Masticatory dysfunction with rigid and nonrigid osteosynthesis of sagittal split osteotomies


UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER

Temporomandibular joint and masticatory muscle dysfunction prior to and following bilateral sagittal split osteotomy (BSSO) of the mandible is not well documented. The effect, if any, that the type of internal fixation used has on dysfunctional symptoms is unclear.

Several authors have concluded that the TMJ does not appear to be affected following a BSSO with wire osteosynthesis.1-4 However, Freihofer and Petresevic5 noted that 16 of 38 patients experienced TMJ clicking after a BSSO advancement of the mandible with wire osteosynthesis. One patient reported pain in one joint, which radiographically displayed signs of arthrosis. Schendel and Epker,7 in a multi-institutional study, documented TMJ noise in 12 of 71 patients and TMJ pain in one after BSSO advancement. They concluded that there was no increased incidence of pathologic conditions of the TMJ after a BSSO.

Recently, Will and associates8 studied 41 patients at least 6 weeks after a sagittal split advancement with wire internal fixation and 6 weeks of maxillomandibular fixation. They noted a similar incidence of TMJ pain, clicking, and locking in preoperative and postsurgical populations.

While concern has been raised that rigid fixation will cause TMJ symptoms,9,10 Souyris12 reported no subjective facial pain or meniscal clicks after bicortical screw fixation of BSSO in 25 patients. Empirically, he attributed the lack of TMJ symptoms to the ability to position the ascending ramus exactly with a rigid technique. Paulus and Steinhauser13 reported almost no change between TMJ noises, clicking, and function before treatment and 2 years after treatment in patients receiving both wire and bone screw osteosynthesis.

The purpose of this study was to prospectively investigate the signs and symptoms of TMJ and masticatory muscle dysfunction in patients undergo-