

A CASE OF PASTEURELLOSIS IN MALE SLOTH BEAR AT JAIPUR ZOO

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Pasteurellosis is a common bacterial disease encountered in domestic and wild animals. This infection occurs in two forms: as localized pneumonic and generalized septicaemic forms. In both conditions high morbidity with varying degrees of mortality has been recorded. Predisposing factors like weather or environmental stress, humidity, transportation stress etc. play an important role in establishing the infection caused by *Pasteurella multocida* and *Pasteurella haemolytica*. These organisms are normal inhabitants of upper and lower respiratory tract of animals.

A male Sloth Bear, aged 17 years kept at Jaipur Zoo, was found dead in the wee hours and this sudden death was reported without any history of prior serious illness. The animal was dull the last two days, with lacrimation and nasal discharge being the only symptoms. The animal weighed about 170 kg and the general health condition was apparently very good. But for the pot belly, external examination failed to reveal any evidence of injury. Pinkish fluid was found oozing out from the mouth and nostril. A midline incision at ventral aspect of the carcass showed the presence of thick adipose tissue layer, but haemolyzed bloody fluid dribbled out following incision of musculature. About three litres of bloody fluid accumulated in the abdominal cavity was found to be the cause of the pot belly.

All abdominal musculature and subcutaneous tissues showed severe congestion and petechial haemorrhages. Liver was shrunk and nonfriable suggestive of cirrhosis and fibrosis. The extremities of the liver was pale and congested centrally. In between liver lobes, near the gall bladder, a muscular sac was found, about eight inches in length and four inches in width, filled with clear fluid possessing liver flukes. The liver lobes were found engauged with haemolyzed blood and this became evident when the lobes were incised.

Spleen was found to be pale at extremities, congested centrally and hard in consistency. Kidneys showed congestion. Stomach was totally empty and pale except for a few patches of congestion. The pyloric end of the stomach had mature worms. The intestines were severely congested, empty and ballooned

due to accumulation of gases. Following incision, the intestines also revealed congestion and petechial haemorrhages and found to possess adult worms.

The thoracic cavity had about 1000 ml of haemolyzed bloody fluid. Lung lobes showed variable pathogenic lesions including areas of consolidation, haemorrhages, congestion and compensatory emphysema. The heart was covered with a thick layer of adipose tissue and abnormally thick pericardial layer. When incised no pericardial fluid could be found. Heart muscles showed signs of congestion and petechial haemorrhages. Heart cavities were totally empty with no clots or blood.

Trachea and bronchi were congested and had a lining of pinkish fluid. Oesophagus was empty and thoroughly searched for the presence of any choke. The regional lymph glands were found swollen and congested.

The genitalia and urinary tract, along with urinary bladder failed to present any significant pathological lesion except for slight congestion.

The microscopic examination of impression smears from lung, liver, spleen, kidneys, abdominal fluid, thoracic fluid, tracheal fluids, following Giemsa's staining showed the presence of bacterial rods with bipolar staining characters indistinguishable from pasteurellae. Infiltration of neutrophils, mononuclear cells and macrophages were suggestive of the host's response to bacterial invasion. The haemolyzed blood samples, lung tissues and liver fluids were subjected to cultural examination in nutrient agar and blood agar culture media. The bacterial growths so obtained following incubation of culture plates were purified and subjected to identification as per standard bacterial identification tests. *Pasteurella multocida* and *P. haemolytica* were identified and were supposed to be the cause of a paracute form of haemorrhagic septicaemia resulting in the sudden death of the Sloth Bear. Pasteurellosis has also been reported by George (1985) in deer, Nayak *et al.* (1988) and Sarkar *et al.* (1989) in Panda, Arora and Kumar (1988) in tiger, Chakraborty and Maity (1993) in wolves, and by Sen Gupta (1974) in monkeys.

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CASE REPORT

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HAEMATOLOGY AND SERUM CHEMISTRY OF INDIAN WOLF (*CANIS LUPUS PALLIPUS*)

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Introduction

According to the Conservation Assessment, the Indian Wolf (*Canis lupus pallipus*) is a near threatened subspecies. The Sakkarbaug Zoo has established a captive-breeding programme since last few years. Successful breeding of this species in captivity at the zoo is reflected by the many births. At present, the zoo has 14 individuals, which might be one of the largest captive populations of this subspecies in the world. Biological parameters are considered useful aids in clinical diagnosis and there is paucity of such information. Therefore, the study was undertaken to estimate the normal ranges of a variety of haematological and serum chemistry values in healthy individuals of this species.

Materials and Methods

Fourteen apparently healthy Indian Wolves housed at Sakkarbaug Zoo, Junagadh, Gujarat were utilised for this study. Of these animals, five were pups (3 males and 2 females) about five months of age and nine were adults (5 males and 4 females). Except for one male, which was acquired from the wild, the rest were born in captivity.

These animals were housed in three groups. Group one com-

posed of a breeding pair with five pups. Group two composed of four adult animals (3 males and 1 female) and group three composed of three adult animals (1 male and 2 females). Each group was housed in separate enclosures having an outdoor area of about 300 ft², covered from all four sides with a chain-linked fence. Additionally, every enclosure had an area of about 200 ft² as night house or feeding house. These animals were maintained on a natural light and dark cycle and fed with buffalo meat comprising soft bones (15%). Food was supplemented adequately with necessary vitamins and minerals. Water was made available to all animals round the clock. Animals were physically examined to determine their health condition. Approximately 10 ml of blood was obtained from femoral vein with a sterilised 20-gauge needle after restraining the animal in a squeeze cage. Two millilitre of blood was deposited into a sterile tube containing di-potassium ethylenediamine tetra acetate (EDTA) and rest was transferred to centrifuge tube for serum separation. The EDTA tubes were agitated for 15-20 seconds. Haematological evaluations were performed on whole blood. Serum was separated within 30 minutes of sample collection by centrifugation, and serum chemistry evaluations were performed within six hours of sample collection. Blood smears were stained with field A and B stain and differential counts (based on a count of 100 cells) were made manually under microscope. Haemoglobin estimation was done by Sahil's acid hematin method

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