

Removal of Impacted Third Molars at the Time of Mandibular Sagittal Split Osteotomy – Incidence of Unfavorable Splits in Surgery First Cases

Purpose:

The purpose of this study was to investigate the effects of the presence and removal or absence of mandibular third molars during sagittal split osteotomies (SSOs) on the incidence of bad splits and fracture patterns for surgery-first orthognathic cases.

Material and Methods:

This was a retrospective study of patients who underwent surgery-first orthognathic surgery at Chang Gung Memorial Hospital between 1/1/2013 and 10/31/2016 by the same surgical team. Patients with congenital craniofacial deformities, maxillomandibular advancement for obstructive sleep apnea, pre-surgical orthodontics, incomplete radiographic or follow up records were excluded. Patient demographics such as the age and gender of the patients, preoperative diagnosis, types of osteotomies performed, presence or absence of mandibular third molars at the time of surgery, whether the mandibular third molars were removed concomitantly, occurrence of bad splits, and the fracture patterns were recorded. A total of 515 patient records, 1030 sagittal split osteotomies were included in the review.

Results:

515 patients consisted of 342 females and 173 males. 8 patients had BSSO and 507 patients had double-jaw surgery with Le Fort I osteotomy and BSSO. The average age was 25.1 ± 5.2 . The preoperative diagnosis included skeletal class III malocclusion, class II malocclusion, bimaxillary protrusion, facial asymmetry and the number of patients with the diagnosis were 394, 58, 24 and 39, respectively. A total of 322 right mandibular third molars (M3) were present and 280 were removed at the time of surgery. A total of 325 left mandibular M3 were present and 284 were removed concomitantly during BSSOs. A total of 6 recorded incidences of bad splits were recorded. Two of the bad splits occurred on the right side; in both cases, the mandibular third molars were absent at the time of surgery. Four bad splits occurred on the left mandible; M3 were absent in one patient, removed in two patients, and retained in one patient. Five out of the six bad splits occurred on the proximal segments away from the M3 extraction sites. Only one bad split occurred on the distal segment adjacent to the M3 extraction site.

Conclusions:

The presence of M3 and concomitant removal of M3 is not associated with increased risk of bad splits in surgery-first orthognathic cases.