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## Unilateral mastectomy for successful management of gangrenous mastitis in a Goat

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### Abstract

A case report of non-descriptive goat presented with the condition of unilateral gangrenous mastitis and the non-responsive of long duration of antibiotic therapy and gangrenous nature of the condition, unilateral mastectomy was performed and the goat was recovered without any complication after 10 days of post-operative management.

**Key words:** Goat, gangrenous mastitis, unilateral mastectomy

### Introduction

Mastitis reflects the inflammation of the mammary gland, which may occur due to any bacterial infection secondary to teat injury or poor management<sup>[8]</sup>. Caprine mastitis is a very serious problem in goat breeding which may lead to a decreasing in the overall health. Various pathogens and predisposing factors play a major role in the occurrence of this disease. A wide range of microorganisms cause mastitis in sheep but, most cases are reported to be due to Staphylococci infection<sup>[2]</sup>. Predisposing factors include poor management and irregular or faulty milking leads to teat injuries, narrowing of the teat canal. Gangrenous mastitis is a peracute form of mastitis, characterized by necrosis of the udder tissue, caused by alpha-toxins<sup>[12]</sup>. Physical examination of the udder is characterized by discolored (blue- blackish or blue-greenish) and cold udder<sup>[11]</sup>. Gangrenous mastitis is one of the most difficult forms of mastitis to be treated<sup>[4]</sup> and in very severe cases, the gangrene may lead to toxemia and loss of animal life<sup>[11]</sup>.

The present case report describes the surgical approach of unilateral mastectomy as a treatment option for goats with gangrenous mastitis, while allowing the other mammary gland to continue lactation.

### History and Diagnosis

A five-year-old non descriptive goat, weighing about 34 kg was presented to Veterinary Hospital with history of blackish discoloration of the left mammary gland. Clinical examination revealed that the respiration and pulse rate were within the normal range and slightly elevated body temperature (104<sup>0</sup> F). Examination of the left mammary gland revealed marked purulent extensive ulcerative lesion (Fig. 1) with black discoloration and was cold on palpation. Based on the non-responsive of long duration of antibiotic therapy and gangrenous nature of the condition, radical surgery was planned for total ablation of the left mammary gland.

**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<sup>[1]</sup>. Maintenance was achieved with a mixture of Diazepam and Ketamine in 1:2 ratios mixed in a single syringe infused intravenously<sup>[7]</sup>. The surgical site was shaved and disinfected. An elliptical skin incision was made around the base of the left mammary gland (Unilateral mastectomy) (fig. 2). 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 preneal 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 (Fig. 3) and the skin was sutured with non-

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absorbable black braided silk in horizontal mattress pattern (Fig. 4). 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 10<sup>th</sup> postoperative day (Fig.5) and no complications were observed regarding the surgical wound (Fig. 5).



**Fig 1:** Gangrenous left mammary gland



**Fig.2:** Elliptical incision is made



**Fig. 3:** Skin was closed with horizontal



**Fig.4:** skin sutures being removed mattress suture. On 10<sup>th</sup> Post-operative day.



**Fig. 5:** Goat after left unilateral mastectomy.

### Discussion

The present case report was to establish the surgical approach of unilateral mastectomy to treat gangrenous mastitis in goats as an alternative to medical treatment with antibiotics or supportive therapy, both of which reportedly limited value [3]. Radostits [10], who opined that the exhaustive therapeutic measure alone is not effective for treatment of gangrenous mastitis unless early surgical removal of the affected quarter is undertaken, which is the only standard treatment for gangrenous mastitis in ewes [5]. In the present case, the decision was made not to risk the goat's life and instead, a unilateral mastectomy was performed on the infected gland. According to Peer and Bhattacharyya [9], the highest prevalence (40%) of mastitis was observed in goats 1-6 years of age. The goat in the present case was 5 years old and in line with the mentioned average age. According to El-Maghraby [6], the bilateral mastectomy was easier to perform than unilateral mastectomy, as there are several interconnecting blood vessels between two halves of the udder that need to be ligated during unilateral mastectomy. In the current case, since only the left udder was infected and it was hoped that the goat would continue to lactate, a unilateral mastectomy was performed even though it was reported to be more difficult than bilateral mastectomy. Radical mastectomy (unilateral or bilateral) is a salvage procedure in the case of

gangrenous mastitis, neoplasia or hyperplastic conditions of the udder. Unilateral mastectomy can be an option for goats with gangrenous mastitis because this method will allow the other mammary gland to continue lactation. Overall, the success rate and client satisfaction makes the unilateral mastectomy, a viable alternative treatment of goats with gangrenous mastitis.

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