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Editorial

Computed Tomographic Arthrography in Camel: Promises and Challenges

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Editorial

Camel (*Camelus dromedarius*) has a unique locomotor apparatus enables it to be an excellent racing animal [1,2]. Camel racing has been evolved from a traditional cultural sport into a worldwide sport [3], Camel Cup which held at Australia (Alice Springs), Al-Jenadriyah in Saudia Arabia and Doubi-camel racing in United Arab Emirates is good examples. This affects positively the economic growth of the host countries, and in turn it pushes the field of camel orthopedics to grow.

Camels used for sports and competition must be of high performance and free of musculoskeletal disorders. Computed Tomographic Arthrography (CTA) has proved to be useful and highly sensitive for the evaluation of the clinically important osseous and soft tissues structures in different animal species [4-7]. The only difference between the plain CT and the CTA is the intra-articular injection of contrast medium prior to CT scans [8,9]. The contrast medium which preferred to be of the non-ionic iodinated group enhances the character of CT images. Post contrast CT images provide better delineation of the intra-articular ligaments, capsular recesses, pre- articular soft tissues, articular margins and articular defects [5,7,10,11]. In terms of clinical radiology, better visualization of the soft as well as the bony structures is the key for accurate diagnosis, as it facilitates interpretation of different details of CT images objectively, this especially important for the non-academic clinicians. Magnetic Resonance Imaging (MRI) also could provide better visualization of the soft and hard tissues, but CT imaging has a lower cost [12,13]. This make CT is the best diagnostic modality for the diagnosis of the orthopedic problems [14].

Currently CT as well as CTA is routinely used in several veterinary institutions and in some large private clinics. Although computed topographic arthography has gained wide acceptance in equine lameness diagnosis [15-17], it still very limited in the evaluation of camel orthopedic problems. This is because it depends on availability, the requirement for the animal to be anaesthetized for scanning and the shortage of literature concerned the normal as well as the clinical CT data of different camel joints [7,18]. Recently, two cadaveric studies on the CTA techniques of camel carpus have been published. These studies considered initial step in the field of camel CT arthrography, and differ from other studies in that; it used for the first time iodinated-contrast medium for intra-articular injection and provide modern and available acquisition data in-order to facilitate repeating the procedure in living camels [7,18].

From both clinical and academic points of view, computed tomographic arthrography in camel is highly promising. It can produce a real enhancement in the evaluation of performance of athletic animals as well as the diagnosis of musculoskeletal problems in camels. In the field of camel anatomy, it could reveal the different anatomical details of joints, as it has the ability of providing panoramic views of joint pouches, their communications and relations using 3d reformatted CT images [7,13,15,18].

However, several challenges should be taken in consideration, including, the few literature concerned CTA in camel, most of the available literatures are cadaveric studies, the availability of suitable or modified CT apparatus for the camel use, anatomical peculiarities of camel limbs, absorption, distribution, adverse effects (systemic or local sensitivity), sites of injections as well as approximate volume of the intra-articular contrast medium, and accuracy of procedure.

In my opinion, both the aforementioned promises and challenges should motivate the researchers to study different techniques of CTA in camel; this will fill a gap in the field of veterinary diagnostic imaging.

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