

Evaluation of an Innovative Computer-Assisted Sagittal Split Ramus Osteotomy to Reduce Neurosensory Alterations Following Orthognathic Surgery

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Background Sagittal split ramus osteotomy (SSRO) can be associated with postoperative neurosensory disturbances. This study aimed to evaluate the effectiveness of computer-assisted SSRO in reducing the incidence and severity of neurosensory alterations, using a surgical guide fabricated by computeraided design and rapid prototyping (to guide bone cutting lateral to the inferior alveolar nerve). Methods A prospective double-blind, randomized controlled, clinical trial of computer-assisted SSRO vs conventional SSRO (assigned in a split-mouth design) in eight patients, mean age 23 (range 18–30) years, who participated in one session preoperatively and three sessions at 1 week and 1, 3 and 6 months postoperatively. At each session, subjective oral sensation was scored and quantitative sensory tests were performed. Neurosensory changes were compared between the two sides. Results The results showed that on the computer-assisted SSRO sides, patients had lower postoperative abnormal thresholds for the Semmes–Weinstein monofilaments on lower lip and chin ($p < 0.05$ at 3 months) and for the two-point discrimination on lower lip ($p < 0.05$ at 1 week) and chin ($p < 0.05$ at 6 months), with fewer abnormal self-reported changes in lower lip sensation ($p < 0.05$ at 1 week) after surgery. Conclusions these findings imply that computer-assisted SSRO is associated with better levels of neurosensory function after surgery

Biography:

Dr. Alaa Hussein is a Specialist in Oral and Maxillofacial Surgery with over 11 years of experience. He is currently a Specialist and the Head of Oral and Maxillofacial Surgery Department at Istishari Arab Hospital. Prior to joining Istishari Arab Hospital in Ramallah, Dr. Hussein worked at the Arab American University – Jenin as the head of oral and maxillofacial surgery department/faculty of dentistry. Dr. Hussein graduated from the Faculty of Dentistry from the Arab American University - Israel. Then he continued his specialized training in Oral and Maxillofacial Surgery at Jordan University Hospital - Jordan.