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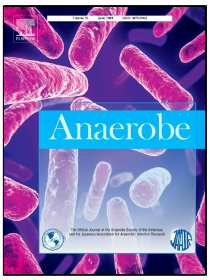


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# Type C/D botulism in the waterfowl in an urban park in Italy

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**Abstract**

This report describes an outbreak of botulism occurred among a free-living population of mallards (*Anas platyrhynchos*) and geese (*Anser anser*) in an urban park. Mortality rate among investigated population was 86,8% (118 dead out of 136). Twenty-seven carcasses were collected for macroscopic examination and screened for microbiological, virological, toxicological investigations. A sick mallard was captured and neurological symptoms were observed. No causative agent of viral avian diseases was found in the examined animals and screening for environmental neurotoxic substances proved negative as well. In contrast, microbiological cultures from specimens tested positive for botulinum toxin-producing clostridia. Blood serum and fecal extract of the sick mallard proved positive for botulinum neurotoxin in the standard mouse protection test using reference *Clostridium botulinum* type C antitoxin. Gene content of cultured strains showed a mosaic composition of *bont*/C and *bont*/D sequences, defining them as type C/D chimeric organisms.

**Keywords**: Anatidae, Avian botulism, *Clostridium botulinum* type C/D, Toxin typing, Water birds