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Background

- Bell’s palsy is the most common cause of unilateral facial paralysis and affects 11.5-53.3 per 100,000 individuals a year¹.
- It is characterized by rapid-onset facial paralysis over 1-3 days with complete or partial recovery typically within six months².
- Some patients can develop persistent post-paralytic symptoms such as rigidity, synkinesis, pain, and spasm³.
- Current etiological theories include anatomical, viral infection, ischemia, immune-inflammation, and cold exposure causes^{1,3}.
- It is crucial to consider alternative causes of facial paralysis prior to diagnosing a patient with Bell’s palsy. It has been suggested that the erroneous use of the eponym Bell’s palsy to refer to all facial paralysis may contribute to diagnostic and cognitive errors⁴.



Fig 1: a) Right flaccid facial paralysis, b) Right synkinesis after facial paralysis, typically associated with Bell’s.

Methods

- 3 patients identified that were originally referred to Facial Nerve Clinic (FNC) for surgical management of Bell’s palsy and later found to have occult neoplastic etiologies of facial paralysis.
- The patient’s medical records, imaging studies, audiology reports, and operative notes were reviewed.

Results/Discussion

- 3/3 (100%) patients presented with progressive-onset facial paralysis.
- 3/3 (100%) patients endorsed facial pain and hypoesthesias/paresthesias.
- 1/3 (33%) endorsed hearing loss and tinnitus.
- 2/3 (67%) patients reported a history of precancerous or cancerous head and neck cutaneous lesions.
- 3/3 (100%) patients had initially unremarkable imaging findings which showed radiographic progression over time.
- 1/3 (33%) patients responded to conservative medical treatment with steroids/antivirals/IVIG.
- 3/3 (100%) patients pursued static reanimation procedures after diagnosis/treatment.
- Mean diagnostic delay time for patients was 32.7 months (2.73 years).
- 2/3 (67%) patients had radiographs that were misread as lacking evidence of a neoplasm.
- Brain MRI/CTs were often ordered at irregular, infrequent intervals.

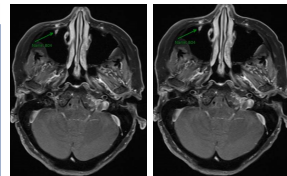


Fig 2: Case #2 Brain MRI (SW = 1.50 mm) depicting a) Abnormal linear patchy enhancement of facial nerve (FN) in right stylomastoid foramen, b) Asymmetrical enhancement of right infraorbital nerve.

Patient	Age/Sex	Characteristics	Associated Symptoms	Time to Onset	Maximum Interval Between Visits	Time to Referral	Initial Imaging Technique Grade at Ref	Previous Treatments	Cancer History	Final Diagnosis	Static Reanimation Procedure(s)	Dynamic Reanimation Procedure(s)
1	66 yo/M	5 years; Progressive, waxing and waning, irreversible, flaccid	Hearing loss, tinnitus, hypoesthesias, paresthesias	1 month	22 months	52 months	VI	Steroid, antiviral (-)	None	Right facial nerve schwannoma	Eye lid weight, indirect brow lift, lateral canthoplasty, static suspension with FL	Gracilis free muscle transfer
2	82 yo/F	2 years; Progressive, irreversible, flaccid	Facial pain, hypoesthesias	2 months	14 months	16 months	VI	Unknown	Pre-cancerous cutaneous lesions	Right metastatic SCCa with perineural spread	Eye lid weight, tarsorrhaphy, indirect brow lift, static suspension with FL	n/a
3	70 yo/M	2 years; Progressive, recurrent, irreversible, flaccid	Facial pain, paresthesias	6 months	6 months	22 months	VI	Steroid, antiviral, IVIG (+)	BCC and SCC cutaneous lesions	Right SCCa with perineural spread	Eye lid weight, medial/lateral canthoplasty, direct brow lift, static suspension with FL	n/a

Table 1: Clinical Characteristics, Diagnosis, and Treatment of Occult Neoplasms Causing Facial Paralysis in Three Patients.

Conclusion

- Occult neoplasms involving the facial nerve (i.e. FN schwannomas, SCCa with perineural spread) can be misdiagnosed as “permanent” Bell’s palsy.
- Progressive or recurrent type paralysis, multiple cranial neuropathies, and history of cutaneous head and neck malignancies may suggest a non-idiotropic cause of paralysis.
- Radiographic intervals > 6 months and/or radiographic misdiagnosis may contribute to diagnostic delays.
- Thorough history and physical examination, follow-up for facial recovery, and imaging at regular intervals is crucial for timely diagnosis of neoplasms involving the facial nerve.

References

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