# GANGRENOUS MASTITIS IN A FEMALE BEAGLE DOG

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**ABSTRACT**

A three year old female beagle dog, whelped 7 days back, was presented to the University Veterinary Hospital, Kokkalai with a complaint of reduced food intake and death of puppies. An oedematous right caudal mammary gland which was hot to touch and have sticky milk secretions. Milk sample was collected and examined for culture and sensitivity examination. The mammary gland underwent gangrenous changes and sloughing off happened for the tissue. The animal was treated with antibiotics and fluid therapy. The wound was managed with local applications and wet to dry dressing. After three week of post therapy a scar formed on recovered area and animal showed an uneventful recovery.

**Key words:** Gangrene, Mastitis, Antibiogram, sloughing off, scar

## INTRODUCTION

Now-a-days, mammary gland diseases are quite common in female dogs of all breeds. Mammary gland disorders like mastitis are usually occurring during post-natal period or during pseudo pregnancy (Wiebe and Howard, 2009). The term mastitis can be used to refer any inflammation to the udder tissue. Gangrenous mastitis is an uncommon condition in dogs characterised by pus production and abscess formation. The main bacterial agents involved are *Staphylococcus* spp, *Escherichia coli* and *Streptococci* (Jutkowitz, 2005). This condition may be usually underestimated or misdiagnosed and can later compromise the life of an animal. Gangrenous mastitis is usually occurring as a result of untreated acute mastitis. The diseased gland will become darker, colder and have a putrid odour. Affected area will become ulcerated and necrotic. Signs of sepsis may also develop during this period.

## CASE HISTORY AND OBSERVATIONS

A three year old female beagle dog was presented to the University Veterinary Hospital, Kokkalai with a complaint of reduced food intake and death of puppies. Animal whelped 4 pups before 7 days, and one pup is live now. Animal was dull and depressed. On general clinical examination dog showed normal body temperature (102.1°F) congested mucous membrane, enlarged lymph nodes, swelling and discolouration of right caudal thoracic mammary gland. In the, first day, bluish black discolouration noticed in the gland (Fig -2) and it was hot to touch with the expression of sticky milk.

## TREATMENT AND DISCUSSION

The case was tentatively diagnosed as gangrenous mastitis and antibiotic treatment started with Ceftriaxone-Tazobactum at 25mg/kg b.wt, i/v and Amikacin 10mg/kg b.wt, i/v. Supportive therapy with fluids (NS and RL) and supplements (Polybion and Health up) were also provided. On the second day, the affected gland become darker in colour and colder to touch. Bacteriological examination of milk revealed gram negative bacilli as causative agent. Antibiogram revealed strong sensitivity to ceftriaxone and biotrim. A course of Ceftiaxone-Tazobactum (7 days) along with supportive therapy was given to the animal and it showed a remarkable improvement in condition. Later, the affected mammary gland sloughed off. The sloughed off area was flushed with potassium permanganate (1: 2000) lotion and packed initially with soft pads containing magnesium sulphate- glycerine paste, and later with povidone iodine. The dog showed improvement in appetite in a week time and the sloughed off area healed completely by three week.

| | Day 1 | Day 7 | | |
|---|---|---|---|---|
| | RESULT | RESULT | UNIT | NORMAL LIMITS |
| WBC | 17.3 | 13.1 | $10^3/\mu$ l | 6.0-17 |
| LYM | 2.8 | 4.2 | " | 0.7-5.1 |
| MON | 0.7 | 0.9 | " | 0.2-1.7 |
| GRA | 13.8 | 8.0 | " | 4.4-12.6 |
| LYM% | 16.3 | 32.3 | % | 12.0-30.0 |
| MON% | 3.8 | 7.0 | % | 3.0-10.0 |
| GRA% | 79.9 | 60.7 | % | 40.0-74.0 |
| RBC | 3.82 | 3.48 | $10^6/\mu$ l | 5.50-8.50 |
| HB | 7.5 | 8.0 | g/dl | 12.0-18.0 |
| HCT | 25.9 | 24.0 | % | 37.0-55.0 |
| MCV | 67.8 | 69.0 | $\mu m^3$ | 60.0-77.0 |
| MCH | 19.6 | 28.0 | pg | 19.0-25.0 |
| MCHC | 29.0 | 33.3 | g/dl | 32.0-36.0 |
| RDW | 16.5 | 15.6 | % | 11.0-14.0 |
| PLT | 465 | 277 | $10^3/\mu$ l | 160-525 |
| MPV | 8.0 | 6.8 | $\mu m^3$ | 7.0-13.0 |
| PCT | 0.372 | 0.244 | % | 0.150-0.390 |
| PDW | 15.4 | 15.6 | % | 51.0-73.0 |

**Table. 1-** Haematological parameters on Day 1 and Day 7 of treatment

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The term mastitis refers to any inflammation of mammary gland with or without an infection (Vasiu *et al*., 2017). The pathogens usually involved are bacteria, but in some cases fungal mastitis is also observed. This is a problem of all dog breeds at various ages. Other than the post natal lactation period mastitis can also be related to the different conditions like galactostasis, pseudopregnancy, mammary hyperplasia or mammary neoplasia (Kaszak *et al*., 2018). The four clinical forms of canine mastitis are acute, subclinical, chronic and gangrenous forms. Usually the untreated acute mastitis will lead to gangrenous mastitis and septic shock.

During Gangrenous mastitis, due to loss of blood supply and bacterial infection localised death and decomposition of udder tissue will happen. The condition is characterised by abscess formation, pus production, ulceration and necrosis of the affected gland. The gland will become darker and colder with an unpleasant putrid odour. Animal will show signs of sepsis.

To diagnose gangrenous mastitis in a female dog, mammary glands should be evaluated for their symmetry, temperature, size, consistency and skin colour. Bacteriological examination can be done to isolate the organism and to select the effective antibiotic for treatment (Vasiu *et al*., 2015). Stabilisations of the patient using aggressive fluid therapy and wound management during treatment are very important to minimise the effect of sepsis. If the condition is diagnosed as Gangrene it is strongly advised against to nurse the puppies. Ingestion of toxic milk may risk the life of puppies (Wilson, 2013). We can go for surgical drainage of the affected area and in severe cases mastectomy is also recommended to save the animal. Formation of gangrene will compromise the functions of mammary gland and the area will be covered by a fibrous tissue scar in the future.

This report presents a comprehensive summary of clinical signs and treatment strategy in a case of gangrenous mastitis in bitch, followed by death of pups. The animal was provided with antibiotics along with supportive therapy, the ulcerated site healed normally and the animal had an uneventful recovery.

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