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## Facial neuromas, an underdiagnosed pathology in facial palsy: A systematic review

### Abstract:

**Background:** Facial nerve paralysis is most commonly attributed as idiopathic (Bell's) palsy; however, a subset of cases may be caused by an underlying neoplasm, infection, or systemic disease. Although imaging is a sensitive method for distinguishing among the etiologies of facial paralysis, there is no consensus on its indication in the setting of new or recurrent facial nerve paralysis. Facial nerve schwannomas (FNSs) are rare, slow-growing tumors that are typically solitary, unilateral, and sporadic. Their prevalence may be underestimated since many are incidental findings on imaging, with facial paralysis often seen at a later stage. While surgery is the primary treatment for FNS, tumor and facial nerve decompression has been suggested to delay the need for complete resection and preserve facial function. Timely diagnosis helps optimize patient outcomes. This systematic review aims to determine the percentage of patients with facial neuromas who initially presented with facial palsy or were misdiagnosed as Bell's palsy.

**Design:** PRISMA guidelines were followed to evaluate the incidence of facial palsy as a presenting symptom of facial neuromas. The Pubmed and Cochrane libraries were screened for relevant studies in the last 10 years with the following search terms: "facial nerve neuroma" OR "facial nerve schwannoma" OR "facial neurilemoma". We included adult cases of intratemporal facial neuroma that included a description of facial nerve function at clinical presentation.

**Results:** A search of titles and abstracts in these two databases yielded 284 studies, 77 full-texts reviewed, and 53 met inclusion criteria. A total of 531 patients were included with 295 (55.6%) initially presenting with facial paralysis. 24 (8.14%) patients were explicitly misdiagnosed with Bell's palsy. House Brackman (HB) scores were better at onset compared to pre-operatively (2.07 +/- 1.49, 2.94 +/- 1.73, respectively). Our in-house, retrospective review resulted in 9 confirmed cases of facial neuroma with 4 (44.4%) patients having facial nerve symptoms (recurrent or persistent facial palsy, paresthesias, or spasms) and 2 (22.2%) patients initially misdiagnosed with Bell's palsy.

**Conclusion:** Our systematic review reiterates that facial paralysis is a common presenting symptom of a facial neuroma. Although idiopathic (Bell's) palsy is the primary etiology of facial paralysis, it remains a diagnosis of exclusion. A high clinical index of suspicion should be maintained for persistent (>3 months) and recurrent facial palsy episodes, as well as those associated with otologic symptoms. Earlier identification of a facial neuroma opens the door for facial nerve decompression, which can allow patients to maintain native longer facial nerve function.