Comparison of blair-ivy wire loops and arch bar splinting in the immobilization of mandibular fractures

Shaban Daud Shaban

Master of Dentistry in Oral Surgery

University of Dar es Salaam, College of natural and applied sciences, 2006

Facial bones are susceptible to fractures from different afflictions; most frequently affected being the mandible. In the majority of developing countries, closed reduction and immobilization is the principal method of management of jaw fractures, the most commonly used techniques being the Blair-Ivy wire loops and the arch bar splinting. A few studies have been done in Africa to analyze the efficiency and detrimental effects of these splinting techniques. No such study has been done in Tanzania. Clinical comparison of the Blair-Ivy loop wiring and the arch bar splinting in the immobilization of mandibular fractures. Prospective longitudinal study carried out from June - December 2005, at the Department of' Oral Surgery and Oral Pathology , Muhimbili University College of Health Sciences. A total of I 04 patients (91 males, 13 females) with mandibular fractures, amenable to closed reduction and immobilization were included and randomly assigned into two treatment groups namely those on Blair-Ivy wire loops and arch bar splinting. Sustained injuries, treatment rendered, healing and occlusal outcome, detrimental postoperative complications and costs of the procedures involved were analyzed. Results: While the mean age was 31.07 years, the peak age-group was 20-29 years among the cases managed. Violence was the main cause of fractures, accounting for 48 (46.1%) of the patients. Men were more frequently involved, regardless of the etiological factor or age, comprising 91 (87.5%) patients and with a male to female ratio of 7:1. The mandibular symphysis was the most affected site (38.6%). Satisfactory outcome was achieved in . 45 (86.5%) patients on Blair-Ivy wiring and 28 (53.8%) patients on arch bar fixation. Arch bar splinting led to malocclusion in 24 (46.2%) patients compared to 7(13.5%) patients in the Blair-Ivy wire loops group. In addition to causing more severe forms of gingivitis, tooth mobility and deeper periodontal pockers, arch bar splinting was 2.5 times more costly. The conclusion, Blair-Ivy wire loops gave better clinical outcome, caused less severe forms of periodontal disease, no other significant post operative complication like infection and were found to be more cost- effective than arch bars.