ABSTRACT

Objective: To evaluate the clinical outcome of patients with acute scaphoid fractures treated by percutaneous screw fixation.

Patients and Methods: The technique using 3.0 mm titanium short-threaded cannulated screws, which have a self-tapping function, is reported. In a retrospective study of 21 patients from January 2001 to June 2003, the union rate, time for radiological union, range of wrist motion, and grip strength were assessed.

Results: The radiological union rate was 100% at a mean time of 13.5 weeks although clinical union occurred much earlier. Patients had rapid functional recovery. The range of motion almost returned to normal. Removal of the screw was straightforward.

Conclusion: Percutaneous fixation may be the mainstay of treatment for non-displaced or minimally displaced acute scaphoid fracture.

Key Words: Outcome, Percutaneous screw fixation, Scaphoid fracture

INTRODUCTION

Scaphoid fracture is the most common carpal fracture, with an incidence of 38 fractures per 100,000 men per year. Non-displaced acute scaphoid fracture has been treated by plaster immobilisation. However, prolonged immobilisation (up to 3 months) in a cast may result in temporary joint stiffness and muscle weakness. In addition, patients may need a long period away from work and athletic activities. However, the reported union rate is approximately 88% and the union time ranges between 8 and 12 weeks.

Open reduction and internal fixation is technically demanding and there is a danger of damage to the blood supply of the scaphoid and radiocarpal ligaments. The reported union rate with open Herbert screw fixation is 90%.

For non-displaced or minimally displaced fractures using Herbert’s classification B1 or B2, these problems can be prevented by the use of a percutaneous cannulated screw, which provides stable fixation and allows early mobilisation. There is no need for cast immobilisation and wide surgical dissection.

PATIENTS AND METHODS

This report is of a technique using AO/ASIF 3.0 mm titanium short-threaded cannulated screws, which