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The Diagnosis and Treatment of Idiopathic Facial Paresis (Bell's Palsy)
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 Abstract

Background: Peripheral facial nerve palsy is the most common functional disturbance of a cranial nerve. 60-75% of cases are idiopathic.
Methods: This review is based on a selective literature search proceeding from the current, updated German-language guideline on the diagnosis and treatment of idiopathic facial nerve palsy.

Results: The recommended drug treatment consists of prednisolone 25 mg bid for 10 days, or 60 mg qd for 5 days followed by a taper to off in decrements of 10 mg per day. This promotes full recovery (number needed to treat [NNT] = 10; 95% confidence interval [6; 20]) and lessens the risk of late sequelae such as synkinesia, autonomic disturbances, and contractures. Virostatic drugs are optional in severe cases (intense pain or suspicion of herpes zoster sine herpette) and mandatory in cases of varicella-zoster virus (VZV) infection. Corneal protection with dexpanthenol ophthalmic ointment, artificial tears, and a nocturnal moisture-retaining eye shield has been found useful in practice. In cases of incomplete recovery with residual facial weakness, both static and microsurgical dynamic methods can be used to restore facial nerve function.

Conclusion: Because 25-40% of cases of facial nerve palsy are not idiopathic, differential diagnosis is very important; key diagnostic methods include a clinical neurological examination, otoscopy, and a lumbar puncture for cerebrospinal fluid examination. High-level evidence supports corticosteroid treatment for the idiopathic form of the disorder.

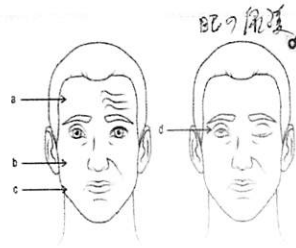


Figure 1
 Clinical features of right-sided peripheral facial nerve palsy. (a) forehead wrinkles of the forehead; (b) closed eyelid; (c) drooping corner of mouth. (d) ipsilateral loss of the 2/3 of the tongue's taste sensation is usually not observed.

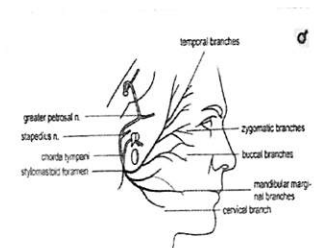


Figure 2
 Overview of the facial nerve. The cranial nerve courses via the stylomastoid foramen (SMF) into the facial palsy (FP) nerve.



Figure 3
 1: 顔面神経 nervus vestibularis. 2: 顔面神経 nervus cochlearis. 3: 顔面神経 nervus intermedius. 4: 顔面神経 ganglion geniculi. 5: 鼓索神経 chorda tympani. 6: 舌下神経 sublingualis. 7: 舌下神経 ductus submandibularis. 8: 舌下神経 sublingualis. 9: 舌下神経 sublingualis. 10: 舌下神経 sublingualis.

Table 1

The House and Brackmann scale for the severity of peripheral facial nerve palsy

Grade	Description	Fixing at rest	Forehead observation	Eye closure observation	Mouth observation
I	normal	normal	normal	normal	normal
II	mild dysfunction	normal	reduced	slightly abnormal	slightly abnormal
III	moderate dysfunction	normal	still barely possible	still barely possible	reduced
IV	moderately severe dysfunction	normal	none	incomplete	asymmetrical
V	severe dysfunction	asymmetrical	none	incomplete	asymmetrical
VI	total paralysis	complete loss of tone	none	none	none

Table 2

The differential diagnosis of peripheral facial nerve palsy (modified from [10, 15, 25])

Cause	Remarks
idiopathic	
idiopathic facial nerve palsy (Bell's palsy)	common
traumatic	
paranasal bone fracture	surgery may be indicated
infectious	
herpes zoster	lumbar puncture; antibiotic treatment tailored to the stage and extent of the infection
HIV	in the seroconversion phase with lymphocytic pleocytosis, also in the late phase with meningial lymphomatosis
herpes zoster oticus	lumbar puncture; antiviral agents
other viral pathogens: cytomegalovirus, rubella virus, mumps virus, influenza B virus, Coxsackie virus; pathogens of other types: rickettsia, ehrlichiosis	rare
Guillain-Barré syndrome	lumbar puncture, with determination of ganglioside autoantibodies when indicated; treatment: intravenous immunoglobulin (IVIg), possibly plasmapheresis
acute and chronic otitis media	otological consultation
neoplastic	
schwannoma	facial n. (rare), vestibular n.
meningioma, glioma tumor	originating in the cerebellopontine angle, often with further cranial nerve deficits
malignant tumors	skull base lesions, parotid carcinoma
cholesteatoma	slow onset, gradual worsening
metabolic	
diabetes mellitus	rarely in association with arterial hypertension
pregnancy	increased risk mainly in the last trimester
rare sporadic cases	varicella, Wegener disease, Sjögren syndrome, Miller-Fisher-Rosenthal syndrome, acute lymphatic leukemia, cerebral artery dissection in the neck

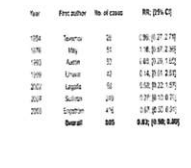


Figure 3
 Forest plot of the relative risk of idiopathic facial nerve palsy in the presence of comorbidities or possible etiologies. (CI) 95% confidence interval; (OR) relative risk; (OR) relative risk; (OR) relative risk; (OR) relative risk.

