

# **Standard Operating Procedures for Evolox® Osteosynthesis Fixation of Fractures**

## **Humerus - Elbow 'Y' or 'T'**

Combined medial and lateral approaches. Anatomic reconstruction with lag screws, K wires etc. Fracture reduction of the articular surface should be confirmed by direct visualization.

If only locking screws are used, contouring of the plate is generally not required. The use of Locking Drill Guides is recommended to ensure correct screw trajectory. The Locking Drill Guides can also be used as handles to help position the plate. Drill through the guide hole to the desired depth using an appropriate sized drill bit. Measure the hole depth via a depth gauge. Remove the Locking Drill Guide and insert the appropriate length Locking Screw using a screwdriver. Do not use power tools to insert the locking screws.

If non-locking screws (cortex/cortical or cancellous) are used in the plate, the following precautions are necessary:

Since conventional screws pull bone to the plate, contouring of the plate may be required to enhance bone-plate contact. If non-locking screws are used in combination with locking screws, non-locking screws must be adequately inserted and fully tightened prior to locking screw(s) insertion. Cortical bone screws must be 'self-tapping'. Cancellous bone screw insertion will require pre-tapping of the hole.

Note: Contouring of the plate will alter the angle of the locking screws. It is recommended to contour the plate between the holes at the location of the crumple zones and insert locking plugs prior to contouring to avoid distortion of internal threads. Use the Evobend® for convenient plate contouring.

Two Evolox® Osteosynthesis Plates, one medial and one lateral. Total of 4 Evolox® Osteosynthesis Plate screws in reconstructed condylar fragment (not necessary to have all 4 screws in the same Evolox® Osteosynthesis Plate). Total of 4 screws in proximal major fragment (not necessary to have all 4 screws in the same Evolox® Osteosynthesis Plate). Two x 2.7 mm Evolox® Osteosynthesis Plates in patients up to 20 kg. Two x 3.5 mm Evolox® Osteosynthesis Plates in patients over 35 kg. Fill any empty holes with a locking plug.

### **Relative Contraindications**

The veterinarian's education, training and professional judgement must be relied upon to choose the most appropriate surgical implant and treatment. The following contraindications should be taken into account by the veterinarian:

- Any active or suspected latent infection or marked local inflammation in or about the surgical site.
- Compromised vascularity that would inhibit sufficient blood supply to the fracture site.
- Bone stock compromised by pathology prior to application that cannot provide adequate support and/or fixation of the implants.
- Implant sensitivity, documented or suspected.
- Obesity. An overweight animal can produce loads on the implant that can lead to failure of the surgical procedure or the implant itself.
- Animals having insufficient soft tissue coverage over the operative site.
- Implant application that would interfere with normal anatomical structures and range of motion.
- Any neuromuscular pathology that would create an unacceptable risk of fixation failure or postoperative complications.
- Other medical or surgical conditions which would preclude the potential benefit of surgery.

## **Femur – Diaphysis**

If only locking screws are used, contouring of the plate is generally not required. The use of Locking Drill Guides is recommended to ensure correct screw trajectory. The Locking Drill Guides can also be used as handles to help position the plate. Drill through the guide hole to the desired depth using an appropriate sized drill bit. Measure the hole depth via a depth gauge. Remove the Locking Drill Guide and insert the appropriate length Locking Screw using a screwdriver. Do not use power tools to insert the locking screws.

If non-locking screws (cortex/cortical or cancellous) are used in the plate, the following precautions are necessary:

Since conventional screws pull bone to the plate, contouring of the plate may be required to enhance bone-plate contact. If non-locking screws are used in combination with locking screws, non-locking screws must be adequately inserted and fully tightened prior to locking screw(s) insertion. Cortical bone screws must be 'self-tapping'. Cancellous bone screw insertion will require pre-tapping of the hole.

Note: Contouring of the plate will alter the angle of the locking screws. It is recommended to contour the plate between the holes at the location of the crumple zones and insert locking plugs prior to contouring to avoid distortion of internal threads. Use the Evobend® for convenient plate contouring.

4 screws in distal and 4 screws in proximal fragments. Single 2.7mm Evolox® Osteosynthesis Plate in patients up to 10 kg (medial aspect). Single 3.5mm Evolox® Osteosynthesis Plate in patients up to 35 kg (lateral aspect). Double 3.5mm Evolox® Osteosynthesis Plate in patients over 35 kg (lateral aspect). Fill any empty holes with a hole plug. If only locking screws are used in the plate absolute anatomical contouring is not necessary.

### **Relative Contraindications**

The veterinarian's education, training and professional judgement must be relied upon to choose the most appropriate surgical implant and treatment. The following contraindications should be taken into account by the veterinarian:

- Any active or suspected latent infection or marked local inflammation in or about the surgical site.
- Compromised vascularity that would inhibit sufficient blood supply to the fracture site.
- Bone stock compromised by pathology prior to application that cannot provide adequate support and/or fixation of the implants.
- Implant sensitivity, documented or suspected.
- Obesity. An overweight animal can produce loads on the implant that can lead to failure of the surgical procedure or the implant itself.
- Animals having insufficient soft tissue coverage over the operative site.
- Implant application that would interfere with normal anatomical structures and range of motion.
- Any neuromuscular pathology that would create an unacceptable risk of fixation failure or postoperative complications.
- Other medical or surgical conditions which would preclude the potential benefit of surgery.

