

Goat Melioidosis in Taiwan: Clinical and pathological findings

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Abstract:

The first outbreak of animal melioidosis occurred in a government goat farm located on the southern Taiwan during the rainy seasons in 2006. For the farm was opened to tourists, it raised public health risk issues and caused a great turmoil consequently. Also, because the test-and-slaughter control measure was implemented, it caused huge economic losses. After 2006, all suspected dead goats were sent for definite diagnosis in our laboratory by various examinations. The 55% of the cases was culture confirmed infecting the *Burkholderia pseudomallei* (Bp). These goats showed clinical signs including fever, dullness, anorexia, diarrhea, extreme emaciation, coughing, nasal discharge, respiratory distress, lameness, swollen testicles, mastitis, and abortion. The majority of the incidence concentrated from June to December, when wet season prevails with frequent typhoons in southern Taiwan. The age groups susceptible to infection ranged from around 1-month-old to 10-year-old among various goat breeds. At necropsy, single or multiple yellowish-white and creamy purulent nodules/abscesses were found on various organs including the lung, spleen, liver, lymph nodes, mammary gland, and kidneys. Thoracic and abdominal aortic aneurysm rupture was also noticed. Immunohistochemistry results revealed that Bp antigen present not only in phagocytic cells but also in parenchymal cells. We isolated the bacteria from nasal discharge, urine, milk, and feces of infected animals and detected the genomic markers by real-time PCR from water, soil, and local hay. By using multi-locus sequence typing (MLST) method, ST57-ST58-ST91 and one novel ST genotype were identified from a total of 30 isolates. Among the above mentioned 4 genotypes, the ST58 type deserves more concerns because it had been isolated from human melioidosis cases in Taiwan. Although 3 out of 4 genotypes were previously reported from human cases, none of the farm workers or visitors got infected in the past 6 years.

Key words: Goat melioidosis, Aortic aneurysm, Multi-locus sequence typing (MLST)