

# THE PLATE FIXATION IN THE TREATMENT OF COMPLEX FOREARM OPEN FRACTURES

M Uğurlar, MD<sup>1</sup>; F Kabakaş, MD<sup>2</sup>; MM Sönmez, MD<sup>2</sup>; E Ertürer, Ass. Prof.<sup>3</sup>; B Mersa, Ass. Prof.<sup>2</sup>; İB Özçelik, Ass. Prof.<sup>2</sup>

<sup>1</sup>Department of Orthopaedics and Traumatology, Sisli Hamidiye Etfal Training and Research Hospital, İstanbul, Turkey

<sup>2</sup>Hand and Microsurgery, IST-EL Hand Surgery, Microsurgery and Rehabilitation Group, İstanbul, Turkey

<sup>3</sup> Bilim University School of Medicine, Şişli Florence Nightingale Hospital, İstanbul, Turkey

## INTRODUCTION

- In the treatment for open fractures, primary therapeutic goals may be summarized as bone union, prevention of the infection and the restoration of the function
- In the cases in which vascular injury accompanies open fractures (Gustilo-Anderson type IIC and Tscherne type III), primary goal is to maintain the vitality of the extremity
- We aimed to evaluate the safety and the outcomes of plate-screw fixation used for the immediate treatment of the subjects with forearm Gustilo-Anderson type IIC and Tscherne type III open fractures due to occupational accident

## METHODS

- 22 patients (21 men, 1 woman) treated between 2004 and 2010 due to Gustilo-Anderson type IIC and Tscherne type III open fracture in the forearm were retrospectively studied
- Mean age: 31.6 years
- All injuries resulted from high-energy traumas (Figure 1, 2)
- Mean time from the occurrence of injury and time of admission to the hospital was 4.2 hours
- All patients were operated within the first eight hours after the occurrence of injury (Figure 3)
- Functional outcomes were evaluated by DASH scoring system
- Mean follow-up: 28 months



Figure 1

## RESULTS

- In all patients, radius bone union was achieved
- 2 patients underwent a Sauve-Kapandji procedure, using the fractured segment of the ulnar diaphysis as a graft for radius
- Mean period to bony union: 4.59 months
- Superficial infection rate was 13% after the operation and resolved with the use of antibiotherapy
- Mean DASH score after surgery: 25.6



Figure 2

## CONCLUSION

- The severity of the trauma, patient's general status, simple or complex nature of the fracture and the extent of wound contamination should be considered when selecting the therapy
- Appropriate trauma unit and experienced surgical staff will increase the likelihood of success
- At the centers where the required conditions are met, together with cautious irrigation and debridement, providing that regular wound monitorization and prophylaxis is ensured, internal fixation is a safe and efficient therapeutic option in the immediate treatment for complex forearm type IIC open fractures



Figure 3