Trigeminal Neurostimulation

Peripheral neurostimulation (PNS) for medically refractory trigeminal neuralgia treatment and craniofacial pain is an emerging alternative to traditional surgical approaches. Technical problems with craniofacial PNS have included electrode migration and erosion, limiting the utility and cost-effectiveness of this procedure.

Kasoff and Bina reviewed the institutional surgical technique for trigeminal PNS implantation, focusing on a novel technique for electrode anchoring.

Consecutive cases of permanent craniofacial PNS placement by a single surgeon over 36 months were reviewed for surgical technique and technical outcomes. Electrodes were placed percutaneously with open anchoring to the pericranium at a separate parietal incision.

Sixteen systems (53 electrodes) were implanted in 14 patients. Median follow-up was 13 months (range, 5-29 months). Electrode placement was successful in all cases with no intraoperative complications. There was 1 lead migration (6.3% per patient; 1.8% per lead) and no cases of erosion. Two patients (14.3%) required explant for infection, 1 of whom was successfully reimplanted. Three patients (21.4%) underwent surgical revision other than for infection.

They presented an improved method for craniofacial PNS surgery which introduces a separate incision for electrode anchoring at the parietal boss. This technique simplifies the procedure and greatly reduces rates of erosion and migration, improving patient comfort and satisfaction 1.