Facial Nerve Monitoring during Parotidectomy: A Systematic Review and Meta-analysis


OBJECTIVES: To determine the effectiveness of intraoperative facial nerve monitoring (FNM) in preventing immediate and permanent postoperative facial nerve weakness in patients undergoing primary parotidectomy. DATA SOURCES: PubMed-NCBI database from 1970 to 2014. REVIEW METHODS: A systematic review and meta-analysis of the literature was conducted. Acceptable studies included controlled series that evaluated facial nerve function following primary parotidectomy with or without FNM (intraoperative nerve monitor vs control). Primary and secondary end points were defined as immediate postoperative and permanent facial nerve weakness (House-Brackmann score, ≥2), respectively.

RESULTS: After a review of 1414 potential publications, 7 articles met inclusion criteria, with a total of 546 patients included in the final meta-analysis. The incidence of immediate postoperative weakness following parotidectomy was significantly lower in the FNM group compared to the unmonitored group (22.5% vs 34.9%; P = .001). The incidence of permanent weakness was not statistically different in the long term (3.9% vs 7.1%; P = .18). The number of monitored cases needed to prevent 1 incidence of immediate postoperative facial nerve weakness was 9, given an absolute risk reduction of 11.7% This corresponded to a 47% decrease in the incidence of immediate facial nerve dysfunction (odds ratio, 0.53; 95% CI, 0.35 to 0.79; P = .002).

CONCLUSION: In primary cases of parotidectomy, intraoperative FNM decreases the risk of immediate postoperative facial nerve weakness but does not appear to influence the final outcome of permanent facial nerve weakness.