Y. pseudotuberculosis Isolation from Cockatoo

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Y. pseudotuberculosis causes infections in humans and animals. Different kinds of healthy animals such as pig, dog, cat, hare, chinchilla and rat, as well as meat and water [3] have been recognized as sources of human infection with Y. pseudotuberculosis.

Tsubokura et al. [4] reported the characteristics of distribution and some features of Y. pseudotuberculosis in Japan. They pointed out that the organisms were frequently detectable in birds in Europe, while none had been isolated in birds in Japan.

Quite recently, however, Hamasaki et al. [1] isolated 3 strains (1.0%) of Y. pseudotuberculosis from feces of black-faced buntings and a pied wagtail, and Kaneuchi et al. [2] also isolated 3 strains (1.3%) of the organism from feces of seagulls, while Kanzaki et al. (106th Meeting of the Japanese Society of Veterinary Science, 1988) reported the death of 2 birds from Y. pseudotuberculosis infection in a zoo. Hence, it is suggested that birds infected with Y. pseudotuberculosis may not be so infrequently distributed in Japan.

This paper presents information on the isolation of Y. pseudotuberculosis from a pet bird in our laboratory.

In 1988, two birds, cockatoo (Cacatua galerita) and cockatiel (Nymphicus hollandicus), were brought to our laboratory for examination of Chlamydia psittaci infection. The owner of these birds developed a fever from an unknown cause, and was suspected to have C. psittaci infection. The birds were observed for 5 days, but no clinical symptoms were noticed. No macroscopic pathological changes were observed, and no Chlamydia was isolated. Antibodies to Chlamydia were also not detected in either the patient or the birds.

Isolation of enteropathogenic bacteria such as Salmonella and Yersinia, which cause fever in humans was carried out from the intestinal contents of the birds. A Yersinia organism had been isolated from the cecal contents of the cockatoo by the phosphate buffered saline cold enrichment method.

Biochemical, pathogenic and serological properties of the isolated organism are shown in Table 1. The isolated organism was identified as Y. pseudotuberculosis and serogrouped as 3. It has pathogenic properties such as Ca²⁺ dependency, autoglutination and pathogenic plasmid. Six ddy mice were inoculated with the organism at 10⁷ CFU intraperitoneally. All mice died on the 8th day after inoculation, and the inocula were recovered from the visceral organ of the mice.

It is unknown whether or not the patient was infected with Y. pseudotuberculosis, since bacteriological and serological examination has been done insufficiently on the patient. The bacteria-positive cockatoo was brought to Japan 3 years ago from Southeast Asia. Because intestinal colonization of the bacteria is not known to persist in the cockatoo for more than 3 years, the cockatoo might have been infected in Japan.

Although we reported previously that Y. pseudotuberculosis had not been isolated from birds in Japan [4], Kaneuchi et al. [2] and Kanzaki et al. (106th Meeting of the Japanese Society of Veterinary Science, 1988) reported the detection of the bacteria in free-living wild birds and in zoohold birds in Japan. The present study demonstrated that the Y. pseudotuberculosis isolated from
a household pet bird had the same biochemical and pathogenic characteristics as the isolates from humans. Consequently, future investigations are necessary to clarify how important role do pet birds play as a source of human infection with *Y. pseudotuberculosis*.

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references