



Clinical and radiological outcomes of a cohort of 9 patients with anatomical fractures of the cuboid treated by locking plate fixation

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INTRODUCTION: Cuboid fractures are very rare. Hence, their treatment has not been standardized. Advances in imaging techniques, particularly three-dimensional computed tomography (3D CT), and the introduction of cuboid-specific plates has improved the care of these injuries. The aim of this study was to determine the radiological and clinical outcomes of anatomical reconstruction of comminuted cuboid fractures with a locking plate.

HYPOTHESIS: Fixation of comminuted cuboid fractures with a cuboid-specific locking plate leads to stable anatomical reduction and good functional outcomes.

MATERIAL AND METHODS: This was a retrospective study of 9 consecutive cases of comminuted cuboid fracture treated at a single hospital between January 2009 and December 2015. A 3D CT scan was performed preoperatively with subtraction of the posterior tarsal bone to allow the articular facets to be viewed and analyzed. Fracture fixation was done with a Locking Cuboid Plate (DePuy Synthes™). Associated lesions in the foot were treated during the same procedure. The patients were reviewed by an independent observer who performed a clinical examination, and determined the AOFAS and Maryland Foot Score. The success of the reconstruction was determined by comparing the parameters on weight-bearing X-rays views between the fixed and non-operated cuboid.

RESULTS: The mean follow-up was 4.1 years (range 1-6). The Maryland Foot Score was 93.1 [86-100] and the AOFAS was 91.9 [82-100]. The reconstruction was anatomical and long lasting in all 9 cases. There was no foot misalignment in the frontal plane, based on the radiographs (hindfoot axis 5.5° [0-9]). The mean Djian-Annonier angle was 123.9° [108-130].

CONCLUSION: Cuboid fractures can be treated effectively through appropriate imaging and with a cuboid-specific locking plate as evidenced by very good midterm clinical and radiological outcomes in this study.

LEVEL OF EVIDENCE: IV Retrospective study.

Résumé en anglais

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