ECRONICON OPEN ACCESS

ORTHOPAEDICS
Commentary

Shahid Technique: To Help Reduce Suitable Fracture Configurations to Facilitate Ease of the Lag Screw Principle

Shahid MK[1]*, Ghani R[1] and Robati S[2]

[1]*Department of Trauma Orthopaedics, Queen Elizabeth Hospital, Birmingham, United Kingdom*

[2]*Department of Trauma Orthopaedics, Darrent Valley Hospital, United Kingdom*

***Corresponding Author:** Mohammad Kamran Shahid, Department of Orthopaedics, Queen Elizabeth Hospital, 46 Pereira Road, Harborne, Birmingham, B17 9JN. United Kingdom.

Received: January 11, 2015; **Published:** April 27, 2015

Abstract

'Shahid Technique' to help reduce suitable fracture configurations to facilitate ease of the Lag Screw Principle.

In oblique fracture configurations, inter fragmentary compression at a fracture site can be achieved using the 'Lag Screw Principle'. A screw inclination perpendicular to the fracture plane in this configuration allows for optimal compression. If compression is applied at an angle greater than 20 degrees to the perpendicular fracture plane, fracture sliding will occur.

We propose using three clamps to achieve compression thus allowing for stable reduction prior to applying the lag screw principle. This manoeuvre generates optimum temporary compression, stability and creates adequate space for drilling and applying the lag screw principle.

Keywords: *Lag screw; Fracture reduction*

Introduction

In oblique fracture configurations, inter fragmentary compression at a fracture site can be achieved using the 'Lag Screw Principle'. A screw inclination perpendicular to the fracture plane in this configuration allows for optimal compression. If compression is applied at an angle greater than 20 degrees to the perpendicular fracture plane, fracture sliding will occur [1]. Traditionally, a single reduction clamp is used to aid inter fragmentary compression, and is applied to both fracture fragments adjacent to the perpendicular fracture plane to facilitate the optimum direction of the screw. The clamp position is usually compromised in favour of this optimum screw position but can result in temporary instability in maintaining reduction resulting in bone crushing or complete loss of reduction.

Methods

We propose using three clamps to achieve compression thus allowing for stable reduction prior to applying the lag screw principle (Figure 1). A clamp is anchored onto each fracture fragment; a third larger clamp compresses the two clamps at the superior aspect of their handles. This manoeuvre generates optimum temporary compression, stability andcreatesadequate space fordrilling and applying the lag screw principle. We propose this to be a safer technique of providing temporary fracture compression allowing for safer drilling when inserting the screw.

Figure 1: *'Shahid' technique demonstrated on a saw-bone model of a humerus using three clamps.*

Discussion

This novel technique is suitable for oblique humeral shaft fractures, where it is difficult to insert the lag screw perpendicularly to the fracture plane as a single sub-optimal clamp is often obstructing the correct inclination in favour of temporary stability to successfully undertake the procedure.

Conflict of Interest

We have read and understood this journal's policy on declaration of interests and declare that we have no competing interests

Bibliography

1. Johner R., *et al*. "Rigidity of pure lag-screw fixation as a function of screw inclination in an in vitro spiral Osteotomy". *Clinical Orthopaedics and Related Research* 178 (1986): 74-79.

Volume 1 Issue 1 April 2015