

Pediatric Parotidectomy: Postoperative Facial Nerve Function

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BACKGROUND

Facial nerve dysfunction is one of the most common complications of parotidectomy. Several studies have reported rates of post parotidectomy facial nerve dysfunction in the adult population ranging between 9 - 60%¹⁻³. However, very few reports have addressed this topic in the pediatric population^{4,5}.

The spectrum of surgical parotid gland lesions in the pediatric population differs from that of the adult population. The most common indications for parotidectomy in children are infectious and inflammatory lesions; in adults, neoplastic lesions are most common⁴⁻⁷. It is essential to study the pediatric population separately from adults in order to identify outcomes that differ from adults.

OBJECTIVE

To analyze the incidence of post parotidectomy facial nerve dysfunction in pediatric patients and to evaluate the association between patient demographics or underlying pathology and functional outcomes.

METHODS

Study Design: Retrospective chart review.

Patients: children under 18 years who underwent parotidectomy at a tertiary pediatric center by a pediatric otolaryngologist between 1999 and 2011. Distributions of postoperative facial nerve dysfunction and timing of recovery were noted. Patients who underwent parotid biopsy alone and those with no follow-up information were excluded.

Statistical Analysis: Chi-square and t-test analyses were conducted to determine association between demographics or pathology and functional outcomes.

RESULTS

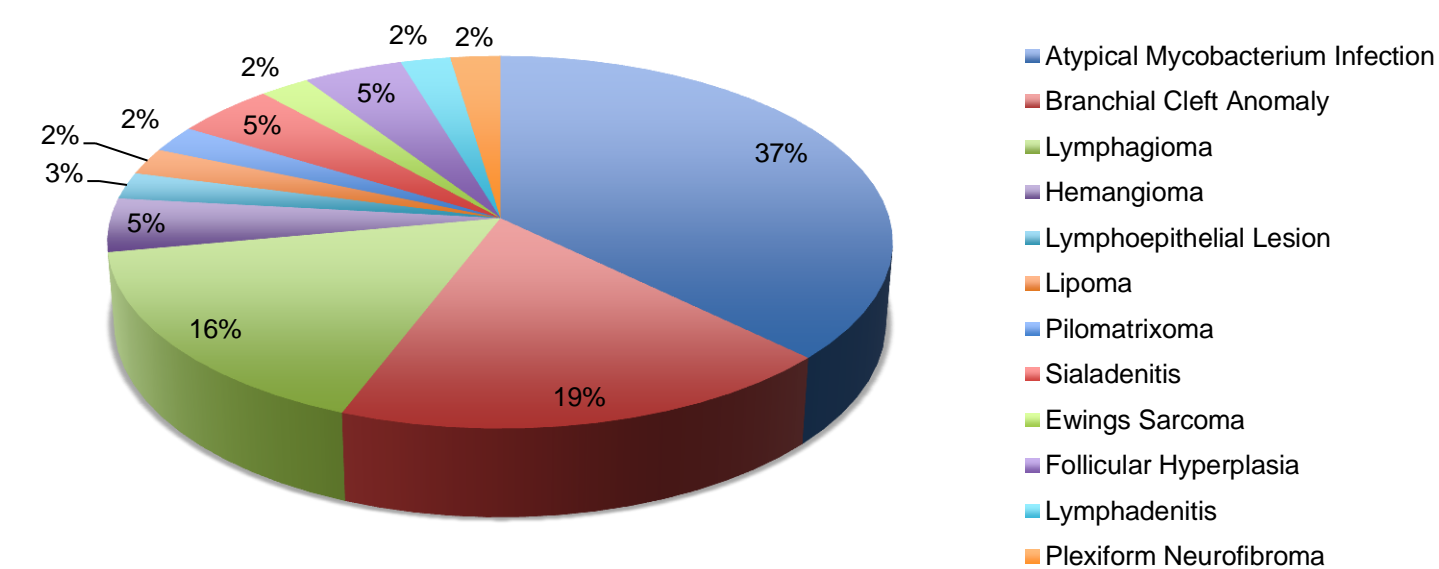
Forty-three patients met inclusion criteria: 41 underwent superficial parotidectomy, and 2 underwent total parotidectomy. Facial nerve monitoring was used in all cases.

