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FRACTURE MANAGEMENT IN THE RACING CAMEL

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ABSTRACT

Fractures in racing camels present unique challenges compared to other camelids. The skeletal anatomy of the camel has some distinctive characteristics. Traumatic fractures of most parts of the camel's skeleton have been reported. However, few peer-reviewed articles are available on the fixation of these fractures. The weight, high speed, training methods, training patterns, and racing over set distances at maximal cardiorespiratory exertion on sand have revealed distinct long bone fractures in racing camels. Dorsal metacarpal disease due to repeated stress and microfractures is commonly encountered in young racing camels. Carpal joint osteochondral fragmentation ('chip fractures'), causing lameness in racing camels, similar to those in racehorses, has been identified and treated by arthroscopy. The author's experience in managing and treating fractures in camels at the Dubai Camel Hospital is described.

Key words: Arthroscopy, camels, fractures, management

Camel racing is a centuries-old racing event which has been practiced as a traditional Middle Eastern sport, particularly in the Arabian Peninsula countries of the United Arab Emirates (UAE), Saudi Arabia and Qatar since Medieval times. Camel races hold an important position in Middle Eastern, particularly the Bedouin, culture and society, initially for social events and celebration and now, in the modern multi-million-dollar era, of intense racing competition akin to world flat horse racing. Fractures in racing camels (Arabian camel/dromedary/*Camelus dromedarius*) present unique challenges compared to

Fig 1. Flexed lateral radiograph of a carpus with a dorsal distal 1/3 comminuted accessory carpal bone fracture in a 2-year-old male racing camel (Courtesy: Dr Morgane Schambourg).

Fig 2. Arthroscopic view of one of the comminuted accessory carpal bone fracture fragments through a palmarolateral radiocarpal joint portal approach from the case in Fig 2 (Courtesy: Dr Morgane Schambourg).

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other camelids let alone compared to other domestic species. The skeletal anatomy of the camel has some distinctive characteristics. New World camelids (llamas, alpacas, guanacos, vicunas) in general are considered excellent patients for the treatment of orthopaedic injuries because of their relatively low body weight, tolerance of external coaptation devices, ability to ambulate on three legs post-operatively and can tolerate prolonged periods of recumbency for recuperation after surgery. The racing camel also shares some of these positive attributes for treating orthopaedic injuries.

Fig 3. Post-operative mediolateral radiograph of a complete oblique diaphysial humerus fracture fixation using titanium 1.7mm cerclage cables with titanium crimps, a stainless steel 12-hole 4.5/5.0mm locking LCP broad plate and 5.0mm locking screws in a 3-year-old female racing camel.

Traumatic fractures of most parts of the camel's skeleton have been reported. However, few peer reviewed articles on fixation of these fractures are available in the literature except for the mandible. The average weight of a racing camel is far greater than New World camelids with females weighing around 300-540kgs and males 400-690kgs. Intensive breeding programmes including *in-vitro* fertilisation, embryo transfer, cloning and a targeted bloodstock industry for speed have been supported and designed by the Sheikhs over the last 30-40 years. Thoroughbred racing industry rules and regulations (including drug detection), race distances, training methods and nutrition have been adopted and modified for the Arab racing camel. The average speed of the modern racing camel has improved to a point where cantering an average 27-32km/h the first 8km of a 10km race (the most common race distance), increasing to 40-43km/h at the gallop for the next 1 km, then in the final 1 km at the gallop up to 50-55km/h is the norm. The weight, high speed, training methods, training patterns and racing over set distances at maximal cardiorespiratory exertion on sand has revealed long bone fractures similar to those documented in racehorses. Indeed, the concept of stress fractures leading to potential catastrophic fractures of the long bones, in particular the humerus and tibia is raised. Dorsal metacarpal disease (DMD/'sore shins'/'bucked shins') due to repeated stress and microfractures are commonly encountered in young racing camels as they are in young racehorses. Additionally, carpal joint osteochondral fragmentation ('chip fractures') similar to racehorses amenable to arthroscopic management have been identified and treated as a cause of lameness in racing camels.

During 2016-2018, I was in the idiosyncratic position tasked with recruiting expat and local veterinarians and nurses, fully equip a referral hospital, train staff in aspects of modern large animal hospital practice, initiate research and development of camel medicine and make operational a state-of-the-art Dubai Camel Hospital (DCH), a sister hospital to the well-established Dubai Equine Hospital (DEH) at the Al Marmoom racetrack under the patronage of His Royal Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President of UAE and current Ruler of Dubai.

The hospital was opened by the Sheikh on the 14th December, 2017.

This presentation illustrated some of the challenges we faced as a collaborative team from all corners of the world in the management of various types of fractures encountered, utilising concepts and techniques from large/small animal surgery with the full repertoire of internal and external fixation techniques to choose from and adapted for racing camels.

References can be requested from the author

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