

## Short Communication

# BLACK QUARTER IN A COW : A CASE REPORT

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**ABSTRACT:** Black Quarter is an acute bacterial disease of ruminants which is characterized by swollen, hot and painful wound affecting mostly the hind limb. It is caused by *Clostridium chauvoei*, a Gram positive rod shaped, spore forming and toxin producing anaerobe. The present study reports the occurrence of Black Quarter in a seven months old cow taken for treatment at Additional Block Animal Health Centre, Joshpur, Birbhum, West Bengal. Diagnosis was done on the basis of history, clinical signs and haematological examinations. The animal was treated successfully with the use of parenteral administration of Penicillin and Oxytetracycline, spraying of polyherbal ayurvedic product on the affected limb and accessory medications comprising of antihistaminic and NSAID. However, proper vaccination of the animals in the field condition can be the best tool to combat this disease.

**Key words:** Black Quarter, *Clostridium chauvoei*.

### Case history and observation

A farmer with his seven months old cow of indigenous native breed came to the Additional Block Animal Health Centre, Joshpur, Birbhum, West Bengal with the symptoms of high fever (106°F), anorexia and lameness in hind leg. There was reddish hot painful swelling at the right hind leg. The animal was shivering in pain. The farmer also reported that the animal was suffering from depression and dullness and was not taking feed from last few days. After clinical examination it was seen that the pulse rate was very high *i.e.* 80-82. The animal showed restlessness and was encountering troubled breathing. The physical examination revealed inflammatory reddish and deep wound in the hip region on the right hind limb. The area of infection was hot and painful. The skin of that particular area was damaged and pus was coming out of the wound.

The upper portion of the wound was mottled with black patches. These patches represented dead tissues. On palpation, the wound revealed crackling or crepitating sound which leads to suspect the case as Block Quarter (Radostits *et al.* 2000).

### Haematological and microscopical examination

Blood was collected in a sterile vial with suitable anticoagulant by puncturing jugular vein of that animal by using a sterile 16 gauge needle and was sent to Disease Investigation and Clinical Laboratory, Department of Animal Resources Development, Suri, Birbhum for haematological analysis.

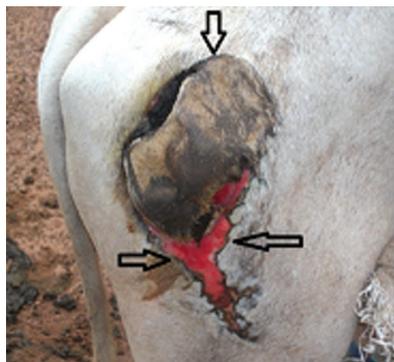
Results of changes in the haematological parameters in that calf showed an increase in RBC, PCV, Haemoglobin level and the total leukocyte count. MCHC and MCH remained within normal range values. However, a terminal significant increase of MCV was obtained. Thrombocytes showed a steady drop after infection. The blood picture revealed increased no. of circulatory Neutrophils which generally occurs due to localized bacterial infection and tissue damage. The no. of lymphocytes and Monocytes also increased due to bacterial infection. Fluid was taken from affected tissue by needle puncture; impression smear was made in glass slide, dried up in air and fixed with heat. Gram staining was done according to standard procedure. Microscopic examination was done under compound microscope at 100 X (oil immersion).

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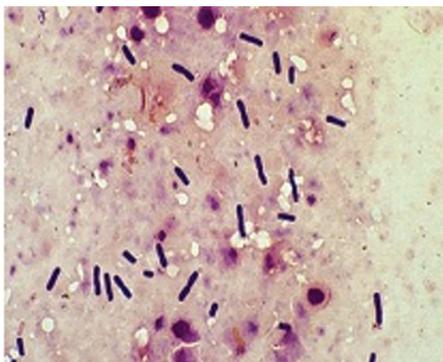
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**Fig. 1. Reddish hot painful wound in hind limb.**



**Fig.2. Microscopical examination of the impression smear.**



**Fig. 3. Healing of Blackleg after one week of treatment.**

The microscopical examination of the smear revealed tiny rod shaped gram positive organisms with sub terminal spores arranged singly or irregular clumps.

### Treatment

Diagnosis of Black Quarter was done on the basis of clinical history and laboratory examination of clinical specimen. There was no provision for antibiotic sensitivity test. The animal was treated following routine treatment schedule. The animal was treated with Dicrysticin-S (Streptomycin Sulphate equivalent to 2.5 gm of Base, Procaine Penicillin G 1,500,000 Units, Penicillin G Sodium 500,000 Units) @ 10,000 units/Kg body weight IM along with Terramycine®/LA (Oxytetracycline Dihydrate 200mg/ml of oxytetracycline dihydrate in 2-pyrrolidone vehicle system) @ 20 mg/Kg body weight IM for seven days. Supportive treatment was

given by using Avilin ®VET (Pheniramine maleate I.P. 22.75 mg/ml) @ 5ml IM, which acted as antihistaminic and Melonex (Meloxicam 5mg/ml) 5ml IM, which acted as analgesic. Both these medicines were used once daily for the period of five days. Topicure Spray (Polyherbal ayurvedic product) was applied on the affected area for seven days. The swelling was incised carefully for aeration and the pus was drained off. The farmer was also advised to wash the wound area once daily with potassium permanganate diluted in water as it is a mild antiseptic with astringent property. For that purpose, 400 mg potassium permanganate powder was diluted in 4 litres of water to give a dilution of 1:10,000 (0.01%).

Clinical improvement was noticed after one week of treatment and was determined basing on the clinical examination findings. The animal was totally cured after 3 weeks.

The black quarter reduce the production of animals and make them useless and uneconomical for the farmers (Alwis 1988). In India, the disease is prevalent in all the states and is sporadic in nature (Naz *et al.* 2005). Treatment trials indicate that Oxytetracycline and Amoxicillin both proved 95% effective results (Myllys *et al.* 1995). It is the common fashion in this country that BQ is treated by application of antibiotic. High dose of antibiotics is choice of treatment in early case (before 12 hr), but after 12 hr if animal remain alive, antibiotics with specific antitoxin can be chosen as specific therapeutic means (Sultana *et al.* 2008). But Black Quarter antiserum is not available in Birbhum. Therefore, the better option to control the disease would be getting the animal vaccinated against Black Quarter.

### ACKNOWLEDGEMENT

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**Table 1. Results of haematological examination.**

Sl. No.	Parameters	Estimated values	Normal values
1	Haemoglobin (g %)	9.6	8-15
2	TEC ( x 10 <sup>6</sup> /μl )	8	5-10
3	TLC ( x 10 <sup>6</sup> /μl )	15	4-12
4	Neutrophils (%)	52	15-33
5	Lymphocytes (%)	68	62-63
6	Monocytes (%)	9	0-8
7	Eosinophils (%)	17	0-20
8	Basophils (%)	5	0-2
9	PCV (%)	53	24-46
9	MCH (pg)	14	11-17
10	MCHC (pg) %	33	30-36
11	MCV (μ <sup>3</sup> )	65	40-60

## Black Quarter in a cow: a case report

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