Case Report BILATERAL GIANT SUBCUTANEOUS LIPOMAS IN ONE-HUMPED CAMEL (Camelus dromedarius)

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ABSTRACT

A 10-year-old female Omani one-humped camel with two enormous subcutaneous masses above the base of the tail was admitted to the Veterinary Teaching Hospital (VTH), King Faisal University Saudi Arabia. The two giant masses grew slowly over two years. The body condition score (BCS) of the female camel was between 3.5 and 4 and all clinical parameters were within normal ranges. The circumference of the right and left masses was 79 and 76 cm, respectively. Clinically, the masses appeared doughy, painless and pedunculated with a short wide stem above and around the base of the tail. Both masses had nearly identical sizes, shapes and locations. They looked like the ovine fatty tail. The masses were excised surgically at two separate occasions, one month apart. The surgeries were carried out under the effect of intravenous xylazine HCl 2% solution and ketamine HCl 10% solution as well as ring blocks analgesia. Cut sections of the excised masses showed many yellowish and whitish fat lobules. The weight of the left and right tumours was 6.5 and 6.6 Kg, respectively. Histopathology revealed lobulated groups of the neoplastic adipocytes separated by bands of fibrous tissue elements. The overall appearance of two sections from each mass was consistent with a diagnosis of lipoma. The animal was followed up for 6 months by telephone conversation with the owner and no recurrence of the tumours or complications were recorded.

Key words: Adipocytes, Dromedary camel, Lipoma, Surgery, Tail

Skin and subcutaneous tissue neoplasms are the most often identified neoplastic illnesses in most domestic animals like cattle and buffaloes (Fouad et al, 2001), equine (Abu-Seida et al, 2003), sheep (Fouad et al, 2001; Zabady et al, 2004; Abu-Seida, 2015), goats (Abu-Seida and Ahmed, 2007) and dogs (Abu-Seida et al, 2008; Abu-Seida and Saleh 2016). There are almost 30 distinct types of cutaneous tumours diagnosed. These are divided into four types: epithelial, mesenchymal, lymphohistiocytic and melanocytic neoplasms. The top ten most frequent neoplasms include mast cell tumours, squamous cell carcinomas, perianal gland adenomas, lymphomas, benign melanomas, haemangiosarcomas, sebaceous gland adenomas, fibrosarcomas, lipomas and malignant melanomas (Mukaratirwa et al, 2005).

The Veterinary Teaching Hospital of Qassim University, Saudi Arabia evaluated the incidence, kinds and locations of tumours in 9576 dromedary camels. Histological examination verified tumours in 59 cases with an incidence of 0.006%. Squamous cell carcinoma, fibroma and adenocarcinoma were the common types of tumours occurring in camels (Alsobayil *et al*, 2018).

In dromedary camels, skin and subcutaneous neoplasms are uncommon and constitute approximately 1.3% of the examined camels (Elmaghraby *et al*, 2023). In a recent survey, skin neoplasms include myxosarcomas (0.7%), lipomas (0.2%), papilloma (0.1%), fibropapilloma (0.1%), adenoma (0.1%) and squamous cell carcinoma (0.1%) in 988 examined camels (Elmaghraby *et al*, 2023).

A lipoma is a slow-growing benign fatty tumour that is often seen in the subcutaneous tissues. It feels doughy, fluctuating and is typically painless (Kaswan *et al*, 2013).

Lipoma rarely occurs in camels (Al-Sobayil and El-Amir, 2013; Kaswan *et al*, 2013). It was diagnosed as a rounded to oval swelling with rough surface at

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the dorsal aspect of hock joint (Al-Sobayil and El-Amir, 2013) in female dromedary camel and as a small swelling in the left ischiorectal fossa in a 7-year-old male camel (Kaswan *et al*, 2013). However, bilateral gigantic subcutaneous lipomas around the base of the tail in a 10-year-old female one-humped camel is reported here.

Case description

A 10-year old female dromedary camel was referred to VTH-King Faisal University for two huge bilateral masses around the base of the tail. The clinical parameters of the animal were within normal range. The two masses were small and gradually increased in size over two years. Both masses had nearly identical sizes, shapes and locations. They appeared, if fused together, as the ovine fatty tail or a huge heart-shaped mass covering the upper third of tail. The female camel couldn't move her tail properly. The BCS of the female camel was between 3.5 and 4. The two huge masses were doughy, painless and encapsulated. The masses were not attached to the perineum region resembling the ovine fatty tail (Fig 1). Each mass had a wide peduncle above and around the base of tail. The circumference of right and left masses was 79 and 76 cm, respectively. The skin over the masses was apparently normal with slight alopecia.

Each mass was surgically excised separately (one month apart) starting with the left mass. Feed was withdrawn for 48 hours prior to surgery. The camel was given 0.2mg/kg body weight xylazine HCl 2% and 0.8mg/kg ketamine HCl 10% intravenously. Then, the animal was secured in sternal recumbency. Additionally, ring block analgesia at the stem of the tumour mass was conducted using 30 mL of 2% lidocaine HCl solution.

The skin over the tumour mass and surrounding area was routinely prepared for aseptic surgery. Circular incision was made at the base of tumour mass. Haemorrhage was controlled using thermocautery unit and ligation using vicryl suture material no. 0. Tumour mass was removed by blunt dissection. The subcutaneous tissue was opposed using vicryl no. 1 in a continuous pattern. The skin edges were closed using silk no. 2 and horizontal mattress pattern. Postoperatively, long acting oxytetracycline was injected intramuscularly at a dose of 10mg/kg every 72 hours for two times. Moreover, flunixin meglumine was given intramuscularly at a dose of 1.1mg/kg once daily for 7 days. Daily dressing of the wound with povidone iodine solution was performed until removing the stitches after 10 days of surgery.

