

## LETTER TO EDITOR

## Acute Gangrenous Mastitis Observed Following Diarrhea in the Postpartum Period in a Queen

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## DEAR EDITOR

We would like to present a rare case of acute gangrenous mastitis in a cat that developed after treatment of diarrhea in the postpartum period.

A 2-year-old British Shorthair cat was brought to Afyon Kocatepe University Animal Hospital with complaints of discontinuing breastfeeding for about 2 days and black discoloration in the left abdominal mammary gland for 3 days. In patient's history, it was learned that the cat gave birth for the first time two weeks ago and treated for postpartum diarrhea after birth. In the clinical examination, it was determined that there was loss of appetite, vomiting, weakness. Black necrotic flap on the skin, wound and pus discharge in the abdominal mammary region were observed (*Fig. 1-a*). The cat's body temperature was measured at 39.4°C. A complete blood count and biochemistry panel results were as in *Table 1*. A wound swab was taken and sent to the laboratory for

microbiological analysis and antibiotic susceptibility testing. Due to its antiseptic properties, 1 g. of ethacridine lactate powder (Rivanol® 1 g., Şifa, İzmir, Türkiye) was dissolved in 1 liter of water and applied on the wound for 3 weeks. After cleaning the wound area, centella asiatica (Madecassol® 1% cream, Bayer Consumer Care AG, Switzerland) and nitrofurazone (Furacin® 0.2% pomade, Sanofi, Istanbul, Türkiye) were applied to the wound area twice daily. "Blind" antibiotic treatment was given without delay until the antibiogram results was obtained. For this purpose, Enrofloxacin (5% Baytril®, Bayer AG, Leverkusen, Germany) was administered intramuscularly at a dose of 5 mg/kg body weight once a day for 5 days. In addition, Cefuroxime (Cefaks®, 750 mg, DEVA Holding A.Ş., Istanbul, Türkiye) was given intravenously at a dose of 25 mg/kg body weight twice a day for 5 days. Metoclopramide (Metpamid®, 5 mg/mL, Sifar, Istanbul, Türkiye) (antiemetic agent and dopamine D2 antagonist) was administered intramuscularly at





**Fig 1.** a- Pre-treatment image of the left caudo-abdominal mammary gland (day zero), b- Mammary gland in the third day of treatment, c- Mammary gland on the twenty-third day treatment

**Table 1.** Hematological and serum biochemical parameter values at the beginning of treatment and on the second day treatment

Parameters	Parameter Values at the Beginning of Treatment	Parameter Values on the Second Day of Treatment	Reference Values
WBC ( $10^3/\mu\text{L}$ )	54.6	26.6	6.0-17.0
LYM (%)	50.2	55.9	12.0-30.0
MID (%)	3.4	0.6	2.0-4.0
GRA (%)	46.4	43.5	62.0-87.0
LYM ( $10^3/\mu\text{L}$ )	27.38	14.87	1.0-4.8
MID ( $10^3/\mu\text{L}$ )	1.83	0.17	0.2-1.5
GRA ( $10^3/\mu\text{L}$ )	25.3	11.6	3.0-12.0
HB (g/dL)	10.9	9.0	12.0-18.0
HCT (%)	28.1	24.2	37.0-55.0
PLT( $10^3/\mu\text{L}$ )	167.0	240.0	200.0-500.0
Urea (mg/dL)	95	NS	9.8-35
ALP (IU/L)	33.0	NS	11.0-49.0
ALT (IU/L)	38.5	NS	10.0-130.0
AST (IU/L)	56.4	NS	17.0-48.0
Albumin (g/dL)	2.7	NS	2.5-4.0
Globulin (g/dL)	4.0	NS	2.3-5.3
Albumin/Globulin	0.7	NS	0.8-1.5
BUN (mg/dL)	44.4	NS	17.0-35.0
Creatinine (mg/dL)	0.8	NS	0.5-1.8
BUN/Creatinine	57.7	NS	4.0-35.0
Calcium (mg/dL)	9.0	NS	8.0-11.2
NS: No sample			

a total dose of 3 mg once a day for 5 days. Meloxicam (Meloxicam®, baVET, İstanbul, Türkiye) was applied subcutaneously at a dose of 0.2 mg/kg body weight once a day for 3 days. Five mL of solution containing electrolytes, vitamins (especially B), amino acids and dextrose (Duphalyte®, Zoetis Manufacturing& Research Spain, S.L) was given subcutaneously for 3 days. Sodium chloride 0.9% solution (40 mL/kg body weight/day) was used for the treatment of fluid loss. The Elizabethan collar was used to prevent the animal from licking the wound area. According to microbiological analysis results,

*Escherichia coli* was identified from the wound swab by VITEK 2 Compact (BioMérieux, France). The antibiotic resistance of isolate to various antimicrobial agents was tested on Mueller Hinton agar (MHA; Oxoid Limited, Hampshire, UK) using Kirby-Bauer disc diffusion method according to CLSI (2020) [1]. The most effective antibiotic was determined to be enrofloxacin followed by amoxicillin/clavulanic acid, lincomycin/spectinomycin, trimethoprim/sulfamethoxazole and amikacin. According to these results, it was determined that effective antibiotic groups were selected at the beginning of treatment. After

mastitis, the cat made a full recovery on the twenty-third day. Mammary gland images on the third and twenty-third days of treatment are shown in *Fig. 1-b,c* respectively.

A variety of bacterial isolates have been reported in published reports of acute gangrenous mastitis in cats [2-6]. In our case, *E. coli* was isolated from the udder of a cat after treatment of diarrhea in postpartum period, suggesting that mastitis may have been caused by this agent. Only three articles have provided detailed information about the treatment protocol [2,4,5]. There is not enough knowledge about which treatment procedure (mastectomy [5] or open wound therapy [2,4]) should be applied and which parameters are required for the medical treatment procedure. In our case, medical treatment was used. It is thought that the medical treatment mentioned above can be used as an alternative to surgical treatment.

This is a reported case of acute gangrenous mastitis occurring after treatment of diarrhea in postpartum period in a cat. Diarrhea in the postpartum period may cause

acute gangrenous mastitis. Lactating cats with postpartum diarrhea should be monitored for acute gangrenous mastitis. Improvement in hematological parameters after initiation of treatment should be considered as a correct response to medical treatment.

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