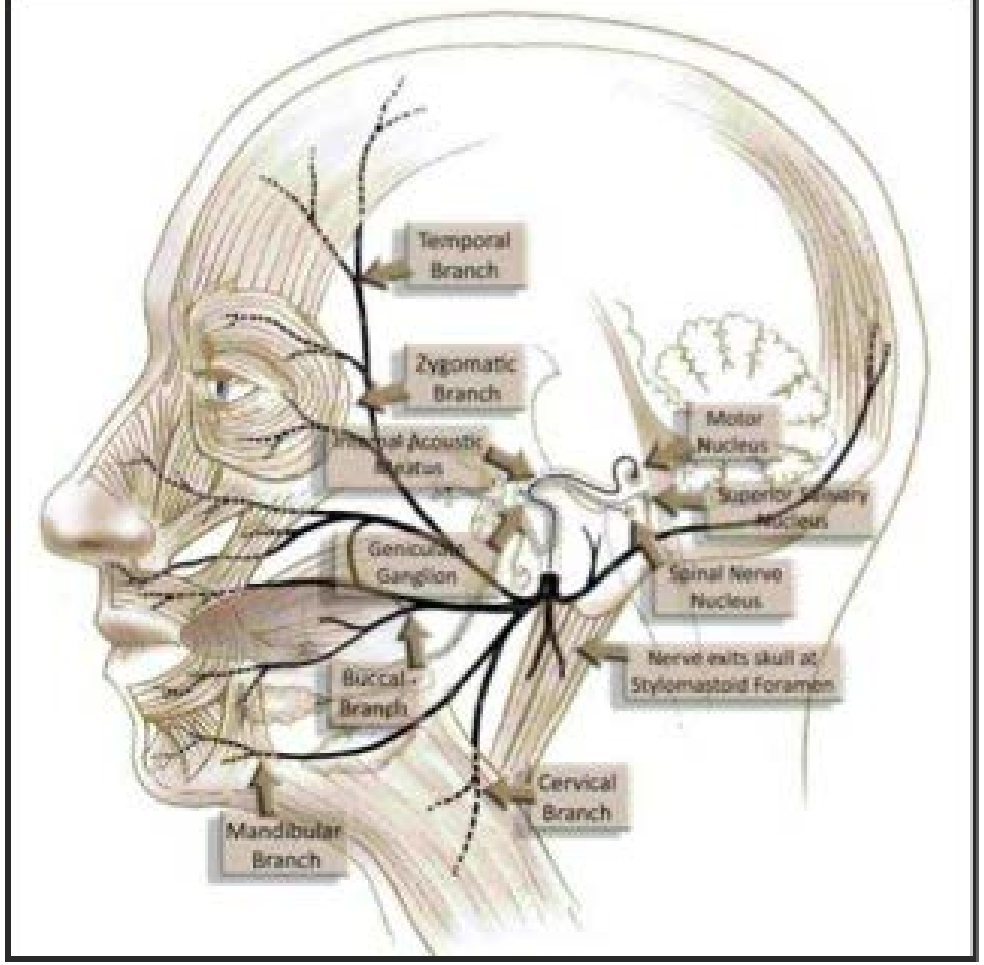


Facial Nerve Anatomy 面神經結構

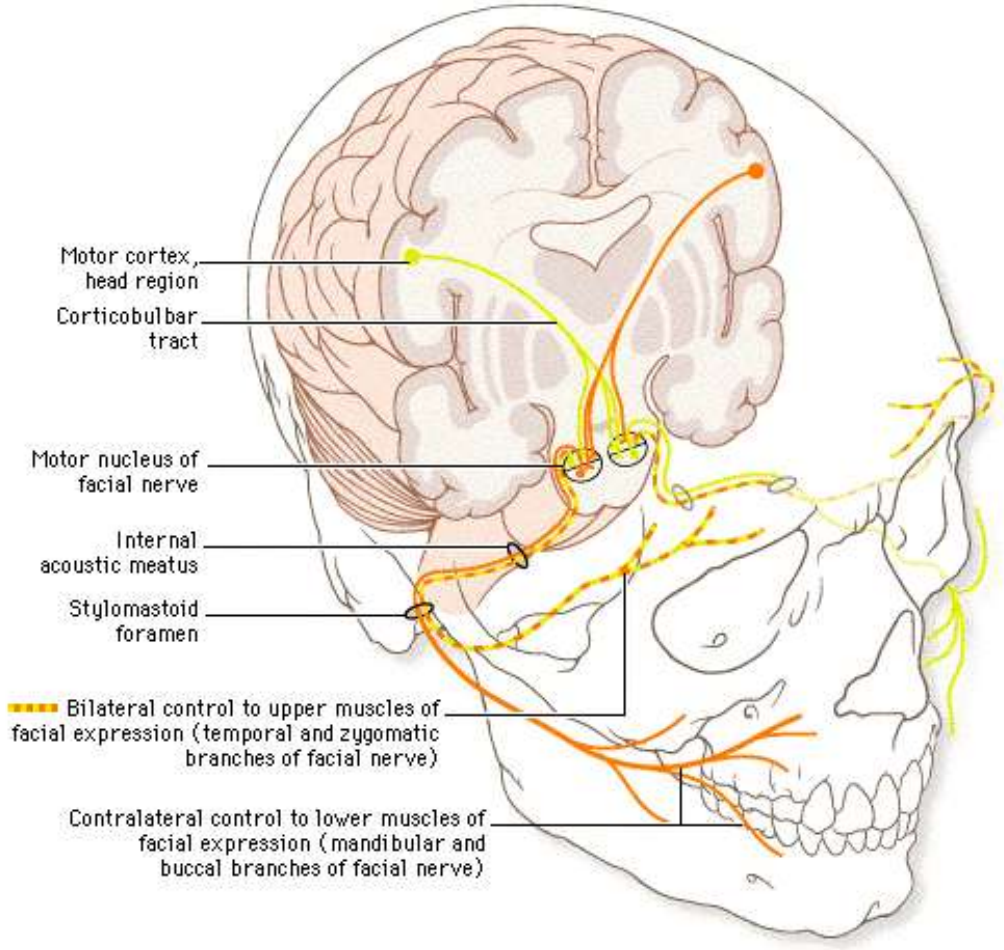
- Cranial nerve 7
- Contains 7,000-10,000 fibers
- Nuclei 面神經核
  - Somatic – Motor
    - Muscles of facial expression, stylohyoid, belly of digastric, stapedius
  - Taste – Tractus solitarius
  - Automatic parasympathetic – Superior salivatory & Lacrimatory
    - Secretomotor innervation of lacrimal, salivary and mucosal glands Segments
- Intracranial 腦幹
- 顱骨
- Meatal
- Labyrinthine
- Tympanic
- Mastoid
- Parotid gland腮腺
- Terminal branches分枝



- Facial motor function
  - 抬高眉毛
  - 眨眼, 閉眼
  - 微笑
  - 支配中耳的鐙骨肌
- Taste
  - 鼓索神經 - 舌頭的前面三分之二味道品嚐
- Lacrimal gland, submandibular gland, sublingual gland
  - 流淚, 流涎



- Facial motor nucleus – lower motor neuron nucleus in lower part of pons
- The part of nucleus supplying Upper muscles of facial expression receive bilateral cortico-nuclear innervation
- Lower muscles of facial expression receive cortico-nuclear innervation from opposite hemisphere



Facial palsy

Lower motor neuron lesion

下運動神經元損傷

- Bell's palsy貝爾氏麻痺症
- Ramsay Hunt syndrome雷氏症候群
- Trauma
  - Temporal bone fracture
  - Birth trauma
- Ear infection
  - acute otitis media
  - malignant otitis externa
  - cholesteatoma
- Tumour
  - Vestibular schwannoma
  - Facial nerve schwannoma
  - Malignant Parotid tumour
- Iatrogenic
  - Parotid or otologic surgery

Upper motor neuron lesion

上運動神經元損傷

- Central cerebrovascular accident
  中風

(preserve forehead and brow movement)

Bell's palsy 貝爾氏麻痺症

- Sir Charles Bell first described facial paralysis in 1818
- Most common diagnosis for facial nerve palsy
- Acute, generally unilateral paralysis or weakness of facial musculature consistent with peripheral facial nerve dysfunction, of no detectable cause (Niparko 1993)
- Diagnosis by exclusion

