

NOVEL CONCEPT OF DUAL STAKED PLATING IN SEGMENTAL RADIUS FRACTURE : A CASE REPORT

Lee Zhi Cheong¹, Chuah Jia Peng¹, Lutfi Rashid¹, Yohan Khirusman¹, C. Sankara Kumar Chandrasekaran¹

¹University Malaya Medical Centre

Introduction: Combined injuries of metaphyseal and diaphyseal radius fracture are rare and usually caused by high energy which often pose a surgical dilemma to orthopaedic surgeons. We present an unusual case of dual-stacked plating in a closed segmental radius and ulnar fracture. 46 year-old construction worker fell from 2 storey height while working and landed onto his right forearm which he sustained closed segmental fracture right radius and distal end ulnar. On examination, moderate swelling noted with intact neurovascular. He underwent surgery which open reduction and internal fixations were performed. Intraoperatively, dual locked plates were used to fixed the segmental radius fracture and plates were staked on top of each other with one common screw allowing applied stress to be evenly distribute. Hook plate was used to fix the distal end ulnar.

Discussion: Operative techniques and implants routinely used either for isolated radius shaft fractures or distal end radius fractures are often not applicable for this combined injury. The fracture configuration of index patient was unusual and dual staked plating was performed. This method enables applied strain to be evenly distributed along the implant bone interface which help to minimizing stress risers to prevent risk of inter-prosthetic fracture and increases strength of the implants. However, there are associated disadvantages which include excessive soft-tissue dissection, periosteal stripping and bone weakening from multiple screw holes leading to risk of non-union/implant failure. Despite the paucity biomechanical evidence and literatures, stacked plating does provide an alternative and novel information for the orthopedic surgeon seeking different treatment options. By combining two plates and stacking them, it was able to achieve stable construct.

Conclusion: Staked plating is a simple yet effective technique based on basic osteosynthesis principles that can be used when other options are not feasible. It can provide a stable fixation allowing early physiotherapy and bone healing