

The Fatal Neurologic Illness of the Fourth Duke of Richmond in Canada: Rabies

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Summary

Charles Lennox (1764-1819) was the fourth Duke of Richmond. He had a distinguished career in the British military, and in 1818, he was appointed the sixth Governor-in-Chief of British North America (pre-Confederation Canada). He played a role in the founding of McGill University. On June 28, 1819, while on a tour of military settlements, a pet fox at Fort William Henry bit his hand. Two months later, he developed an illness with pain in his shoulder and throat, hallucinations, dysphagia, and hydrophobia. He died on August 28, 1819. His illness was the first recorded case of rabies in Canada.

Sommaire

Charles Lennox (1764-1819) a été le quatrième duc de Richmond. Il a mené une brillante carrière dans l'armée britannique et, en 1818, il est devenu le sixième Gouverneur en chef de l'Amérique britannique (le Canada d'avant 1867). Il a participé à la fondation de l'université McGill. Le 28 juin 1819, alors qu'il faisait une tournée des installations militaires au fort William-Henry, il a été mordu à la main par un renard apprivoisé. Deux mois plus tard, il était atteint de douleurs à l'épaule et à la gorge, d'hallucinations, de dysphagie et d'hydrophobie. Il est mort le 28 août 1819. Sa maladie est le premier cas de rage consigné au Canada.

Charles Lennox, the fourth Duke of Richmond (Figure 1), was appointed Governor-in-Chief of British North America (pre-Confederation Canada) in 1818. He died at the age of 54 near Richmond, Ont., after an acute neurological illness, which was the first recorded case of rabies in Canada.¹

Charles joined the militia in England as a boy and became a lieutenant at the age of 14. At the age of 24, he became a captain in the Coldstream Foot Guards. His commander was the Duke of York, who was the second son of George III. The Duke of York was a political enemy, and he made disparaging remarks about the courage of the Lennox family. Charles challenged him to a duel using pistols.² The ground was measured at 12 paces

on Wimbledon Common. Charles fired first and grazed the Duke of York's curl with a ball. The Duke of York subsequently fired into the air, and declared that he bore his opponent no animosity. Both Charles and the Duke of York gained honor from this encounter (Figure 2). Charles later had a second duel with a pamphleteer who had libelled him. This resulted in a minor injury to the pamphleteer.

Charles was elected to a seat in the House of Commons in 1790, and he was re-elected in 1796, 1802, and 1806.² He became the fourth Duke of Richmond after the death of his uncle in 1806. The first Duke of Richmond was the illegitimate son of Charles II and his mistress, the Duchess of

Portsmouth. The fourth Duke of Richmond was Lord-Lieutenant of Ireland between 1808 and 1813. He was promoted to General in 1814. In May 1818, he became the sixth Governor-in-Chief of British North America, and he arrived in Quebec in July 1818. He did not seek this position, but he willingly accepted it. While in office, he asked Anglican bishop Jacob Mountain to draft plans for a university to be founded under the auspices of the Royal Institution with the aid of a bequest from the merchant James McGill. This university became McGill University.²

In 1819, the duke undertook a tour of the military settlements in Upper and Lower Canada. On June 28, 1819, he visited Fort William Henry (now Sorel, Que.), where the rabies exposure likely occurred (Table 1). Accounts of this have been written by Dr. Benjamin Silliman,³ a Yale chemistry professor, and the duke's son, Lord William Pitt Lennox.⁴ The duke was likely bitten on the hand by a soldier's pet fox. This may have occurred while he was separating the fox and a dog, or while he was patting or playing with the fox. The dog remained well for years.⁵

The duke continued on his tour and visited York (Toronto), Niagara (Niagara-on-the-Lake), Drummond Island (now in Michigan), Kingston, and Perth. The historical details of the trip were recorded in the journals of Colonel Francis Cockburn and Major George Bowles,⁶ who accompanied the duke.

