



**Abu Dhabi Food Control Authority
Development Sector
Research & Development Division**

Technical Report تقرير فني

Title العنوان	Over view on the Surgical Field Operations in Camel (<i>Camelus dromedarius</i>)	
Project Team فريق العمل	Abdulwahhab Al-Juboori and Maher Mohammed Bake	
Duration فترة المشروع	From: January 2010	To: November 2011

Background خلفية عن الموضوع

Because of urbanization and intensive husbandry practices, the prevalence of both infectious and non infectious diseases in camels are increasing (1). Research on camel diseases has increased recently. In various studies an increased number of camels were susceptible to a large number of pathogenic agents which are major constraints in improving camel health. Camels are susceptible to many other diseases, some of which are still undiagnosed (2). Some of these diseases need successful surgical intervention (3). Camel surgery is similar to that of the horse and livestock (4). However, the veterinarian must be familiar with the normal healthy state, anatomy of the surgical site and proper anaesthesia in camels, and those with this knowledge are limited in numbers.

Problems التحديات

- Lack of information among veterinarians about camel surgery and anaesthesia
- Difficulties in some cases to transport the injury camels to the veterinary clinic.

Objectives الأهداف

The objective of the present study was to summarize the common surgical field operations in camels with special reference to causes, clinical findings and successful surgical techniques.

Methods طريقة العمل

A total of 150 clinical cases of different surgery in one-humped camels were investigated during the period January 2010 to November 2011. These animals were presented to the Al-Wathba Veterinary Hospital, Abu Dhabi Emirate. The cases included Dulaa Resection, Prolapse of rectum, Skin cutaneous abscess, bone fractures, Castration, Uterine prolapse, Caesarean Section and Foot affections. Different surgical techniques and anaesthesia were used. The different successful surgical techniques have been described in detail in the present study.

Results النتائج

Diverse surgical affections of camels were categorized according to occurrence:

Dulaa Resection: Dulaa is subjected to many injuries accompanied by inflammation. The camel should preferably be fasting for at least 48 hours before the surgery. The animal is slightly sedated by a combination of both Xylazine and Ketamine injection, controlled in the sitting (sternal) position and the mouth is kept open with a self retaining mouth gag. Dulaa is grasped with 2-3 vulcellum forceps and pulled out of the mouth to its



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full extent. The Dulaa is then taken out with hand and is resected at its base with a 24 inch long “Metzenbaum-Fino” or “Wertheim” scissors or any other good, sharp scissors.

Prolapse of rectum: The prolapsed mass is reduced carefully and gently to avoid any further damage to the organ. Following reduction of the mass, purse string sutures (nonabsorbable suture material) were applied in the skin around the anus. The suture should be enough to prevent prolapse but loose enough to allow feces to pass.

Skin cutaneous abscess: Matured abscess is opened and cleaned perfectly, then the internal part of the abscess is washed many times with a diluted solution of hydrogen peroxide (1:1). Complete surgical removal of the abscess can also be done, especially when persistent abscess cause obstacles to the performance of the camel.

Bone Fractures: The immobilization or fixation of the fractured bone is done by two methods: casting or surgical method. The use of the casting method is dependant upon the severity, location and type of fracture.

- 1) Plaster of Paris or P and P band often used in simple fractures.
- 2) Polyurethane and Polyester are also commonly used in camels as it is more solid.

The surgical method is commonly used in complicated fractures, and it varies according to the location and type of fractured bone.

Castration: the camel is restrained in lateral recumbency with the upper hind leg pulled forward and tied securely. Sedation is effective with a combination of Xylazine and Ketamine. Local anaesthetic infiltration at the operative area is also necessary. Each testicle is operated through a separate incision over the scrotal sac. The testicle is bulged in the scrotal sac by holding it tightly with the left hand. A 8-10 cm longitudinal incision is made over the ventral scrotal skin and 1-2 cm to the right and left of the median raphe.

Uterine prolapse: Good control of the camel, is obtained using a sitting position on a slope with the hind part elevated. An epidural anaesthetic is administered. The prolapsed uterus is put on a piece of cloth, and saturated the prolapse uterus is thoroughly washed with mild antiseptic solution. The Placenta is removed, lacerations and ligated any ruptured blood vessels. The prolapsed uterus is wrapped and gently squeezed it to reduce the edema. The prolapsed uterus is held slightly above the vagina with a clean towel soaked with glycerine and gently forced to the normal position. The vulva is sutured using Buhnr's method.

Caesarean Section:

The Animal is secured in the right lateral or sternal recumbency with ropes. Local infiltration anesthesia of the left flank is done using 2% Lignocaine hydrochloride with mild sedation by a combination of Xylazine and Ketamine. The left flank is prepared for aseptic surgery. A 25-30 cm long oblique skin incision is given over the posterior side of the left flank starting 2-3 cm below the transverse process of the last lumbar vertebra. After careful dissection of abdominal muscles and ligation of blood vessels the peritoneum is incised. The gravid uterus is lifted with both the hands to bring the apex of uterine horn at the incision level. A sufficiently long incision is given over the uterus thus fetal limbs are pulled out together and the fetus is delivered.

Toe tumor: The treatment of choice is surgical removal of the affected toe; this involves amputation of the toe. Depending upon the severity of the case, one may decide to perform disarticulation at the distal or even at the proximal interphalangeal joint with radial excision of the affected part of the foot



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Recommendations التوصيات

- Dulaa Resection, Prolapse of rectum, Skin cutaneous abscess, bone fractures, Castration, Uterine prolapse, Caesarean Section and Foot affections were the most common surgical field operations in camels.
- For any surgical intervention that requires immobilization and recumbency (lateral or sternal), the animal should be kept fasting for at least 36-72 hours.
- Sedation is effective with a combination of Xylazine (0.25-0.3 mg/kg bwt) and Ketamine (0.2-0.3 mg/kg bwt) hydrochloride, intravenously.
- Local anaesthetic infiltration with 2% Lignocaine hydrochloride at the operative area is also necessary.

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Date: **R D Director:**