



Common surgical affections in camels in state of Kuwait

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ABSTRACT

Surgical affections of camels lead to production losses. The study was conducted from October 2018 to October 2019 in different farms belonging to Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait in order to investigate surgical affection in camel. In this study we recorded 212 cases of common of surgical affections in camels. The incidence of recorded affections included: mandibular fracture 10.3%, cut tooth 8.4%, wound 8%, foreign body 7.5%, tumour 7.5%, dulaa inflammation 7%, uterus prolapse 5.6%, chronic mastitis 5.6%, metatarsus fracture 5.6%, dystocia 5.1%, deviation of the premaxilla and the nasal septum (wry face) 4.7%, rectal prolapsed 4.2%, lateral retropharyngeal lymph node abscess 2.8%, narrow valve 2.8%, umbilical hernia 2.8%, radius fracture 2.3%, femur fracture 2.3%, metatarsus fracture 1.8%, fetlock fracture 1.8%, fetlock joint laxation 0.09%, rupture of the perineum 0.04%, intestines prolapsed 0.04%. In addition, the infection rate of females (66.6%) was higher than that of males (41%).

Introduction

Surgical affection of camel cause great economic losses due to its inability to work properly. Various surgical affections are found in camel. Camel surgery has two distinct divisions i.e., soft tissue surgery and orthopedic surgery. Majority of soft tissue surgery involved gastrointestinal tract and urogenital system. Surgical affections do occur at skin and adnexa. Herniorrhaphies or hernioplasties and urethrotomy or urethrostomy, rumenotomy, torn nostrils, gangrenous tail marks are reported. Orthopedic surgery is usually restricted to repair the mandibular and long bone fractures specially cannon bones. The urogenital system surgeries involve those for cystorrhesis, obstructive urolithiasis, phimosis, paraphimosis and prepuce paralysis.

The eyes affection includes corneal ulcers (Slatter, 1981 and Severin, 1984). Uterine prolapse usually occurs within a few hours after delivery of the fetus, in cattle, the condition is frequently associated with dystocia and hypocalcaemia (Youngquist, 1997).

Rectal prolapse is referred to the protrusion through the anus of the mucosa or the complete wall of the rectum. The prolapse may be classified as incomplete, in which only the rectal mucosa is everted, or complete, in which all rectal layers are protruded (Anderson & Miesner, 2008).

In camels, information about prevalence and forms of dystocia is little and contradictory (Aboul-Fadle et al., 1990). Cesarean section is performed in camels for uncorrectable fetal maldispositions or monstrosities (Purohit, 2012).

Abdominal hernia is an abnormal protrusion of a part of abdominal contents through a natural or pathological opening in the abdominal wall (BAXTER, G. 2004). There are several forms of hernias with a wide range of different clinical conditions in livestock; including camel (Ramadan, and Abdin-Bey, 2001).

Abscesses infection of farm animals is detrimental to the livestock due to the tremendous economic losses of animals, meat, skin, and wool production associated with this affection (Paton et al., 1988 and Alharbi & Mahmoud, 2012). Abscesses are common in dromedaries, particularly in the form of lymphangitis accompanied by suppurative lymphadenitis of cervical and sciatic lymph nodes (Fassi-Fehri, 1987). Camel abscess in the prepectoral lymphglands, at the base of the neck, is a common finding in almost every camel. Abscesses of the other camel superficial LNs like prescapular and precrural are also common (Abdurahman & Bornstein, 1991).

In females, fracture occurs due to car accident or when the animals stumble and fall on its head in an attempt to escape being mounted by a male camel. The clinical signs of mandibular fracture are usually very clear (Ramadan, 1994).

Although fractures are common affections in large animals (Jennings, 1984). The available literature lacks detailed data about prevalence and classification of fractures in camels. Detailed descriptions of mandibular fractures and their treatments in camels have been cited. Other bone fractures were cited briefly, especially in young camels (Gahlot, 2000; Ramadan 1994).

Similarly, there are few reports on the incidence of fractures in camels (Ramadan, 1992; Singh, et al., 1983). Long bone fractures in the new world camelids are also reported (Johnson, 1993; Shoemaker et al., 1996). Theoretically, any of the fixation techniques practiced in other domestic animals is applicable in appropriate situations in camelids (Kaneps et al, 1998; St. Jean, 1998). External fixation was used successfully for the treatment of comminuted fracture in a juvenile camel (Squire & Boehm, 1991).