## **Tibia – Diaphysis**

If only locking screws are used, contouring of the plate is generally not required. The use of Locking Drill Guides is recommended to ensure correct screw trajectory. The Locking Drill Guides can also be used as handles to help position the plate. Drill through the guide hole to the desired depth using an appropriate sized drill bit. Measure the hole depth via a depth gauge. Remove the Locking Drill Guide and insert the appropriate length Locking Screw using a screwdriver. Do not use power tools to insert the locking screws.

If non-locking screws (cortex/cortical or cancellous) are used in the plate, the following precautions are necessary:

Since conventional screws pull bone to the plate, contouring of the plate may be required to enhance bone-plate contact. If non-locking screws are used in combination with locking screws, non-locking screws must be adequately inserted and fully tightened prior to locking screw(s) insertion. Cortical bone screws must be 'self-tapping'. Cancellous bone screw insertion will require pre-tapping of the hole.

Note: Contouring of the plate will alter the angle of the locking screws. It is recommended to contour the plate between the holes at the location of the crumple zones and insert locking plugs prior to contouring to avoid distortion of internal threads. Use the Evobend® for convenient plate contouring.

4 screws in distal and 4 screws in proximal fragments. Single 2.7mm Evolox® Osteosynthesis Plate in patients up to 10 kg (medial aspect). Single 3.5mm Evolox® Osteosynthesis Plate in patients up to 35 kg (medial aspect). Double 3.5mm Evolox® Osteosynthesis Plate in patients over 35 kg (medial aspect). Fill any empty holes with a hole plug. If only locking screws are used in the plate absolute anatomical contouring is not necessary.

### **Relative Contraindications**

The veterinarian's education, training and professional judgement must be relied upon to choose the most appropriate surgical implant and treatment. The following contraindications should be taken into account by the veterinarian:

- Any active or suspected latent infection or marked local inflammation in or about the surgical site.
- Compromised vascularity that would inhibit sufficient blood supply to the fracture site.
- Bone stock compromised by pathology prior to application that cannot provide adequate support and/or fixation of the implants.
- Implant sensitivity, documented or suspected.
- Obesity. An overweight animal can produce loads on the implant that can lead to failure of the surgical procedure or the implant itself.
- Animals having insufficient soft tissue coverage over the operative site.
- Implant application that would interfere with normal anatomical structures and range of motion.
- Any neuromuscular pathology that would create an unacceptable risk of fixation failure or postoperative complications.
- Other medical or surgical conditions which would preclude the potential benefit of surgery.

## **Ulna - Radius**

If only locking screws are used, contouring of the plate is generally not required. The use of Locking Drill Guides is recommended to ensure correct screw trajectory. The Locking Drill Guides can also be used as handles to help position the plate. Drill through the guide hole to the desired depth using an appropriate sized drill bit. Measure the hole depth via a depth gauge. Remove the Locking Drill Guide and insert the appropriate length Locking Screw using a screwdriver. Do not use power tools to insert the locking screws.

If non-locking screws (cortex/cortical or cancellous) are used in the plate, the following precautions are necessary:

Since conventional screws pull bone to the plate, contouring of the plate may be required to enhance bone-plate contact. If non-locking screws are used in combination with locking screws, non-locking screws must be adequately inserted and fully tightened prior to locking screw(s) insertion. Cortical bone screws must be 'self-tapping'. Cancellous bone screw insertion will require pre-tapping of the hole.

Note: Contouring of the plate will alter the angle of the locking screws. It is recommended to contour the plate between the holes at the location of the crumple zones and insert locking plugs prior to contouring to avoid distortion of internal threads. Use the Evobend® for convenient plate contouring.

Evolox® Osteosynthesis Plate on radius (4 screws in proximal and 4 screws in distal fragment). Evolox® Osteosynthesis Plate on medial or dorsal aspect distally. Evolox® Osteosynthesis Plate on cranial aspect proximally. Avoid overlong screws transfixing radius and ulna. 2.7 mm Evolox® Osteosynthesis Plate in patients up to 10 kg. 3.5 mm Evolox® Osteosynthesis Plate in patients over 10 kg. Fill any empty holes with a hole plug. If only locking screws are used in the plate absolute anatomical contouring is not necessary.

## **Relative Contraindications**

The veterinarian's education, training and professional judgement must be relied upon to choose the most appropriate surgical implant and treatment. The following contraindications should be taken into account by the veterinarian:

- Any active or suspected latent infection or marked local inflammation in or about the surgical site.
- Compromised vascularity that would inhibit sufficient blood supply to the fracture site.
- Bone stock compromised by pathology prior to application that cannot provide adequate support and/or fixation of the implants.
- Implant sensitivity, documented or suspected.
- Obesity. An overweight animal can produce loads on the implant that can lead to failure of the surgical procedure or the implant itself.
- Animals having insufficient soft tissue coverage over the operative site.
- Implant application that would interfere with normal anatomical structures and range of motion.
- Any neuromuscular pathology that would create an unacceptable risk of fixation failure or postoperative complications.
- Other medical or surgical conditions which would preclude the potential benefit of surgery.