Symposium on Advances in the Management of Scaphoid Problems

Percutaneous cannulated screw fixation of acute scaphoid fractures: how we do it

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Abstract

Percutaneous cannulated screw fixation of acute scaphoid fractures is a minimally invasive technique. The operation causes no damage to the radiocarpal ligaments nor does it impair the blood supply to the scaphoid. Cast immobilisation is not required. It allows wrist movement immediately after surgery, and patients can enjoy an early return to work and sports. This paper discussed the authors’ experiences in using this technique.

Key Words: Acute scaphoid fracture; Percutaneous cannulated screw fixation

Introduction

Fracture of the scaphoid is the most common carpal injury in the wrist. Traditionally, acute undisplaced scaphoid fractures were treated with cast immobilisation, but the reported outcomes were variable. The nonunion rate was as high as 63.6%, that of displaced scaphoid fractures is even higher. Eddeland et al reported a nonunion rate of almost 92% in conservatively treated scaphoid fractures that were displaced more than 1 mm. Many patients treated conservatively for scaphoid fracture experienced uncertainty in fracture healing that can result in prolonged immobilisation.

In contrast to cast treatment, early fixation of scaphoid fracture can give great satisfaction to a patient provided that good reduction and stable fixation of fracture has been achieved. A patient can enjoy early mobilisation; that is, regaining the range of motion of the hand and wrist relatively early and avoiding the discomfort of cast immobilisation. This progress has meant a lot to our patients despite the fact that the final functional outcomes may be similar between the cast and fixation treatment groups.

Operative Treatment Options

Open reduction and internal fixation

An important milestone in the surgical treatment of scaphoid fractures was the introduction of the Herbert screw in 1984. Its headless and differential pitch design enhanced compression across the fracture. A union rate of 85.7% for 49 acute, unstable-type scaphoid fractures was reported in Filan and Herbert’s series.