The dulaa is commonly injured in adult male camels during breeding season. It has been reported that injuries of dulaa occur when male camels chase females for mating or fights with other males, or as a result of sharp teeth. The dulaa can be affected with lacerated wounds, hematoma and food impaction (Ramadan 1994).

This might lead to extravasations of the blood inside the cavity or at the submucosa of the dulaa. The inflammatory conditions with edematous swelling of the dulaa affect its withdrawal to the mouth and by the time, the condition becomes more complicated. (Gahlot TK, Chouhan DS, Choudhary, 1988).

Bruised in those paraded on roads, fracture of digits in those working in mines and punctured foot in those being used for draft purposes in urban areas. The various traumatic or mechanical injuries thus received results into variety of foot affections with associated lameness (Singh, 1995). Available literature shows scanty reports on foot disorders of camels and their diagnosis and treatment (Singh et al., 1980; Gahlot & Chouhan, 1992).

Lymphadenitis (known locally as taloa or mala) is common in the camel and may affect more than 10% of camels in a herd. It is particularly important in racing camels since the development of abscesses results in loss of half of the racing season. Many bacteria have been isolated from abscesses in the camel but the most frequently isolated organism is *Corynebacterium pseudotuberculosis* (Domenech et

al., 1977; Radwan et al., 1989; Refai, 1992). *Corynebacterium pseudotuberculosis* causes lymphadenitis in sheep and goats, characterized by the formation in the superficial lymph nodes and internal organs of capsulated abscesses containing concentric layers of yellow green granular pus (Ayers, 1977).

Congenital defects, structural or functional abnormalities presented at birth, are one of the most challenges facing the clinician in the field because of their nature of complexity. In addition to the clinical abnormalities associated with these conditions, the multifactorial nature of their etiology adds up to the summation of their complexity. Abnormal development is usually caused either by genotypic or environmental factors, in addition to failure to meet the temporalspatial requirements (overwhelmed fetal compensatory mechanisms) of development (Newman et al., 1999; Bai et al., 2004; Ghanem et al., 2004; Cassini et al., 2005).

Rectovaginal fistula and anus vaginalis are the anomaly in which an abnormal opening exists between the terminal rectum and the vagina. The anus may be partially developed or lacking and feces are evacuated through the vulva. Lack of the anus, rectum or small colon is an inherited lethal abnormality. It appears uncommon in the general population but with a relatively high incidence in certain cross-breeds (Oehme & Perier, 1974).

Perineal laceration (PL), pneumovagina, and urovagina cause serious economic losses in dairy cows (Hudson, 1972; Dreyfuss et al., 1990). Lacerations had been classified according to their extent as first, second and third degree lacerations (Aanes, 1964; Dreyfuss et al., 1990; Farag et al., 2000). PLs, which are commonly affecting primiparous females, are associated with obstetrical trauma and particularly during parturition (Dreyfuss et al., 1990; Kazemi et al., 2010). This injury is mainly caused by forced extraction or the expulsive forces generated during labor in the presence of fetomaternal disproportion or fetal malposition (Colbern et al., 1985; Hudson, 1986; Dreyfuss et al., 1990 and Arthur et al., 1996).

A wide range of techniques involving interdental wiring, transfixation, bone plating and intramedullary pinning are practice in camel surgery. However, the study is aimed to investigate the common surgical affection in camel in Kuwait city. The surgical intervention for correction of these affections is also reported here.

Materials and Method

The study was conducted from October 2018 to October 2019 in different farms belonging to Public

authority for agriculture affairs and fish resources - Kuwait City, Kuwait. In this study recording 212 cases table 1 of Common of Surgical Affections in Camels.