Table 1: Characteristics of patients who underwent parotidectomy

	Study Sample	Normal Nerve	Abnormal Nerve
Count (%)	43(100)	33(76.7)	10(23.2)
Mean Age, yrs.(SD)	3.6(3.9)	4.4(3.9)	3.9(4.1)
Gender, n(%)			
Male	18(41.9)	15(34.8)	3(6.9)
Female	25(58.1)	18(41.8)	7(16.3)

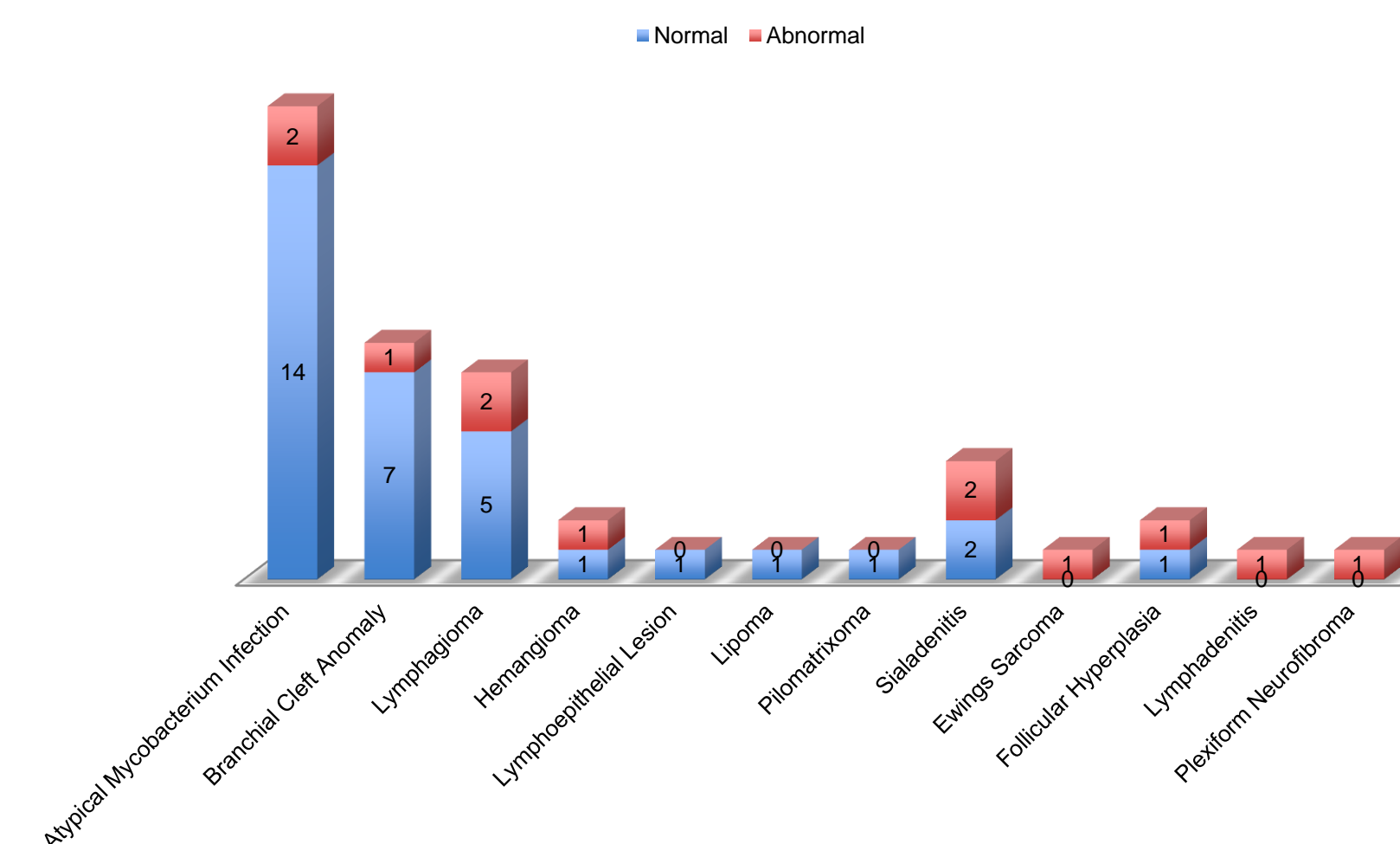
Normal nerve and abnormal nerve indicate post-operative nerve function. Student t-test showed no significant difference in age between patients with normal and abnormal post-operative nerve function ($p = 0.740$). Chi square analysis showed no correlation between gender and post-operative facial nerve dysfunction function ($p = 0.38$).

