

Tuberculosis in free ranging Barking Deer (*Muntiacus muntjak*)

Bahar S. Baviskar¹ and A.G. Bhandarkar²

Introduction

Tuberculosis, a chronic infectious disease caused by acid fast bacilli of the genus mycobacterium, has a wide host range which includes elephants, llamas, deer, urial, tapirs, antelopes, sheep, binturongs, lesser pandas (Liston & Soparkar, 1924), giraffe (Rai & Chandrasekharan, 1958), wild sheep, mouse deer (Sen Gupta, 1974), black buck, sambar, chital (Singh et al., 1981), gaur (Rao, 1989), barking deer, hog deer, mithun (Chakraborty et al., 1993) and nilgai (Fox, 1923). Besides this, it is found affecting carnivores, primates, perissodactylids, marsupials, rodents, reptiles, amphibians (Arora, 1994) and birds (Lesser whistling teal and pigeon) in captivity (Rao et al., 1982).

In natural condition, stagnant drinking water can act as a source of infection upto 18 days after its last use by an infected animal, whereas a running stream does not represent an important source of infection to animals in downstream fields (Radostit et al., 2000). The open air life, which wild animals lead, renders them less likely to become infected with Tubercle bacillus (Ghosal, 1934). Therefore, present paper reports a rare incidence of tuberculosis in a free ranging barking deer (*Muntiacus muntjak*) from Gondia District.

Methodology

A male barking deer (*Muntiacus muntjak*) of approximately 3-4 months was rescued by the State Forest Department, Gondia. After few days, it died and was brought to Department of Pathology, Nagpur Veterinary College, Nagpur for the post mortem examination. Lung tissues were collected for histopathological examination. Routine paraffin embedded tissue sections were examined after H. E. staining.

Results and Discussion

When the animal was presented for the post mortem examination the general condition of the carcass was noted to be emaciated and anaemia was prominent. Post mortem examination revealed enlargement of superficial lymphnodes which is in agreement with Tanwar et al. (2001), who reported enlargement of superficial lymph nodes in the spotted deer suffering from tuberculosis. Both the lungs contained large number of nodules of the size of mustard seed which is in concurrence with Basak et al. (1975), who found grayish white nodules filled up with cheesy materials of various sizes ranging from 1-3 centimeter in diameter. Bronchial lymph nodes were also highly enlarged. Histopathological examination of the lung tissue revealed presence of tubercles surrounded by fibrous capsule which is

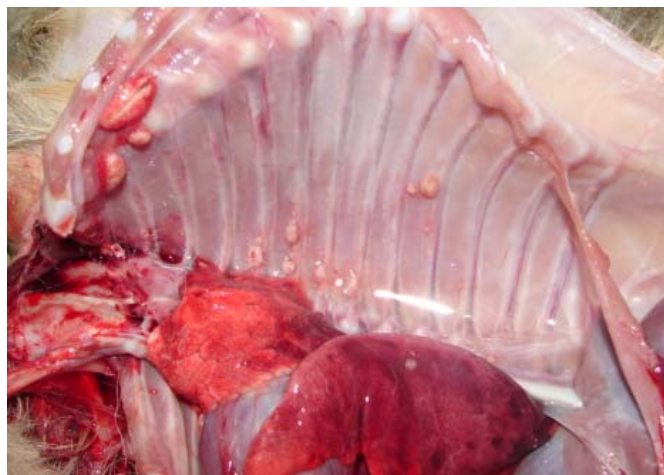


Figure 1. Tubercles in the thoracic cavity (photograph by Bahar Baviskar)

also reported by Tanwar et al. (2001) and Basak et al. (2001). Tuberculosis in deer family is not uncommon. Rathore & Khera (1983) have reported tuberculosis in 17 deers from fifteen Zoological Parks, two National Parks, eight Wildlife Sanctuaries and reserve forest from five states. Rao et al. (1982) recorded 12 cases of tuberculosis in 12 spotted deers from Nandankanan zoo. They also found that spotted deers of all ages were affected, the youngest being 5 month old. They reported microscopic lesion akin to those seen in cattle. Mortality due to tuberculosis in barking deer was recorded as 1%, while that in spotted deer was 12% in Nandankanan Zoo.