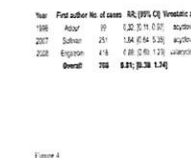
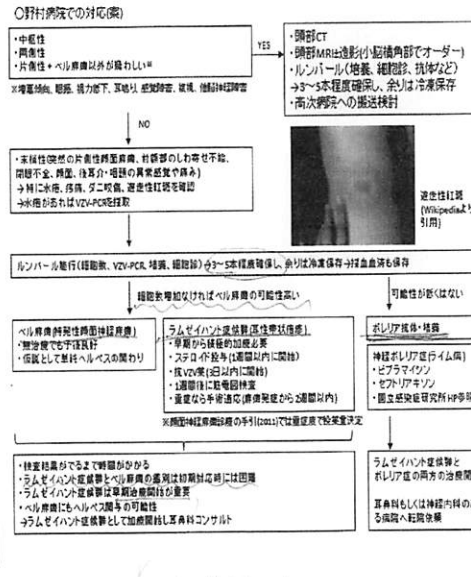
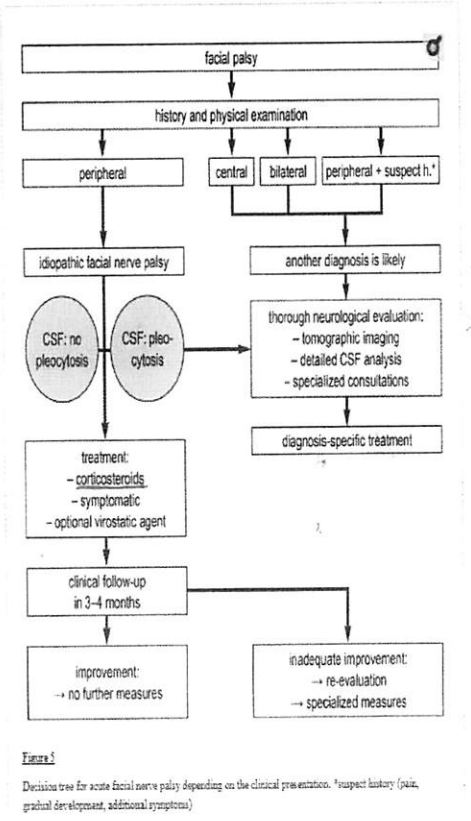


Figure 4
 Forest plot of the relative risk of idiopathic facial nerve palsy in the presence of comorbidities or possible etiologies. (CI) 95% confidence interval; (OR) relative risk; (OR) relative risk; (OR) relative risk.

1	CTにおいてペラ前部で4以上の血管影/VZV病状の発現
2	MRにおいてペラ前部で2以上の血管影/VZV病状の発現
3	髄液VZV-IgG抗体価が6.0以上
4	血清VZV-IgG抗体価において 1) CTで8以上 2) IgG髄液抗体価で80以上 3) IgG血清抗体価で2,000以上の3条件のうち2つ以上を満たすもの

腰椎穿刺の前にCTを行うべき状況 感染症診療マニュアルより引用

- 年齢 > 60歳
- 免疫不全状態
- 中枢神経疾患の既往
- 1週間以内に症候の既往
- 神経学的所見 (意識レベル異常、2つの質問に答えられない、指示に従えない、対眼神経麻痺、視野異常、顔面神経麻痺、上肢・下肢が痺れ、言語障害)
- 上記以外にも増強的にCTが正常でも腰椎穿刺を行わない状況: ショック、呼吸不全、紫斑、穿刺部位の感染、乳頭浮腫、異常体位、異常な徐脈



ヘルペス・ラムゼイハント症候群・ZSH(zoster sine herpette)
 小児期に罹患した水痘の口腔粘膜疹からVZVが逆行性に、あるいはウイルス血症によって顔面神経の隣接神経節に到達後潜伏し、後年それが再活性化することで神経炎が生じ、腫脹した神経が骨性顔面神経管の中で自己絞扼を生じ顔面神経麻痺、すなわち顔面半側の表情筋運動障害が発症する。加えて周囲の脳神経にも波及し、耳介の発赤・水疱形成や耳痛、聴覚、めまいなどを合併する特徴がある。稀に下位脳神経炎や脳炎をきたし、重篤化する²⁾。逆に顔面神経麻痺のみ症状のみで、臨床所見ではBell麻痺 (原因不明の顔面神経麻痺、近年、増強ヘルペスウイルスが関与することが明らかになった) と鑑別が困難なものも存在する³⁾。
 引用: 国立感染症研究所HP

Facial palsy
 up to 50%