Distribution of Pathologic Diagnoses



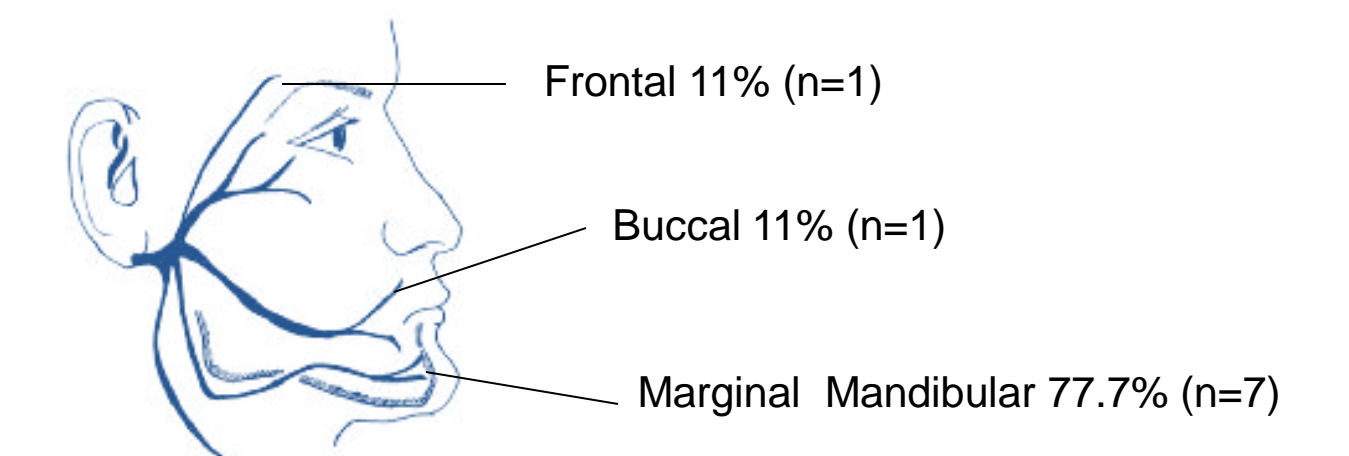
The facial nerve was sacrificed in a patient (2%) with Ewing's sarcoma with extensive nerve involvement resulting in complete immediate facial paralysis. The rate of immediate facial nerve paresis was 21%(9/43).

Post-Operative Facial Nerve Function by Diagnosis



Chi square analysis showed no correlation between diagnosis and post-operative facial nerve dysfunction function ($p = 0.26$)

Distribution of post-operative facial nerve dysfunction



Note: both marginal mandibular and frontal branches were involved in one patient

Nerve Function Recovery:

Full recovery of nerve function in patients with paresis occurred within 1 month (n=2), 2 months (n=1), 6 months (n=3), or 10 months (n=2). One patient received follow-up care from an outside provider, and the final nerve status could not be assessed

CONCLUSIONS

Post parotidectomy facial nerve dysfunction is common in the pediatric population and should be discussed during pre-operative counseling. The marginal mandibular branch was most commonly affected with most children recovering normal nerve function within six months of surgery. Age, gender and pathologic diagnosis were not predictive of post-operative nerve dysfunction.

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