

# TREATMENT OF A RADIAL SALTER-HARRIS TYPE IV FRACTURE WITH A MODIFIED ROBERT-JONES BANDAGE IN A YOUNG DONKEY

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## Introduction

Fractures of the radius represent 8% to 14% of all fractures in horses; of the fracture configurations that were reported in a large retrospective study, physeal fractures correspond to 7 of 47 and young horses are more successfully treated than adults.

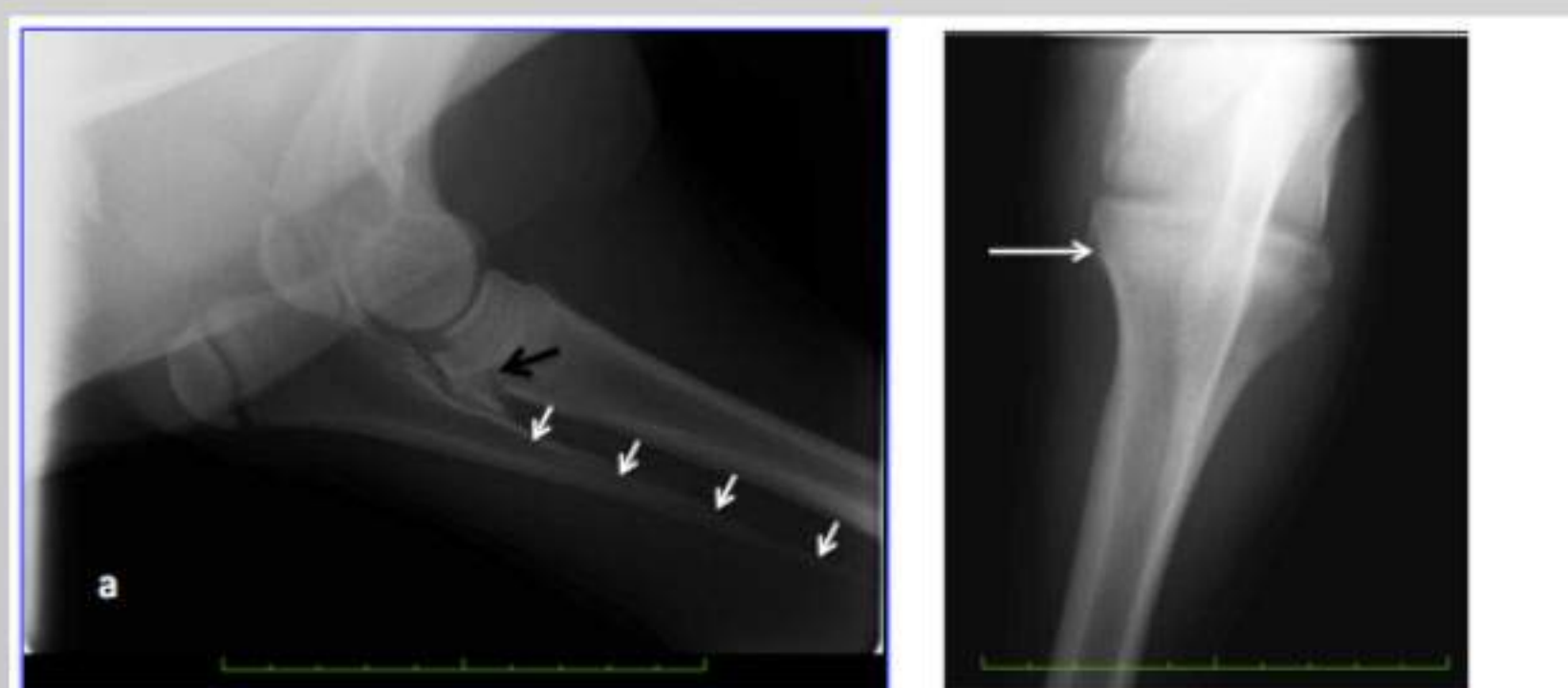


Figure 1: Day 0 (a) Mediolateral view of a left elbow with a fracture extend from the joint surface through the epiphysis, across the entire thickness of the physeal plate, and through a portion of the metaphysis of the radius (black arrow), and the displacement between diaphysis of the radius and ulna (white arrows). (b) craniocaudal view. Note the compression in the physeal plate of the radius (white arrow).



Figure 3 Day 10. (a) Mediolateral view of the left limb. Note the extensive periosteal reaction in the dorsal and palmar aspect of the radius from the proximal epiphysis (white arrows). (b) Craniocaudal view. Note the periosteal reaction around the growth plate and the displacement to the lateral.

## Discussion

Salter-Harris type 1 and 2 fractures of the proximal physis are reported more frequently than Salter-Harris type 3 fractures, and there is no reference to a type 4 fracture.

Most physeal fractures have an excellent prognosis. Repair generally involves a single-plate fixation of the ulna with the screws at the level of the proximal physis; a second plate can be placed laterally with the screw proximal to the physis. Type 3 fractures that are nondisplaced are rested, whereas displaced type 3 fractures are repaired with screws placed in lag fashion in combination with a tension band application.

## Description of the case

A five-month-old, 45 kg donkey was referred to equine hospital of the DMCZE of the FMVZ, UNAM with a history of an acute, non-weight-bearing left forelimb lameness of 5 day's duration, following a fall. After examination was diagnosed with a closed complete multifragmentary articular fracture and extend from the joint surface through the epiphysis, across the entire thickness of the physeal plate, and through a portion of the metaphysis of the left radius Fig 1, was treated with a modified Robert-Jones bandage and cross-tied bandage Fig 2.



Figure 2. Robert Jones bandage with extended lateral splint prevents abduction of the limb and additional cross-tied bandage prevents the fall of bandage in the proximal part, and reduce the displacement between diaphysis of the radius and ulna.

Post treatment radiographs showed acceptable stabilization and a callus was present 2 weeks after treatment Fig 3. The donkey was sound at the walk 2 months after treatment Fig 4.



Figure 4. Day 60 (a) Mediolateral view and (b) Craniocaudal view. Note the radius alignment obtained, the stabilization of fracture and bone remodeling.

## Conclusions

The fractured radius was treated successfully with modified Robert-Jones bandage and cross-tied bandage, the radius alignment obtained was successful, without a visible limb length discrepancy and no severe complication was present during treatment. Figure 5



Figure 5. Day 280. The donkey was sound at the walk without a visible limb length discrepancy.