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## Clinical evaluation and surgical management of dermoids cysts in camels

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### Abstract

The Dermoid cysts were clinically evaluated in 10- camels at the same anatomical location; cranio-lateral aspect of the neck adjacent to the juglar furrow unilaterally and bilaterally. On clinical examination, these cysts were soft fluctuating, hanging as pendulous growth, round mass and in few cases it was attached with diffuse attachment to the skin. Paracentesis of the growth revealed the straw coloured fluid. All the cysts were surgically excised carefully, avoiding the damage in juglar furrow under the xylazine sedation and local infiltration of 2% lignocaine hydrochloride. Gross examination of the cysts from inside revealed the impacted hair tufts in small pockets, glandular secretion, debris material and everted layer of the hard tissue. All the animals were fully recovered and no complication was seen. Early surgical excision is recommended to avoid the anxiety in animals because of the bulky nature of the cysts.

**Keywords:** camels, dermoid cyst, juglar furrow, surgical excision

### Introduction

Dermoid cysts are congenital cysts and occur due to failure of the embryonic cavity to close or defective epidermal closure. Dermoid cysts are reported in many species of animals at different anatomical location viz tail, neck, skull, nasal cavity (Stelmann *et al.*, 2012; Akhtardanesh, *et al.*, 2012; Jhala *et al.*, 2010; Alam *et al.*, 2006) [1,3, 1, 9, 2] but ocular dermoids are common in ruminants and they may be present unilaterally or bilaterally (Bharti *et al.* 2013; Bharti *et al.* 2014) [3, 4]. Congenital cysts have been recorded in the camel at neck region and they are mostly dermoid in nature, often located above the juglar furrow (wakankar and moulvi, 2008) [14]. The dermoid cyst in wild ruminants; caribou (reindeer) also have been recorded at the neck and throat region (Wobeser, *et al.*, 2009) [15]. Purohit, *et al.* (1989) [11] and Oryan *et al.* (2012) [10] reported the presence of the dermoid cysts at anteriolateral aspect of neck in camels and described their gross and histopathological symptoms but detailed clinical description of these cysts is still needed to be addressed.

This article describes the clinical presentation, surgical excision and gross anatomical description of Dermoids in camels.

### Materials and Methods

10 cases were presented to college and Veterinary Science- TVCC, RAJUVAS Bikaner during the period of 5 years from 2015 to 2019 with the history of chronically growing mass at the proximal part of the neck which was present at birth but very small in size and gradually increased in size with the age of the animals. These masses were present at the same anatomical site. Unilaterally mass was present in 8 cases (Fig-1) and in 2 cases it was present bilaterally. On clinical examination, in most of the animals this was hanging as pendulous growth, round mass and in few cases it was attached with diffuse attachment to the skin. All the swellings were soft fluctuating. Paracentesis of the growth revealed the straw coloured fluid but fluid contents were in less quantity and after some fluid it could not be aspirated. Based on the nature of the growth since birth which was gradually developed and contents on aspiration all the cases were diagnosed with dermoid/cutaneous cysts.

The anatomical locations of the Dermoids were ventral to the angle of the mandible and cranio-lateral aspect of the proximal part of the neck.

### Treatment and Discussion

In all the cases surgical excision was decided, animals were restrained in sternal recumbency after sedation with xylazine hydrochloride @ 0.3 mg/kg b.wt intravenously. Lignocaine hydrochloride 2% was infiltrated at the base of the attachment of cysts. The site was prepared aseptically with shaving and scrubbing with 5% chlorhexidine. An elliptical incision was given at the base of the growth, and dissected gently (Fig-2) because of their presence in the vicinity of the juglar vein. The wall of the cysts was thick, an uneven surface was present from the inside, it was fully impacted with hair tufts in small pockets, glandular secretion, debris material and everted layer of the hard tissue from inside was present. (Fig-4,5& 6). All the cysts were weighing between 500g to 3 kgs and diameter between 6 cm to 17 cm (Fig-3) and straw coloured fluid was present in small pockets. Stratified squamous epithelium and hair follicles were described by histopathologically in the inner layer of such type of cysts in camels (Oryan, *et al.*, 2012)<sup>[10]</sup>.

Dermoid cysts are asymptomatic, non inflammatory in nature and very slow to growth, are present at birth, they do not cause any difficulty to animals but when they acquired the weight or become distended due to infection or abscess formation, there could be anxiety to animal due to the bulky nature and affects the working efficiency of the animals. They are formed due to defective epidermal closure along embryonic fissures, which isolates an island of ectoderm in the dermis or subcutis. The majority of dermoid cysts occur on the dorsal midline because of incomplete separation of skin and neural tube during embryonic development, but they also may occur in other locations. The cyst usually contains hair, keratin, and sebum, and these materials may produce a progressive enlargement of the structure so that it becomes clinically apparent (Gross *et al.*, 1992)<sup>[8]</sup>.

In camels, dermoid occurs at an identical location that is the cranio-lateral aspect of the neck attached to the juglar furrow, dermoid cysts in identical locations have also been reported by the Purohit *et al.*, (1989)<sup>[11]</sup> and Oryan *et al.* (2012)<sup>[10]</sup>. In ruminants unlike the ocular dermoid cysts which are related to the epiphora, ulceration and resulted into blindness (Bharti *et al* 2014; Rashmi *et al.*, 2018)<sup>[14, 12]</sup>, dermoid cysts at other anatomical locations are asymptomatic unless they acquire a large size which causes the pressure on the adjacent tissues (Alam, *et al.*, 2006; Stelmann *et al.*, 2012)<sup>[2, 13]</sup>.

In the present study in the gross appearance all the cystic walls were oval, firm, well circumscribed, and fluctuating and on transverse section, straw coloured fluid without any smell, cavity packed with hair tufts, debris material, an inverted layer of hard tissue, surrounded by fascia, was present in all the cases (Goldschmidt *et al.*, 1998)<sup>[7]</sup>.

Histologically, these camel cysts are lined by stratified squamous epithelium and its lumen filled with squamous debris and the desquamated keratin. The wall consists of many layers of cells and varied in thickness from one part to another area. Adnexal structures include the hair follicles, sebaceous, and apocrine glands in association with the cyst wall. The dermis consists of densely packed irregular collagenous connective tissue with numerous fibroblasts (Oryan, *et al.*, 2012)<sup>[10]</sup>.

Cutaneous or subcutaneous cysts of all types can occur throughout the body. The cyst lumen contained squamous debris and was filled with keratinized material. Numerous hair shafts were extended from the wall of the cyst. The sebaceous and apocrine gland adnexal structures were also observed which confirmed the diagnosis of dermoid cyst (Akhtardanesh, *et al.*, 2012)<sup>[1]</sup>. All the cases recovered successfully and no complication was seen. Early surgical excision is recommended to avoid the anxiety in animals because of the bulky nature of the cysts.



Fig 1, 2 & 3: Dermoid cyst at the cranio-lateral side of neck in the vicinity of juglar furrow and surgically excised cyst.



Fig 4, 5 & 6: Most of the cysts had the thin fluid, wall of the cysts was thick, uneven surface was present from inside, it was fully impacted with hair tufts in small pockets of fascia, glandular secretion, debris material and everted layer of the hard tissue from inside was observed.

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