

EFFECT OF SCREW NUMBER ON THE STABILITY OF BILATERAL SAGITTAL SPLIT RAMUS OSTEOTOMY (BSSRO) IN RIGIDLY FIXED MANDIBULAR SETBACK

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ABSTRACT :

The present study was conducted to compare the stability of BSSRO using different numbers of screws in mandibular setback. The study involved "24" patient equally divided into three groups, "8" patients in each group. In group I the BSSRO was stabilized using "2" screws while in groups II and III The BSSRO was stabilized using "3" and "4" screws respectively. At one year post-operatively the results indicated that "3" and "4" screw fixation yielded more stable results than "2" screw fixation. While, there was no significant difference between "3" and "4" screws. It could be concluded from this study that triangular "3" screw fixation seemed to be optimal for stabilization of BSSRO mandibular setback.

INTRODUCTION AND REVIEW

OF LITERATURE

Since its introduction by Trauner and Obwegeser (1957)^(1,2) the Bilateral Sagittal Split Ramus Osteotomy (BSSRO) has become the most widely used orthognathic technique to correct different mandibular deformities. Merits of the BSSRO include its versatility, predictability, broad bony contact between the osteotomized segments and maintenance of the spatial relation of the masticatory muscles to the proximal segment.^(3,4)

With the widespread application of BSSRO the technique has been modified by Dal Pont (1961),⁽²⁵⁾ Hunsuck (1968),⁽⁶⁾ Epker (1977)⁽⁷⁾ and Wolford and Davis (1990)⁽²⁸⁾, in an attempt to increase its predictability and decrease its morbidity.

Perhaps one of the most debatable aspects of

the BSSRO technique, is the method of fixation of the bony segments after the distal segment being moved to its pre-planned position.⁽⁴⁾ Fixation techniques include non-rigid fixation with wiring and maxillo-mandibular fixation (MMF), as circumramal,⁽⁹⁾ superior border⁽¹⁰⁾ and inferior border⁽¹¹⁾ wiring techniques. Rigid internal fixation (RIF) in stabilization of the BSSRO was pioneered by Spiessl (1976).⁽¹²⁾ Advantages of RIF include more stability, rapid return to function, avoidance of disadvantages of MMF on the masticatory apparatus and more patient comfort and acceptance.⁽¹³⁾

Since the application of RIF in stabilization of BSSRO, wide range of screw numbers (2, 3,4 or 5 screws), screw diameters (2.0 Vs 2.7 mm), configuration patterns (linear Vs triangular orientation), insertion techniques (lag Vs positional) and

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