

ANALYSIS OF FACTORS LEADING TO HARDWARE REMOVAL OF RIGIDLY FIXED FACIAL FRACTURES

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ABSTRACT

Objectives: The purpose of this study was to investigate different factors that lead to removal of plates and screws in rigidly fixed facial fractures.

Materials and Methods: Records of 44 patients treated by open reduction and rigid internal fixation for maxillofacial fractures were collected and analyzed. A total number of 137 plates including macro, mini and low profile plates were inserted. After fracture healing, patients were followed up once every 6 months. The follow up period ranged from 1.2 to 3.4 years with a mean of 1.9 years.

Results: A total number of 137 plates were inserted, 28 plates (20%) were stainless steel and 109 plates (80%) were titanium. A total number of 45 plates (33%) were removed. 19 (68%) out of 28 stainless steel plates were removed. 26 (24%) out of 109 titanium plates were removed. 11 plates (24%) were removed because of infection. 11 plates (24%) were removed because of tissue break down and plate exposure. 9 plates (21%) were removed because of plate prominence. 5 plates (11%) were removed for secondary procedures as genioplasty & rhinoplasty. 3 plates (7%) were removed because of thermal conductivity. 2 plates (4%) were removed for persistent numbness. 2 plates (4%) were removed due to screw loosening. 2 plates (4%) were removed according to patient's request.

Conclusion: Through the use of a more biological compatible material, the less bulky implant, vigilant infection control and favorable plate location, the need for removal of plates after facial fracture management may be reduced.

INTRODUCTION AND REVIEW OF LITERATURE:

Rigid fixation of facial bone fractures using different plate and screw configurations has been used now for more than a century.⁽¹⁾ During the mid 1960's Hans Luhr⁽²⁾ who was dissatisfied with the early bone plating techniques, which still relied on intermaxillary fixation, pursued basic and clinical research in the use of rigid internal fixation for maxillofacial surgery. The principles of rigid internal fixation have been laid down by the AO/ASIF

(Arbeitsgemeinschaft für Osteosynthese Fragen Association for the Study of Internal Fixation) in Switzerland. The Association developed its first internal fixation system, which relied primarily on a specially designed implant, the dynamic compression plate (DCP). When used properly, this plate provided rigid internal fixation and compression of the fractured parts.⁽³⁾ The use of these hardware started in Europe in the late 1970's and in North America in the late 1980's.⁽⁴⁾ Proponents for rigid fixation of facial bone fractures list several ad-

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