Conclusion

In recent years, the diseases of wildlife have assumed special significance because of their possible effects on domestic as well as wildlife population and the zoonotic significance. Tuberculosis is a chronic disease of great public health and economic significance. There has been continuous increase in cases in domestic and wild animals not only in Indian Subcontinent but all over the world. The ease and frequency of the spread of tuberculosis from animals to humans in an uncontrolled environment makes this an important zoonotic disease. Therefore, detail investigation of this disease in captive and free ranging wild animals is recommended.

¹Corresponding Author, C/o Post: Sakali, Tal: Yawal, Dist: Jalgaon, Maharashtra 425 302
E-mail: drbaharbaviskar@gmail.com

²Professor and Head, Department of Pathology, Nagpur Veterinary College, M.A.F.S.U., Seminary Hills, Nagpur, Maharashtra 440 006

References

Arora, B. M. (1994). *Wildlife Diseases in India*. Periodical Expert Book Agency. Associated Offest Press, Delhi. First edition, 30pp.

Basak, D. K., A. Chatterjee, M.K. Neogi and D.P. Samanta (1975). Tuberculosis in captive deer. *Indian Journal of Animal Health* 14: 135-136.

Chakraborty, A., D.K. Sharma and B. Chaudhary (1993). Tuberculosis in captive wild herbivores. *Indian Journal of Veterinary Pathology* 17(2): 58-60.

Fox, H. (1923). *Diseases in Wild Mammals and Birds*. Lippincott, Philadelphia.

Ghosal, M.L. (1934). Tuberculosis in a deer. *Indian Veterinary Journal* 10: 43.

Liston, W.G. and M.B. Soparkar (1924). Bovine tuberculosis in India. An outbreak of tuberculosis among animals in the Bombay Zoological Gardens. *Indian Journal of Medical Research* XI: 671-680.

Radostits, O.M., C.C. Gay, D.C. Blood and K.W. Hinchcliff (2000). *Veterinary Medicine - A Textbook of the Diseases of Cattle, Sheep, Pig, Goats and Horses*. W.B. Saunders publication. Ninth edition, 909pp.

Rai, B.N. and K.P. Chandrasekharan (1958). A case of tuberculosis in a Giraffe (*Giraffe camelopardalis*). *Indian Veterinary Journal* 35: 221-224.

Rao, A.T. (1989). Disease of wild ruminants in captivity with special reference To India. *National Symposium on Pathology and Biotechnology in the diagnosis of diseases of livestock and poultry* held at IVRI, Izantnagar, U.P.

Rao, A.T., L.N. Acharjyo and B.C. Nayak (1982). Tuberculosis in some ungulates and primates at Nandankanan Biological Park. *Indian Journal of Pathology and Microbiology* 25: 199-202.

Rathore, B.S. and S.S. Khera (1983). Infectious and parasitic diseases recorded in wild animals in captivity and free living state. *Indian Journal of Animal Health* 22: 1-5.

Sen Gupta, M.R. (1974). A preliminary report on diseases and parasites of zoo animals, birds and reptiles. *Indian Journal of Animal Health* 13: 15-24.

Singh, B., N. Singh, M.D. Chandra and D.V. Joshi (1981). Causes of Mortality of some zoo animals. *ZBL. Veterinary Medicine* 28(B): 596-602.

Tanwar R.K., A.P. Singh, S. Kachawa and M.M. Mali (2001). Tuberculosis in a spotted deer (*Axis axis*). *Intas Polivet* 2(II): 249-250.

Acknowledgement

The authors are thankful to the Associate Dean, Nagpur Veterinary College, Nagpur for providing the necessary facilities.