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SUCCESSFUL REPAIR OF METACARPAL FRACTURE IN A BUFFALO USING A NOVEL GADGET

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In buffalo, repair of fractured bones is not commonly reported due to their heavy body weight (Johnson *et al.* 1974; Turner, 1984). The healing of fractured bones may be accomplished if reduction of fractured ends is made convenient followed by proper immobilization. Once it was thought impossible to repair in heavy animals like bovines (cattle and buffaloes) but now with the advent of new techniques it has been made possible. In the present article, a successful repair of metacarpal fracture in 40 days is presented.

Case History

A female buffalo of 7 years was reported by the owner to have fracture of the forelimb. Physically animal was healthy but was unable to bear weight on the effected limb. It felt great difficulty while sitting or standing and used to lie on the ground for most of the time. Feeding was normal, alongwith normal frequencies of defecation and urination. The limb was found inflammed from fetlock to knee joint and animal showed resentment on touching or on palpating that limb. The lower part the limb seemed hanging and from slight motion it could move in any direction that confirmed the tentative diagnosis of complete metacarpal fracture. For further confirmation and exploring the nature of fracture, the owner was advised to get a radiograph of the affected limb from anterio-posterior view. The radiograph showed a wedge-shaped fracture of both metacarpal bones (Plate 1a).

Treatment

After the restraining of animal, a thin cotton roll layer was applied from knee to fetlock joint before plaster of Paris (P.O.P.), while the limb was kept pulled by the men till the palpation at the fractured point showed correction of the fractured ends of the bone. After half an hour, the P.O.P dried and became firm. A special shoe was fabricated with iron bars and ring on both ends to counter the weight of the animal and to facilitate her in getting up and sitting down (Plate 2). The shoe was laminated with leather to avoid any damage from iron bars and rings. The length of bar and diameter of rings was made so that they could fit into the ridge of knee joint. The lower ring was well below the tip of the hoof toe so that the hoof remained hanging above the ring. In this way animal was able to bear weight on the ring not on the hoof that facilitated the repair of fracture. This gadget was kept applied on the leg of animal for 40 days.

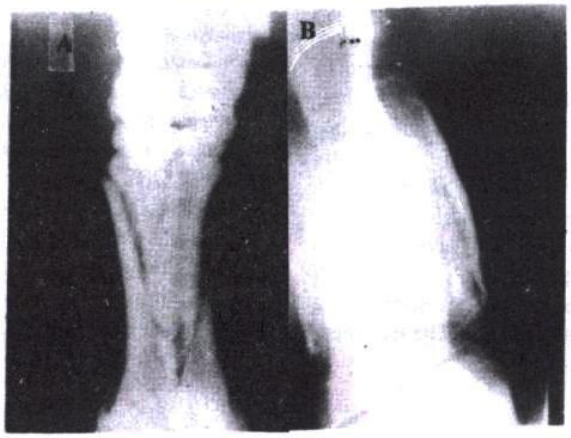

Plate 1: Radiograph of the fractured metacarpal bone: a). before treatment; b). after 40 days after its successful reduction and repair.

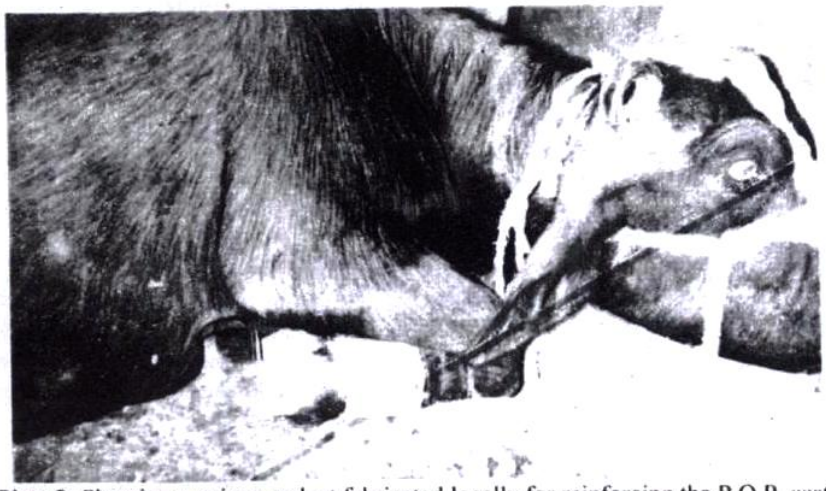

Plate 2: Showing a unique gadget fabricated locally for reinforcing the P.O.P. cast.

During this period no other treatment was provided to the animal. After the completion of six weeks, radiograph was taken again that showed that the repair has taken place and calcification is in progress (Plate- 1b). The P.O.P. bandage was removed along with shoe and the animal was allowed to put weight on this leg. Affording her weight on repaired leg made her confident to walk without any shy.

DISCUSSION

Fractures of the third (large) metacarpal (Cannon) and metatarsal bones are common in large animals of all ages. These bones seem quite vulnerable to fractures because of their exposed location. Such fractures are caused by various types of trauma, kicks from other animals, automobile accidents and haulter breaking injuries. The bones are frequently broken in young animals when cleamsy mothers step on their offsprings. Owing to the limited amount of soft tissues covering these bones, these fractures are frequently open (compound), resulting from penetration of an external object or of the bone from within. Similarly closed (simple) fractures can be easily converted to open (compound) fractures if the animal struggles or if immobilization is inadequate during transport to a hospital (O'Connor, 1980; Turner, 1984). The treatment of cannon bone fractures in large animals is dictated by economics, the configuration the fractures and whether it is open or closed. External coaptation is sometimes necessary to augment internal fixation especially in adult horses and cattle (Johnson *et al.*, 1974; Turner, 1984). This fracture occurred while being served by a buffalo bull. No doubt attending a case for a month is quite difficult but the prognosis could be made favourable by availing the latest technologies like radiography and ultrasonography in the veterinary practice and by modifying the techniques to meet the field constraints.

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