- Rapid onset within 72 hours
- Viral prodrome
- Spontaneous recovery
- Historically thought to be idiopathic, Herpes simplex virus (HSV-1)

- Incidence – 0.08% per year Nemet et al
  - Pregnant females (3.3 times greater)
  - Diabetics (4-5 times greater)
- Equal gender distribution in middle age
- Equal unilaterality
- Bilateral <1%
- Recurrence - 10%
- Positive family history - 10%

Peitersen’s study 2002 預期效果

- Bell’s palsy: the spontaneous course of 2500 peripheral facial nerve palsies of different etiologies
- Outcomes of 2570 untreated patients (1701 Bell’s, 869 non-Bell’s palsy)
  - Recovery by 3 weeks in 85%
  - Signs of partial recovery after 3-5 months in remaining 15%

  - Normal facial expression 71%
  - Insignificant sequelae - slight in 12%, mild in 13%
  - Severe sequelae 4%

Sequelae 後遺症

- Diminished function 功能減退
- Contracture with movement 肌肉攣縮, 不協調運動
- Crocodile tears syndrome 鱷魚淚綜合症
- – 3.3% Yamamoto et al.
  - 6-9 months after Bell's palsy
  - Regenerating salivary nerve fibres undergo synkinesis or misdirected to innervate lacrimal gland instead of submandibular gland
  - Smell or taste of food – excite lacrimal gland to produce ipsilateral tearing
  - Botulinum toxin A injection to lacrimal gland, transcutaneously or transconjunctivally, 2.5 units, stop transmission of abberantly regenerated parasympathetic fibres to lacrimal gland
  - Ddx simple epiphora due to loss of tone of orbicularis oculi, lower eyelid sagging, tears cannot drain through punctum

- Historically thought to be idiopathic
- Vascular congestion – secondary ischaemia
- Viral polycranioneuropathy
  - HSV-1 單純皰疹病毒1型 - HSV type 1 genome from the saliva and facial nerve fluid from patients with this condition
  - Facial nerve edema
  - 水腫、在狹窄的骨管裡膨脹、受擠壓造成了神經損傷

Ramsay Hunt Syndrome雷氏症候群

- Varicella zoster virus reactivation
  水痘帶狀疱疹病毒
- Facial weakness 顏面麻痺
- Otalgia 耳痛
- Vestibulocochlear symptoms耳鳴、聽覺及味覺喪失、眩暈、天旋地轉
- Vesicular rash 疼痛的水泡及紅疹
- Prognosis relatively worse than Bell's

History

- Laterality of facial weakness
- Onset - Occurs within 1-2 days
- Progression - can progress to complete paralysis over 1-7 days
- Rule out neoplasm if evolution past 3 weeks
- Trauma history
- Viral prodrome
- Hearing loss, otorrhea/otalgia, vertigo, rash
- Reduced taste, hyperacusis, postauricular pain – poor prognostic indicators
- Neurological symptoms – limb weakness, numbness

Red flag

- Neurological deficit
- Recurrent (17% facial nerve neoplasm)
- Progressive > 3 weeks
- Persistent (no sign or incomplete recovery)
- Concomitant ear symptoms

Physical examination

- Facial palsy grading
- Otoscopy
- Throat
- Parotid

(House 1985)

House-Brackmann Scale

Grade	Appearance	Forehead	Eye	Mouth
I	normal	normal	normal	normal
II	slight weakness normal resting tone	moderate to good movement	complete closure minimal effort	slight asymmetry
III	non-disfiguring weakness normal resting tone	slight to moderate movement	complete closure maximal effort	slight weakness maximal effort
IV	disfiguring weakness normal resting tone	none	incomplete closure	asymmetric with maximal effort
V	minimal movement asymmetric resting tone	none	incomplete closure	slight movement
VI	asymmetric	none	none	none

Investigations

- Mainly for non-Bell's palsy
- Computer tomography (CT)
  - Localize lesion
  - Fracture
  - Mastoiditis
  - Cholesteatoma
- Magnetic resonance imaging (MRI)
  - Nerve enhancement
  - Exclude neoplasm
- Electrophysiological tests (NET/ENoG/EMG)
  - Facial nerve decompression

