

## **Introduction**

Scaphoid bone is the most commonly fractured carpal bone accounts for 50 to 80% of all carpal bone fractures and about 11% of all hand fractures. Mainly young, active individuals are subjected to scaphoid fractures. [1, 2] Several classification systems were used for describing scaphoid fractures; however Herbert and Fisher classification was commonly used. [3](Fig.1) About 80% the fracture occurs at the scaphoid waist. These fractures are usually considered to be stable and have a good tendency to heal with conservative treatment. Immobilization in a thumb spica cast for 8-12 weeks is the most accepted treatment, however may not be accepted by the young and active population, because of professional or sports related activities or for social reasons. Moreover, disadvantages of cast immobilization, such as stiffness and decreased hand grip. [4] As an alternative to conservative treatment, percutaneous screw fixation, has gained popularity. Percutaneous screw fixation of the scaphoid was first reported by Streli in 1970. [5] This treatment allows a more rapid return to work and sports activities. This technique avoids devascularization of the scaphoid, division of the carpal ligaments, and providing a much more aesthetic scar. [1, 6, 7] Since about 80% of the scaphoid bone surface is covered with articular cartilage, this greatly limits potential points of entry for fixation devices. An additional constraint is the boat-shaped of the scaphoid. This means that a wire, or fixation device, along the true central axis of the scaphoid is not an easy maneuver and needs special skills. [8] In this study, we present results on a homogeneous sample of patients with type B2 fractures, treated with percutaneous screw fixation, highlighting technical details and outcome.

## **Methods**

Between March 2011 and March 2015, we treated 15 scaphoid fractures by percutaneous scaphoid fixation technique at orthopedics and traumatology department, Benha university hospitals. They were 13 men and 2 females with a mean age of 26.4 years (17 to 40). Scaphoid fractures were 10 at the right side and 5 at the left side. Mechanism of trauma was fall on outstretched hands in 14 patients and road traffic accident in one patient. Ten fractures were on the dominant side and five on the non-dominant side. Mean time from injury to surgery was four weeks (11 days to 5 weeks). Plain radiography showed the fracture in all cases. All patients had a pre-operative wrist CT to confirm the diagnosis and to exclude AVN. According to Herbert and Fisher classification [3], all fractures were type B2. All patients were followed up for 6–50 month, with an average of 33 months.