

Editorial

Sinonasal Myiasis in Camel: A Radiologic Approach

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Diagnosis is half of treatment. Thanks for the different imaging modalities early diagnosis of several hazards diseases could be obtained. Sinonasal myiasis in camel (*Camelus dromedarius*) is a serious condition of high incidence about 70-100% and high fatal rate [1-3]. In fact, it is a worldwide problem which severely affects the camel industry [3]. Diagnosis depends mainly on symptoms that include dramatic loss of weight and nervous manifestations, which are consequences of the migration of camel nasal bot fly *cephalopina titillator* throughout the sinonasal tract [4,5]. These symptoms appear only in the late stage when the large sized 3rd instars developed (33-35mm), i.e. after 11 months of infestation. In this case, the infested camels poorly respond to the treatment and either died or urgently slaughtered [5,6].

Computed tomography is used successfully for early detection of myiasis in man [7]. In veterinary practice, it is hard to use CT scans for large animals because of expense, availability and the animal should be anaesthetized before scanning [8]. However, veterinarians, particularly the radiologist should take initial steps to provide radiographic picture of the nasal myiasis in camel.

Recently, there is a study that describing computed tomographic features of the sinonasal myiasis in dromedary cadavers [9]. The authors of this study choose CT scans because of its advantages over the traditional X-ray, include the good evaluation of both soft and hard tissue structures, no overlapping, panoramic view of three dimensional images as well as ability to reconstruct images in different planes. Although magnetic resonance is more sensitive and specific in detection of nasal lesions, it is more expensive than CT [10].

The radiographic features of camel sinonasal myiasis present in CT images as rounded hypolucent areas which seem to have specific pattern of distribution. This pattern arises as consequence of larval presence, debris and penetrations; it also illustrates the route of their migration [9]. Using this pattern would facilitate the recognition of larval infestation in CT images as well as the differential diagnosis from other conditions causing chronic rhinitis [9].

Peculiarities of camel nasal structure should be taken in consideration while studying radiographic features of nasal myiasis in this species [9]. Few study that giving attention to the peculiar anatomy of nasal-sinus system in dromedary [9,11,12]. Researchers should keep in mind that camel anatomy is greatly differs from those

of the common ruminants, as they own a slightly wide muscular vestibule, the conchae restricted to the caudal two-thirds of the nasal cavity, the caudal third of the ventral nasal concha was twisted and the paranasal sinuses are very small [9,11,12]. These features would be helpful for accurate interpretation with different diagnostic imaging modalities.

Computed tomography is a reliable, non-invasive technique, and is superior to routine X-ray for identification of nasal cavity diseases, including chronic rhinitis, myiasis, tumors, etc, it also more sensitive, able to define the extent and evaluate the severity of disease processes [13,14]. However, there are clinical needs to provide more radiographic details about this condition in camel, especially in the early stages, and the role of traditional X-ray should not be ignored. Although X-ray provides overlapping images, it is the most available modality in the major clinics and hospitals concerned camel health.

Other purpose of radiologic approach is the usage of reformatted and 3dimensional CT images in planning of surgical treatment. As the analysis of different reconstructed CT images provide valuable data about the extension and distribution of lesions.

Early diagnosis would save animal life and decrease economic losses. In this respect, veterinary radiologists have lot to do, as they should establish several studies to reveal the different sides of this type of myiasis in camel, provide the detailed radiographic data required for accurate as well as differential diagnosis in living camels, Compare different imaging techniques including, CT scans, X-ray and magnetic resonance and select the better on basis of reliability, availability, sensitivity as well as ease of performance.

In my opinion, if usage of CT scans be in practice for early diagnosis of nasal myiasis in dromedary, this would highly improve both the camel health and industry.

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