A-train

EMG “A-train” activity correlates with postoperative facial palsy after vestibular schwannoma surgery. An Intermediate nerve separate from the facial nerve increases A-trains without significant impact on function. Rampp et al., investigated the occurrence of A-train “clusters”, A-trains over a majority of channels within a short time frame.

Data from 217 patients with first surgery for vestibular schwannoma (VS) were evaluated retrospectively. Continuous EMG recorded with 9 channels was evaluated for A-train patterns. “Clusters” of A-trains were identified, i.e. A-trains within 3 seconds over a majority of channels. Relation to a separate intermedius, tumor size and facial palsy was evaluated.

Correlations between A-trains and postoperative facial palsy were higher in patients without separate intermedius ($r = 0.562$ versus $r = 0.194$). Clusters were identified in 107 patients (49.3%), separate intermedius in 109 (50.2%), with significant association of both ($p < 0.001$, Chi-Square test). Excluding clusters slightly increased correlation of A-trains to facial nerve function.

A-train clusters have limited relevance for predicting postoperative paresis. However, they should be regarded as warning signs, suggesting the presence of a separate intermedius nerve.

A-train “clusters” are a sign of hyperactivity of the facial nerve due to a separate intermedius nerve and may confound intraoperative monitoring during VS surgery [1].

1)
Rampp S, Illert J, Krempler K, Strauss C, Prell J. A-train clusters and the intermedius nerve in vestibular schwannoma patients. Clin Neurophysiol. 2019 Mar 15;130(5):722-726. doi: 10.1016/j.clinph.2019.02.014. [Epub ahead of print] PubMed PMID: 30901633.