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## Pearls for the Practitioner

### Topic: Locking Plate Systems and Clinical Applications

*The Animal Medical Center has created this e-mail publication to keep you informed about the latest practices in veterinary medicine and how these practices are being applied at The AMC. If you are interested in obtaining past issues of "Pearls for the Practitioner" or if you would like to be removed from this mailing list, please e-mail [lynne.freeman-gassem@amcny.org](mailto:lynne.freeman-gassem@amcny.org).*

**Locking plates** are similar to traditional plates in many ways. The differences between the two are what make locking plates unique. The screw head is locked into the plate upon tightening creating a fixed construct. Because the screw and plates are locked together, the plate does not have to be perfectly contoured to the bone. Because the bone-plate surface is not as important, the construct acts more like an external fixator, except the construct is close to the bone.

Locking plates are designed to allow for locking screws or regular (non-locking) screws. When placing locking screws, it is imperative that the screw is placed perpendicular to the plate. If this is not possible due to anatomic considerations (i.e., close proximity to a joint, conformation of the bone), then a regular (non-locking) cortical screw can be placed, allowing angulation of the screw placement.

Locking plates can be used for all fracture types that traditional plates are used with. However, locking plate systems are an alternative for high-energy fractures, where stability with traditional plating would be questionable (i.e., highly comminuted fractures). Locking plates can also be used for **minimally invasive plate osteosynthesis (MIPO)**, also called percutaneous plating. This is a minimally invasive fracture stabilization, where the plate is applied through small skin incisions proximal and distal to the fracture site. The fracture is reduced and the plate and screws are usually applied with fluoroscopic assistance. This technique applies the principles of **biologic osteosynthesis** since the fracture site itself is not disturbed. Not all fractures are amenable to MIPO.

Although case selection can only be made on an individual basis, locking plates provide surgeons with an alternative system for complex fracture fixation as well as minimally invasive options.

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#### **The Department of Surgery at The AMC**

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