Table 1: Number and incidence of the common surgical affections in the examined camels

No.	Type of affection	Female (%)	Male (%)	Total
1	Foreign body	14 (87.5)	2 (12.5)	16 (7.5)
2	Uterus prolapse	12 (100)	-	12 (5.6)
3	Mandibular fracture	6 (27.2)	16 (72.7)	22 (10.3)
4	Dystocia	11 (100)	-	11 (5.1)
5	Wound	14 (82.3)	3 (17.6)	17 (8)
6	Narrow valve	6 (100)	-	6 (2.3)
7	Tumour	7 (43.7)	9 (56.2)	16 (7.5)
8	Umbilical hernia	6 (100)	-	6 (2.8)
9	Metacarpus fracture	8 (66.6)	4 (3.3)	12 (5.6)
10	Radius fracture	4 (80)	1 (20)	5 (2.3)
11	Metatarsus fracture	3 (75)	1 (25)	4 (1.8)
12	Femur fracture	4 (80)	1 (20)	5 (2.3)
13	Fetlock fracture	3 (7.5)	1 (25)	4 (1.8)
14	Joint fetlock laxation	-	2 (100)	2 (0.09)
15	Dulaa inflammation	-	15 (100)	15 (7)
16	Rectal prolapse	4 (44.4)	5 (55.5)	9 (4.2)
17	Deviation of the premaxilla and the nasal septum (wry face)	3 (30)	7 (70)	10 (4.7)
18	Rupture of the perineum	2 (100)	-	2 (0.04)
19	Chronic mastitis	12 (100)	-	12 (5.6)
20	Intestines prolapse	2 (100)	-	2 (0.04)
21	Cut tooth	-	18 (100)	18 (8.4)
22	Lateral retropharyngeal lymph node abscess	4 (66.6)	2 (33.3)	6 (2.8)
Total	-	125 (59)	87 (41)	212 (100)

RESULTS AND DISCUSSION

The study was conducted from October 2018 to October 2019 in different farms belonging to Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait. In this study recording 212 cases table 1 of Common of Surgical Affections in Camels. The incidence of recorded affections included: mandibular fracture 10.3%, cut tooth 8.4%, wound 8%, foreign body 7.5%, tumour 7.5%, dulaa inflammation 7%, uterus prolapse 5.6%, chronic mastitis 5.6%, metatarsus fracture 5.6%, dystocia 5.1%, deviation of the premaxilla and the nasal septum (wry face) 4.7%, rectal prolapse 4.2%, lateral retropharyngeal lymph node abscess 2.8%, narrow valve 2.8%, umbilical hernia 2.8%, radius fracture 2.3%, femur fracture 2.3%, metatarsus fracture 1.8%, fetlock fracture 1.8%, fetlock joint laxation 0.09%, rupture of the perineum 0.04%, intestines prolapse 0.04%. In addition, the infection

rate of females was higher than that of males. The female 66.6% was and male is 41%. The pictures of common surgical affection of camel are demonstrated in figure 1 to 24.

It was the highest infection ever recorded is mandibular fracture 10.3%. There are five similarly related injuries: cut tooth 8.4%, wound 8%, foreign body 7.5%, tumour 7.5%, dulaa inflammation 7%. Treatment was performed for all cases with complete recovery and without any post operative complication except cases of fractures in adult animals. In addition there are two cases approximately a month after the caesarean section, a hernia appeared at the site of the surgery. Abdominal hernias are common affections of the abdomen with a worldwide They represent one of the frequent reasons for surgical interference in camels (El-Shafaey, 2018).

There is a note for the operations of mandibular fractures after the installation of the plates 60% of cases must be removed the plates after the healing of the fracture and after 3-5 months due to the appearance of continuous abscess. It was also noted that 90% of the cases of mandibular fractures are on both the right and left sides.

The number of cases recorded in Kuwait for maxillary fractures during the year was 22 cases by 10.3% and there was a similar study at King Faisal University in Saudi Arabia on 20 cases. The main objective of this study was to investigate the relationship between blood concentrations of some macro minerals in camels with jaw fractures compared to their levels in healthy camels. From the obtained results, it could be observed that the prevalence of jaw fractures was higher in male camels than females (Al-Mujalli, 2012).

The dulaa inflammation 15 cases were recorded within a year and were all male and this study

corresponds to another study at Qassim University in Saudi Arabia Twenty six male camels (*Camelus dromedarius*) were used in this study with mean age of 10 years (range from 6 to 12 years). The dulaa can be affected with lacerated wounds, hematoma and food impaction. portion of its dulaa entrapped in a tooth dulaa had ulceration, and/or penetrating wound with subsequent entrapment seems that these wounds and ulceration occurred as a result of sharp teeth (Sobayil and Ahmed, 2011).