Management

- Medical therapy
  - Prednisone 1mg/kg/day up to 60mg for 7 days
  - Usually taper over 5 days
  - Antivirals (acyclovir, famciclovir, valacyclovir)
  - Proton pumps inhibitors
- Physiotherapy
- Acupuncture
- Eye care
  - Prevent keratitis, corneal breakdown
  - Eye shield, eye drops/ointment
- Surgical decompression could be considered in selected cases eg. trauma, choleasteatoma, otitis media, iatrogenic
- Facial reanimation (static vs dynamic)

Cochrane review
Antiviral treatment for Bell's palsy (idiopathic facial paralysis)

Ildiko Gagyor, Cochrane Neuromuscular Group

Sept 2019

- 14 trials, which included 2488 participants 14 to 84 years old with mild, moderate, or severe one-sided Bell's palsy
- No clear difference in rates of incomplete recovery from Bell's palsy after treatment with the combination of antivirals and corticosteroids, compared to corticosteroids alone
  - low certainty and was based on data from three trials involving 766 people
- Combined therapy reduced the number of people left with long-term effects of Bell's palsy (excessive tearing of the eyes or an abnormal facial movement) compared to corticosteroid treatment alone.
- Corticosteroids alone were more effective than antivirals alone on rates of incomplete recovery (667 participants, 2 trials); antivirals and corticosteroids combined were more effective than placebo or no treatment (658 participants, 2 trials); and there was no clear benefit from antivirals alone over placebo (658 participants, 2 trials).
- Adverse events - no clear difference from the use of antivirals compared with either placebo or corticosteroids

Cochrane Systematic Review Antiviral Treatment for Bell's Palsy: an Opposing Opinion!

Ahmed B. Bayoumy & J. Alexander de Ru

SN Comprehensive Clinical Medicine volume 2, pages 928–932 (2020)

- This article shows that the majority of studies are in favor of the combination therapy in regard to recovery and reduction of long-term sequelae.
- fewer participants experienced these long-term sequelae after antivirals plus corticosteroids than after corticosteroids plus placebo or corticosteroids alone
- Based on all available evidence, the combination of antivirals and corticosteroids seems to be a useful treatment option and should be discussed with patients by shared decision-making.
- combination therapy should especially be recommended for patients with higher probability of poor recovery (i.e., elderly and patients with initially severe paralysis)

Pharmacological Treatments of Bell's Palsy in Adults: A Systematic Review and Network Meta-Analysis.

Authors:Jalali MM, Laryngoscope 2021 Jul; Vol. 131 (7), pp. 1615-1625

- The literature was searched from January 1, 1990, until March 1, 2020
- primary outcomes were complete recovery in short-term (≤3 months) and intermediate/long-term (>3 months) after randomization. The secondary outcome was synkinesis.
- **Results:** 21 trials comprising 2,839 participants
- In terms of good recovery, corticosteroids plus antivirals were the most effective **treatment** compared to placebo, with RRs ranging between 1.25 (95% CrI: 1.10, 1.43) for the short-term and 1.26 (95% CrI: 1.11, 1.45) for the intermediate/long-term recovery.
- For synkinesis, only corticosteroids plus antivirals (RR 0.35; 95% CrI: 0.19, 0.65) were associated with fewer synkinesis rates than placebo. The certainty of the evidence for good recovery and synkinesis was very low-low and moderate-high, respectively.
- **Conclusions:** This network meta-analysis showed that combined therapy remains the best regimen for a good recovery outcome and the only efficacious regimen for synkinesis. More research is needed to confirm these findings. **Laryngoscope**, 131:1615-1625, 2021.

Steroid 類固醇

- 1. Steroid is an effective anti-inflammatory drug
- 2. The use of one week course of high dose oral steroid is generally safe. The risk of hepatitis B reactivation is less than 1%.
- 3. Potential side effects - blood pressure elevation, worsening of blood glucose control, elevation of intraocular pressure, gastrointestinal upset and ulceration and mood change.
- 4. Monitoring for patients with hypertension, diabetes, glaucoma, on warfarin

Take home message 重點

- Facial palsy can be divided into upper and lower motor neuron lesion
- Bell’s palsy is the most common cause of facial palsies
- Carry good prognosis
- Latest study suggested the use of combined therapy with steroid and antiviral
- Physiotherapy, acupuncture, eye care all important

Thank you

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