

禽類肉毒桿菌毒素中毒之診斷與病例報告

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摘要

禽類肉毒桿菌毒素中毒又稱軟頸症或西方鴨病，為食入肉毒桿菌分泌之毒素造成之麻痺型癱瘓甚至死亡之疾病。肉毒桿菌可產生 A~G 等 7 種不同型別的神經毒素，於禽類較常發生的為 C 型或 C/D 型毒素中毒，而禽類 A 型、D 型或 E 型肉毒中毒病例亦曾有報告。禽類肉毒桿菌毒素中毒初期出現腳部麻痺，接著由腳部推展至雙翼、頸部與眼瞼部，最後造成心臟與呼吸衰竭而死亡，本病死亡之鳥類剖檢時，大多無明顯之肉眼與顯微病變。確診肉毒桿菌毒素中毒需由病禽血清中或胃腸道內容物中證實是否含有肉毒桿菌神經毒素，可利用小鼠進行腹腔注射加以證明檢體中是否有肉毒桿菌神經毒素存在，並進行中和試驗以檢測神經毒素之型別，後來更發展出利用聚合酶鏈鎖反應偵測肉毒桿菌或鑑定肉毒桿菌神經毒素之基因型別。本實驗室於 91 至 106 年共接獲 56 例要求檢測肉毒桿菌毒素檢體，以水禽類野鳥檢體為主，其中 21 例(37.5%)為肉毒桿菌毒素或毒素基因陽性，在此我們並進行於 104 年發生之 2 例野鳥之 C/D 型肉毒桿菌毒素中毒病例報告。

Diagnosis and case reports of avian botulism in poultry

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Abstract

Avian botulism, also known as limberneck and Western duck sickness, is a paralytic, often fatal disease found in birds. The disease results from the ingestion of toxins produced by the bacterium *Clostridium botulinum*. Seven types of botulinum neurotoxins, designated as types A through G, have been identified. Almost all outbreaks in poultry are caused by the type C or a mosaic type C/D neurotoxin, although types A, D or E can also be involved. Clinically, paralyzed legs are usually one of the first symptoms to be observed in cases of avian botulism, with paralysis later spreading to the wings, neck, and eyelids. Death thus usually results from dehydration, electrolyte imbalance, and cardiac/respiratory failure. Typically, there are no characteristic gross or microscopic lesions in birds dying of botulism. The most reliable test for avian botulism is the mouse inoculation test, although the polymerase chain reaction technique is also successfully applied in the detection of *Clostridium botulinum* and for the differentiation of the various neurotoxin genes. From 2002 to 2017, our laboratory received 56 botulism-suspected poultry cases. Most of these suspected cases came from wild birds, especially waterfowl. Twenty-one cases (37.5%) were positive for botulinum toxins or the presence of the neurotoxin genes. We also encountered two cases of mosaic type C/D botulism in wild birds in 2015.