

Udder and teat surgical affections in sheep and goats in state of Kuwait

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ABSTRACT

Udder is one of the most important organs of bovine as it is directly related to productivity and the farmer's economy. The udder and teat affections may not be life threatening to the animal but may affect its productive life. The study was conducted from October 2017 to October 2019 in different farms belonging to Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait. In this study we recorded 84 cases of udder and teat surgical affections in sheep and goats. Among them udder multi abscess 47.6%, udder gangrene 23.8%, udder hernia 10.7%, teat affections 9.5%, blind teat 8%. On the other side, the highest infection rate in sheep was 62%, while goats were 38%. Many affections of teat and udder can be cured by undertaking surgical interventions but they must be carried out under complete aseptic conditions to prevent further complications.

INTRODUCTION

Teat affections always lead to economic loss in milk yield, loss in antibiotics-treated milk, possible loss of quarter if there is a necessity to dry off, and finally reflected on the economic value of the dairy animals, hence better knowledge on teat affections and abnormalities is found to be highly needed (Mahdy, 1998).

Injuries to teat are common in dairy cattle and can be divided into two categories viz. external and internal injuries. When compared with other frequently occurring diseases, these injuries often result in premature culling of the affected cows (Nichols, S. (2008). Various diseases and anomalies of udder and teat can affect the epithelial surface of the udder and teat, teat cistern and streak canal. Anomalies of the epithelial surface of the teat include supernumerary teats, fused teats, lacerations, teat fistula, papilloma and warts. Surgical affections of teat cistern include lactolith, polyps, teat spider and local or diffused obstruction. Conditions affecting the teat streak

include contracted sphincter, enlarged teat orifice, rupture and inversion of the canal mucosa and occlusion of teat orifice (Tyagi and Singh (2010).

Obstruction of teat canal is of common occurrence and is also of economic importance in milch cows. This may be due to inflammation, growth, membranous partition and presence of lacteal calculi in the teat canal. Obstruction to the teat canal due to the teat affections is common in lactating animals and occurs very often as a sequel to recurrent mastitis and probably due to faulty milking practices. Surgical interventions by using teat knives, bistouries and teat dilators, which are often recommended, may lead to further fibrosis resulting in complete obstruction of the teat canal. The teat pathologies that require surgical intervention include supernumerary, conjoined teat, agenesis of the streak canal, tight streak canal, obstruction in the area of the rosette of Furstenberg, milk stones, obstruction in the area of the teat cistern and /or the annular ring and fibrosis of the gland sinus (Fubini and Ducharme, 2004).

Under and teat lesions can be predisposing factor to mastitis, by adversely affecting defenses and speeding the process of infection and making it more severe (Mavrogianni et al., 2006). Therefore the aim of this work is to evaluate the most prevalent abnormalities and surgical udder and teats affections in small ruminant like sheep and goat in Kuwait with special emphasis on the incidence, causes, evaluation of the different methods of treatment. Finally to claim advises which keep sound udder and teats in small ruminant.

MATERIAL AND METHODS

The cases were diagnosed based on clinical sign, physical examination of affections.

Surgical procedure

Preparation of the animal consisted of fasting and withholding of feed and water for 12 hours prior to surgery. Animal was sedated with Siquil (Triflupromazine HCL) @0.2 mg/kg, IV. Maintenance was achieved with a mixture of Diazepam and Ketamine in 1:2 ratios mixed in a single syringe infused intravenously. The

surgical site was shaved and disinfected. An elliptical skin incision was made around the base of the left mammary gland (Unilateral mastectomy). The skin was dissected from the glandular tissue and body wall. The glandular tunic was separated from the abdominal wall and blood vessels. Superficial caudal epigastric vessels, external pudendal, and prineal blood vessels were ligated with catgut (2-0) absorbable suture material. All of the mammary tissue and lymph nodes were removed and vasculature between the udder halves was tightly ligated. After total removal of the left mammary gland, the subcutaneous tissue were sutured with catgut 1-0 in simple continuous suture pattern and the skin was sutured with non JThe Pharma Innovation Journal absorbable black braided silk in horizontal mattress pattern. Postoperative care included Ceftriaxone (20 mg/kg) and Meloxicam (0.2mg/kg) for 5 and 3 days, respectively. Antiseptic dressing was performed topically to the surgical site once a day for one week. The goat was fully recovered one week after the surgery. The skin sutures were removed on 10th postoperative day and no complications were observed regarding the surgical wound.

Table 1: Udder and teats affections in sheep and goat in Kuwait city

Udder & teat affections	Numbers	%	Sheep	%	Goat	%
Udder Multi Abscess	40	47.6%	23	27%	17	2%
Udder Gangarene	20	23.8%	12	14%	8	9.5%
Udder Hernia (Ventral Abdominal Hernia at the Level of the Udder)	9	10.7%	9	10.7%	-	-
Teat Affections	8	9.5%	3	3.5%	5	6%
Blind Teat	7	8%	5	6%	2	2%
Total	84	-	52	62%	32	38%

RESULTS AND DISCUSSION

The study was conducted from October 2017 to October 2019 in different farms belonging to Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait. In this study we recorded 84 cases of udder and teat surgical affections in sheep and goats (Table 1). Among the cases udder multi abscess 47.6%, udder gangrene 23.8%, udder hernia 10.7%, teat affections 9.5%, blind teat 8%. On the other side, the highest infection rate in sheep was 62%, while goats were

38%. This is the first study recorded and documented in Kuwait about udder and teat surgical affections in sheep and goats. Through it was observed that the highest rate of injury was multi abscess in udder. The success rate of the operations was very high although the size of the huge damage and the state of health, the cases are recovering very quickly. In some cases there was pus or inflammation in the wound site and is controlled by general treatments disinfectant and a course of antibiotics and inflammatory.