After one month, the camel returned back to the hospital for excision of the right tumour mass. The skin wound of the excised left mass healed in a good manner (Fig 2a) but the weight of right tumour mass slightly deviated the tail to left side. The right mass was excised in the same procedures of the left one (Fig 2b).

The excised tumours were fatty in consistency and surrounded with a thick fibrous capsule. Cut sections of both tumours reveled white to yellowish multiple fat lobules (Figs 2c&d). The weight of the left and right tumours was 6.5 and 6.6 Kg, respectively. Small tissue samples from both masses were fixed in formalin 10% solution for routine histopathology. Microscopic examination of sections stained with hematoxylin and eosin revealed lobulated groups of neoplastic mature adipocytes separated by bands of fibrous tissue elements (Fig 3a). The neoplastic fat cells were variable in size and shape with some fibrous tissue in between (Figs. 3b&c). The animal was followed up for 6 months by telephone conversation with the owner. No recurrences of the tumours or complications were recorded.

Discussion

Skin tumours were categorised based on histological features as squamous papilloma (4%), fibropapilloma (4%), subcutaneous lipoma (2%), melanocytoma (2%), melanoma (2%), sebaceous gland adenoma (1%) and sebaceous ductal adenoma (1%) as mentioned before (Khordadmehr *et al*, 2016). The total incidence of skin neoplasms varies between countries. It was 15.24% in 105 examined camels in Iran (Khordadmehr *et al*, 2016). However, this incidence was 1.3 % in 988 examined camels in Egypt (Elmaghraby *et al*, 2023).

Camels are less likely to develop benign cutaneous tumours like papilloma, fibropapilloma, lipoma and adenoma (Elmaghraby *et al*, 2023). However, this case report describes, a case of bilateral gigantic subcutaneous lipomas around the base of the tail in a 10-year-old female dromedary camel.

The affected animal was female and females were more affected by skin neoplasm than males as mentioned by previous researchers (Al-Sobayil and El-Amir, 2013; Alsobayil *et al*, 2018). The affected animal was 10 years old but lipomas are usually seen in the middle and old aged animals (Al-Sobayil and El-Amir, 2013; Kaswan *et al*, 2013). However,



Fig 1. A 10-year-old female camel showing bilateral gigantic lipomas around the base of the tail. (a): Posterior view, (b): Right lateral view and (c): Left lateral view of lipomas.



Fig 3. Representative photomicrographs of the excised masses. (a): Photomicrograph showing lobulated groups of the neoplastic adipocytes separated by bands of fibrous tissue elements (H and E, X= 160). (b): Photomicrograph showing variable sized and shaped neoplastic adipocytes separated by fibrous tissue elements (H and E, X= 250). (c): Photomicrograph showing variable sized and shaped neoplastic adipocytes separated by fibrous tissue elements (H and E, X= 400).

Alsobayil *et al* (2018) found that the age of affected camels with various types of neoplasms ranged between 4 months to 18 years.

The BCS of the affected female camel was 3.5-4 BCS. Characteristics of BCS 3.5 included fully developed hump which was 15% higher than chest depth and from the shoulder to the rump but not rounded. However, characteristics of BCS 4 were the same as of BCS 3.5 but the hump was rounded



Fig 2. (a): The female camel one month after excision of the left lipoma showing healed skin wound (black arrow). (b) The female camel just after excision of the right lipoma and suture of the skin wound (black arrow). Cut sections in the left (c) and right (d) lipomas showing numerous yellowish white fat lobules.

outwards on both the sides (Singh *et al*, 2016). Therefore, the affected female camel was fatty that might be a predisposing factor for development of lipomas.

Lipomas are present in a variety of body areas. In camels, these were recorded in the ischiorectal fossa (Kaswan *et al*, 2013) and on the dorsal aspect of the hock joint of a Majaheem female-camel (Al-Sobayil and El-Amir, 2013). The present case records lipomas in an unusual location around the base of the tail. In the present case, the two gigantic lipomas appeared as camel's sitting hocks in shape and interfered with tail raising during mating because female camel was raising the tail during oestrus (Khanvilkar *et al*, 2009). Clinical examination of the masses revealed painless, soft and movable lumps. Similar findings were recorded in previous case reports of lipomas in camels (Al-Sobayil and El-Amir, 2013; Kaswan *et al*, 2013).

Surgical excision of the present lipomas was curative and no recurrence or complications were reported till 6 months post-operative. This is in accordance with the findings of previous studies (Al-Sobayil and El-Amir, 2013; Kaswan *et al*, 2013). We preferred to excise the lipomas at two times with one month apart to decrease the stress on the animal and to decrease the blood loss during each surgery.

Interestingly, the excised lipomas reached unusual circumference (76-79 cm) and weight (6.5-

6.6 kg). This could be among the largest-sizes skin neoplasms recorded in camels.

Histpathology is a confirmative diagnosis for tumours and accordingly in the present case it was diagnosed as lipoma. Lipomas have characteristic microscopic features. Lipoma is surrounded by a connective tissue capsule that delivered trabeculae into the tumour mass, separating it into lobules. The tumour is consisted of differentiated fat cells of various sizes and forms (Al-Sobayil and El-Amir, 2013). All of these findings were present in the reported case.

Conflicts of Interest

The authors declare no conflict of interest.

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