Fracture in young camels were affected by breed and age. External fixation of fractures by means of plaster of Paris bandage alone or with PVC splints and IDW are successful methods of treatment in young camels. There was a significant effect of camel age on the cause of fracture. Furthermore, there was a significant effect of camel age on the fractured bone (Ahmed and Sobayil 2012).



Fig. 1: **A1)** Incision wound on the upper front metatarsus joint and the photo showed bleeding from medium vein. **B2)** Post surgery the type of suture is simple continuous suture. **C3)** Bandage after the wound.



Fig. 2: **D4), E5)** Two deep incision wound on the lateral stifle joint in camel. **F6)** post-surgery the type of suture is horizontal pattern.

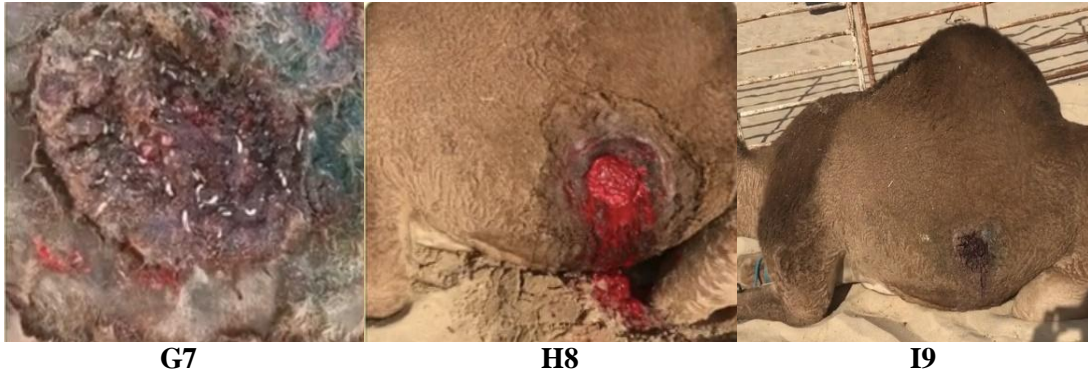


Fig. 3: G7) An old wound, rotting, and fly larvae exit from it. **H8)** After clean and remove dead tissue and fly larvae. **I9)** One week after treatment.



Fig. 4: J10), k1) A sharp iron rod penetrated the skin and muscle tissue in an adult camel. **L12), M13)** Puncture wound it led to bleeding from a milky vein.

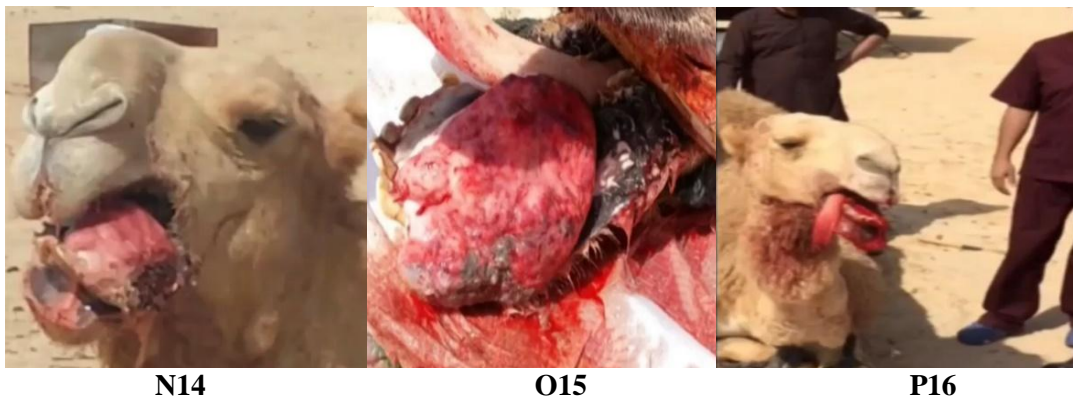


Fig.5: N14), O15) The appearance of a side tumor on the gums. **P16)** After remove tumor.



Fig. 6: Q17) Incision wound in nostril. **R18)** Post suture. **S19)** Deviation of the premaxilla and the nasal septum (wry face). **T20)** After adjusting the nose barrier with internal sewing.