Multi abscess and tumors

Abscesses or tumors of the udder may develop beneath the skin as a result of infection of a haematoma. It may occur in the parenchyma of the udder as a result of chronic mastitis especially in goats. Generally, abscess formations most commonly occurs secondary to the traumatic wound. Subcutaneous abscess of the udder secondary to teat injury and chronic mastitis can occur. It should be drained and cleaned using antiseptic solutions until complete healing occurs. Un-noticed acute case usually progresses to chronic condition with abscess formation. Cases of multiple abscesses or tumors were totally mastectomized (Figure 1 & 3).

Teat papilloma and fibropapilloma

These are single or multiple abnormal projections that originate from the skin surface of the teat. Unless the affected teat becomes ulcerated or cracked, it will not interfere with milking. A tight ligature at the base of the wart will occlude the blood supply leading to its sloughing. In case of multiple warts, autoimmunization is found to be useful. Surgical removal of the affection were done here (Figure 8U).

Blind teat

Imperforate Teat It is the occlusion of teat orifice which can be either congenital or acquired in nature. It is a developmental anomaly in the first calve or may be acquired conditions due to trauma to the teat tip. The occlusion is relieved by

inserting an 18 gauge hypodermic needle into the teat cistern under local anaesthesia until milk starts coming out. The obstruction of the orifice can also be cleared by the insertion of a sterilized milk siphon or a suitable trocar and cannula, the latter being left in position for some time to regain desired patency to its original size and for expulsion of contents of the udder (Figure 8V).

Gangrenous mastitis

Gangrenous mastitis is per acute or acute form of mastitis caused mainly by infectious agents like *Staphylococcus aureus*, *Clostridium perfringens* and *Escherichia coli* in cattle. It is characterized by classical signs of inflammation with bluish discoloration which then progresses to necrosis of the udder. The affected area is cold to touch with crepitating sound and fluid exudates. The toxins released from bacteria cause ulceration, and sloughing of udder epithelium which then lead to toxemia with fatal consequences. The histopathology lesions are characterised by progressive swelling with vascular degeneration, ulceration and erosion of the epithelium (Islam et al., 2008). If treated early, animal can be saved from fatal toxemic conditions. The safe and effective treatment includes partial mastectomy of the affected quarter (Phiri et al., 2010). Amputation of complete mammary gland can also be done considering the general health status of the animal (Cable et al., 2004). Administration of antimicrobials and fluids helps to eliminate the toxins. Mastectomy of the affected mammary gland was the only treatment of the cases especially later stages (Figure 8).



Figure 1: A) Three years old in a goat suffers from a presence of multiple tumours in front and behind the udder. B) Post surgery the external wound by interrupted matters. C) Goat after removed udder.



Figure 2: D) Big udder in an ewe four years old. E) After remove udder. E) Post surgery.



Figure 3: F) Multi abscesses and connective tissue intra udder. G) Udder after remove. H) Goat post-surgery.



Figure 4: I) A big udder falling to the ground in an ewe. J) After surgical removal and was estimated to be above 18 kilograms. K) Ewe after surgery.



Figure 5: L), M) The warts are spreading on a quarter of the udder. N) Post surgery.

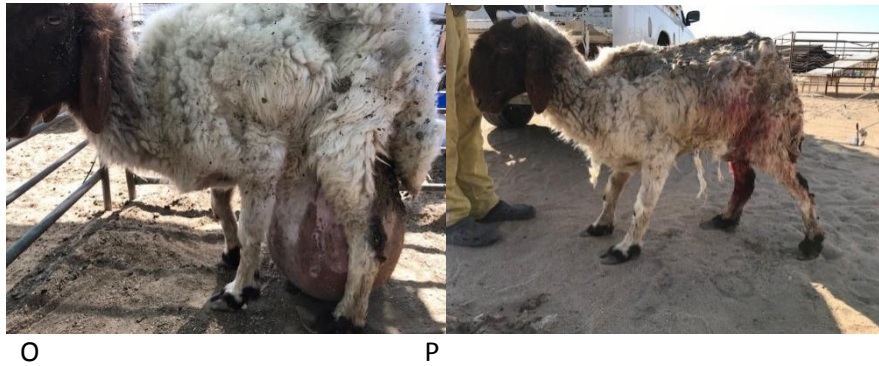


Figure 6: O) Ewe 4 years old suffers from udder hernia (ventral abdominal hernia at the level of the udder. P) Post surgery.



Figure 7: O), R) The teat appear has wound. S) After surgery - the suture is simple interrupted suture



Figure 8: T) Udder hernia (ventral abdominal hernia at the level of the udder) with mastitis gangrene. U) Papilloma on teat. V) Clogged teat udder.

CONCLUSION

The udder and teat surgical affection are common in sheep and goat in Kuwait which need much more attention for prevention and treatment for reducing economic losses. Post-operative complications mostly encountered are mastitis, reduction in milk yield, and further contamination. So strict asepsis should always be maintained while performing teat surgeries.

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