

Letters

WILDLIFE DISEASE

Group B *Salmonella* in lungworms from a harbour porpoise (*Phocoena phocoena*)

FURTHER to the paper in *Veterinary Record* describing the prevalence of a host-adapted group B *Salmonella enterica* in harbour porpoises (*Phocoena phocoena*) (Davison and others 2010), we wish to report the isolation of the same group B *Salmonella enterica* serovar from the lungworm species *Pseudalius inflexus*, removed from an adult female harbour porpoise found dead at St Agnes, Cornwall, in February 2009.

The animal was submitted to Veterinary Laboratories Agency (VLA) – Truro for postmortem examination, and was in good body condition with some scavenger damage. Postmortem examination revealed injuries consistent with attack by bottlenose dolphins (*Tursiops truncatus*), including multifocal rake marks in the epidermis, with spacing between 9 and 15 mm, extensive subcutaneous and intra-blubber haemorrhage, separation of blubber from the underlying musculature, separation of muscle from the lumbar vertebrae, and multiple fractures to the mandible, rib and transverse processes of the lumbar vertebrae (Ross and Wilson 1996). In addition, there was moderate infection of the bronchi with lungworms identified as *P inflexus*, pulmonary consolidation and multifocal caseous abscesses within the lung parenchyma containing coiled nematodes that were not identified. A *Salmonella* species was isolated from lung tissue on blood agar and MacConkey's agar in moderate mixed growth after incubation

at 37°C in a capnophilic atmosphere for 24 hours.

A number of *P inflexus* lungworms were removed from the bronchi, washed in sterile saline, rinsed in 70 per cent methylated spirits and macerated in sterile saline. The resulting homogenate was then cultured on to blood agar and MacConkey's agar and incubated at 37°C in a capnophilic atmosphere for 24 hours. A pure and heavy growth of a *Salmonella* species was produced from cultures originating from the lungworms. Both isolates were identified as a group B *Salmonella* species by the slide agglutination test to determine the presence of flagella and/or somatic antigens; both isolates agglutinated with somatic 'O', 04 and weakly with flagella 'H' antisera (VLA). The isolates were confirmed as *S enterica* 4,12:-:- non-motile in the lung and *S enterica* 4,12:-:- weakly motile in the lungworms by the National Reference Laboratory, VLA – Weybridge.

Foster and others (1999) suggested that the disproportionate frequency of recovery of *Salmonella* 4,12:a- from the lungs of porpoises as opposed to the gastrointestinal tract may be due to parasites of the family Pseudalidae acting as vectors for their transmission. Lungworm species have also been suggested as a means of transmission for *Brucella* species in Pacific harbour seals (*Phoca vitulina richardsi*) (Garner and others 1997), and the isolation of *Brucella* species from *P inflexus* lungworms

(Perrett and others 2004, Dawson and others 2008) suggests that this parasite could act as a potential means of transfer of bacterial infections in harbour porpoises.

Little is known of the life cycle of many species of lungworm, including *P inflexus*. However, Lehnert and others (2010) used molecular techniques to demonstrate the larvae of *P inflexus* in the European plaice (*Pleuronectes platessa*), suggesting that there is an intermediate host involved in the transmission of this nematode.

This case reinforces the suggestion that parasites should be considered as a potential means of transfer of zoonotic bacterial infections in marine mammals.

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