Fig. 7: U21) The appearance of a tumour in the corner of the eyeball. V22) After remove tumour. W23) lacerated incision in lower eyelid. X24) post simple interrupted suture.



Fig. 8: A27) Dulla inflammation in camel. B28) Posr surgery. C29)Dulla shape after remove it.



Fig. 9: D30,E31))The photo shows the presence of waste outside the vagina due to a wound in the perineum area. F32, G33)) After two week from surgery.



Fig. 10: H34) Multiple tumors appear along the leg. I34) After remove all tuomors. L37) Tumour appearance on lateral of right digit. M38) Post surgery.



N39

O40

P41

Fig. 11: N39),O40) Appearance huge Myxo fibroma of base of the neck. P41) After remove Myxo fibroma.



S44

T45

V47

W48

Fig. 12: S44) Umbilical Hernia .T45) Post surgery. ,V47)Skin Cyst the shape is similar a Cauliflower.W48) Post surgery



X48

Y49

Z50

Fig. 13: X48) Chronic mastitis. Y49) Post surgery. Z50)Udder after Eradication.



A51

B52

C53

Fig. 14: A51) Rectal gangrene prolapse.B52) Shape of the rectal after eradication rectal Gangrene.C53) Post surgery and rectal eradication.



D54

E55

F56

Fig. 15: D51), E55)Vagina prolapse.F56) Post suture.



G57

H58

J59

Fig. 16: G57), Uterus prolapse. J59) After returns. K60) Intestine prolapse.



L61

M62

N63

O64

Fig. 17: K61) Camle suffers from dystocia and has a Caesarean section. M62) After extract foetus. N63) Papilloma on the pod.O64) After remove it.



P65

Q66

R67

Fig. 18: P65) Camel 6months old suffers from foreign body in rumen. Q66) Post surgery. R67) Foreign body its cord, bag, hair ball.

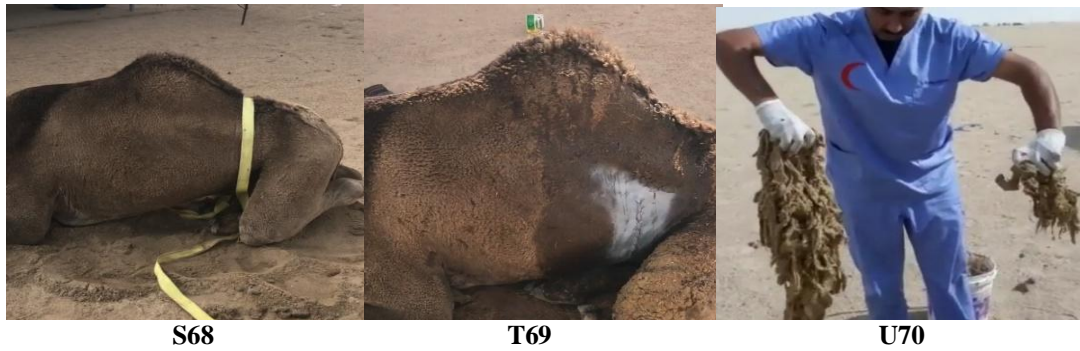


Fig. 19: S68) Camel 6 years old suffers from foreign body in rumen. T69) Post surgery. U70) Foreign body its cord, bag, hair ball.



Fig. 20: L61) Camle suffers from dystocia and has a Caesarean section. M62) After extract foetus. N63) Papilloma on the pod. O64) After remove it



Fig. 21. V71) Tooth tall and Sharpe. W72) Shortening and reducing teeth. : X73) Mandibular fracture. Y74) Fix by plate.



Fig. 22: A76) Metacarpus fracture in camel 4 months old and fix fracture by cast. B77) Remove the cast after 50 days. A76), D79) Redius fracture in camel three week



Fig. 23: E80) Metarsus fracture in camel 4 years old. F81) Femur fracture in camel one week old. G82) After 50 days remove the cast.



Fig. 24: F83) Relaxed and twisting fetlock joint. M88) Deformity in the forelimb, tendons. Lateral retropharyngeal lymph node abscess. N89) Lateral retropharyngeal lymph node abscess.

Conclusion

The study revealed that majority of female camels were injured and having affections which indicates the vulnerability of female camel to stress and aggressiveness of male camel.

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