

**Clinico-Pathological and Microbiological Findings of Infectious Canine Tracheobronchitis Caused by *Bordetella bronchiseptica* Infection in Two Pups**

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*Bordetella bronchiseptica* is a Gram negative coccobacillus causing infection in both humans and animals. It infects the respiratory epithelium together with adenovirus and/or parainfluenza virus causing tracheobronchitis in dogs, also known as kennel cough. This organism transmits via direct contact with infected animals, contaminated fomites and aerosols. A dry hacking cough is the most consistent sign but it can progress into severe respiratory distress and death in immunocompromised animals. Although antibiotics are indicated, it is found to be ineffective at the early stage of the infection.

*Bordetella* infection, though prevalent in other countries, has not been recorded in Sri Lanka. This investigation was done on necropsy samples of two imported pups. Both pups were females of Saint Bernard and American Bully breeds and at the time of death they were 3 and 4 months old respectively. Clinical presentation at admission to the Veterinary Teaching Hospital was non-productive cough, serous nasal discharge and wheezing. The pups did not respond to the treatment and died after a few days.

Similar gross lesions were seen in necropsies of both pups, including pulmonary oedema, multiple patchy haemorrhages, serosanguinous pleural effusions and inflammatory changes in the trachea and bronchi. Histopathology revealed homogenous fluid accumulation in alveoli, massive infiltration of neutrophils in lung alveoli and diffuse haemorrhages with severe diffuse suppurative bronchopneumonia, hepatic and renal congestion. A pure culture of Gram negative haemolytic coccobacillus (*Bordetella bronchiseptica*) was isolated in sheep blood agar, and pale pinkish hue colonies in MacConkey agar. The isolated organism was negative for: acid production in the slant and butt of TSI agar; H<sub>2</sub>S or gas production in TSI agar. The culture was positive for oxidase, catalase, urease, citrate, nitrate reduction tests and negative for the indole test.

According to the culture and biochemical characteristics and microscopic appearance of the isolated organism, it was presumptively identified as *Bordetella bronchiseptica*. The isolation of this pathogen together with the clinicopathological findings were consistent with those of infectious canine tracheobronchitis caused by *Bordetella bronchiseptica*.

We conclude that there is a risk of introducing new infections to our local dog population from improperly screened and unquarantined imported dogs. This study shows the importance of early diagnosis of infectious canine tracheobronchitis in pups, because they are relatively immune-compromised due to immature immune systems and because it is highly contagious and zoonotic for immunocompromised humans.