Summary

Plating techniques remains the main stay for managing most periarticular and selected long bone fractures. However, movement towards more biologically appropriate plating techniques is occurring in an attempt to minimize soft-tissue stripping, decrease the need for bone grafting, and improve union rates.

The locked compression pate (LCP) is a newly developed plating system based on scientific insights into bone biology especially with reference to its blood supply.

This new design with its combination holes can be used in different situations; it can be applied either in a conventional technique (compression principle), bridging technique (internal fixator principle) or combination technique (compression and bridging).

In conventional technique, it is as much the same as conventional plating where it is used for simple diaphyseal and metaphyseal fractures as well as intra-articular fractures. In case of good bone quality, conventional screws are used with 3 bicortical ones on each side of the fracture. In osteoporotic bone, locking head screws (LHS) should be used with 3 on each side of the fracture where at least one is bicortical.

In the bridging technique as in comminuted fracture, periprothetic fractures and tumor surgery, the plat is applied in a minimally invasive approach (MIPO).with less damage to the blood supply and soft tissue, healing of the fracture is more rapid and by callus formation.

In case of good bone quality, 3 monocortical LHS are used on either side of the fracture. In osteoporotic bone, one of he 3 LHS should be bicortical.

In the combination technique as in articular fractures with comminution extending into diaphysis or in segmental fractures with different fracture

patterns, both principles of compression and bridging are used with only one type of screw in the hole.

The LCP offers several advantages, the most important is preservation of the under lying blood supply to the bone. In addition, it provides angular stability with maintenance of primary reduction. The stability here depends on friction between the screw and the plate and not the plate and the bone. The plate is also stable under load with no loosening and no secondary displacement.

To benefit from these advantages, careful selection of patients, sticking to the indications and applications of a proper technique with propoer instruments is all mandatory. Otherwise, complications will arise as in any other plating system.