



Brucella surveillance in stranded marine mammals from the south of the North Sea. Is the marine wildlife a potential reservoir of brucellosis for humans?

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Brucellosis is a zoonotic disease affecting both animals and humans. Since marine *Brucella* infections were reported in humans, marine wildlife has been considered as a potential reservoir of this pathogen. Until now, three natural infection cases of marine brucellosis have been reported in humans. These isolates belonged to the sequence type (ST) 27, a genetic profile that was only found in marine mammals from the Pacific Ocean. These findings suggest the importance of studying the transmission of marine brucellae that until now is not clearly understood. Since 1991 a surveillance programme of stranded marine mammals from the continental coastline of the North Sea (mostly Belgium, northern France and some from the Netherlands) has been implemented. Animals have been analysed by the Marine Animals Research and Intervention Network (MARIN) in Belgium, and bacteria detection and genotyping was made at the Veterinary and Agrochemical Research Center. In total, 462 organ samples from 203 animals were investigated by culture analysis. *Brucella* spp. was isolated in 7.4%, (15/203) of the stranded animals. The isolates were recovered from harbour porpoises (*Phocoena phocoena*) (6/136), common dolphin (*Delphinus delphis*) (1/1) and harbour seals (*Phoca vitulina*) (5/42) and grey seals (*Halichoerus grypus*) (3/13). *B. pinnipedialis* and *B. ceti* were detected in pinnipeds and cetaceans, respectively. *Brucella* spp. was mainly found in lungs (n=9) and bronchial lymph nodes (n=6) in infected animals. Under microscope, positive immunohistochemical staining was obtained in tissues and lesions. In conclusion, *Brucella* infection was, often, found in the respiratory system in stranded animals. Different genetic profiles were identified by Multi Locus Variable Number Tandem Repeats Analysis (MLVA), demonstrating strain variability in *Brucella* spp. circulating in marine mammals. Further investigations are necessary to establish the biohazard risk of marine *Brucella* spp.