On August 24, 1819, while travelling in Upper Canada between Perth and Richmond, which had been named in his honor, the duke complained of right shoulder pain and pain in his throat (Table 1). He developed insomnia, fatigue, and anorexia. On August 26, he had difficulty swallowing, and he was seen by Assistant Surgeon Collis, who was the only doctor in the vicinity. Collis recommended a gargle. Attempts to swallow liquids had



Figure 1. Fourth Duke of Richmond, Charles Lennox 1764-1819. Oil painting by John Hoppner from 1809, which was done 10 years before his death from rabies (with permission from Goodwood House by courtesy of the trustees).

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Figure 2. An etching of Charles Lennox by John Kay from 1789. He is in uniform as a colonel after his duel with the Duke of York. (From Kay J. A series of original portraits and caricature etchings. Edinburgh: Adam and Charles Black, 1877.)

a "convulsive" effect on the duke causing spasms in his throat, as did the sight of a basin of water. Because of this, he refused to inspect anything in sight of the Jock River. Bowles wrote that the duke said "it was fortunate he was not a dog as he should certainly be shot for a mad one."⁶ Cockburn wrote "the symptoms he had witnessed the preceding day at dinner proceeded from hydrophobia."⁶ On August 27, the duke could not continue travel by canoe on the Jock River because the effect of passing through the water was more than he could bear, and he ordered that his canoe return to shore. He had difficulty crossing ravines containing water.

The duke and his party stopped at Chapman's farm, which was about three miles from Richmond. The duke immediately went into the barn, which was 50

yards farther from the river than the house. He complained of an unpleasant odor. He attributed the odor to an animal, generally a beaver, and repeatedly requested that it be thrown overboard. There were paroxysmal episodes in which he experienced pain and delirium, which were separated by lucid intervals. He dictated messages and remembrances to his family and friends, which Bowles recorded. Surgeon Collis was again summoned and he performed venesection of about two pints, which provided only temporary relief. The duke was also given laudanum (an alcoholic tincture of opium) in peppermint water. He had marked perspiration, which required a change in his linen. On the morning of August 28, he became stuporous, and a lot of saliva collected in his throat and mouth. He died on the morning of August 28, 1819, and was buried in the Cathedral of the Holy Trinity in Quebec City. A memorial cairn was later erected on the site of Chapman's farm.

Rabies has existed since antiquity. The earliest reference may have been in the pre-Mosaic Eshnunna Code of Mesopotamia in about 2300 B.C.⁷ Aristotle, Hippocrates, and Celsus referred to rabies.^{8,9} Dog rabies appeared in England in 1734 to 1735, and there was a large fox outbreak in France starting in 1803.⁹ Dog rabies was present in the colonial states of North America in 1785.⁹ The pathogenesis of rabies was poorly understood in the early 19th century. In 1804, Zinke showed that the infective agent was transmitted in saliva, by experimentally painting saliva from a rabid dog into incisions of healthy animals.⁹ Cauterization of wounds with heat or chemicals was a common treatment used to prevent rabies after a bite exposure. Louis Pasteur developed the first rabies vaccine, and Joseph Meister, a boy who had been bitten by a rabid dog, was the first patient immunized against rabies in 1885.¹⁰

There is overwhelming evidence that the Duke of Richmond died of rabies. He was exposed to rabies virus from a fox bite. It was not recognized as a rabies exposure, and the duke did not receive any local wound treatment. The dog could not have been the source of the infection, because it stayed healthy. The duke developed an acute neurological illness that was fatal after an incubation of about two months, which is typical in rabies.¹¹ The

TABLE 1 CLINICAL FEATURES OF THE DUKE OF RICHMOND'S ILLNESS IN 1819

Date	Clinical feature
June 28	Probable fox bite to hand
August 24	Pain in right shoulder and throat
August 25	Fatigue, insomnia, and anorexia
August 26	Difficulty swallowing, pharyngeal spasms (hydrophobia) on attempts to drink and at the sight of water
August 27	Severe hydrophobia, olfactory hallucinations, episodes of generalized arousal
August 28	Hypersalivation and drooling, unresponsive, death

right shoulder pain was probably due to infection in the dorsal root ganglia¹¹ of his bitten arm. He had dysphagia and hydrophobia, which are associated with contractions of the diaphragm and other inspiratory muscles, and generalized arousal. Hydrophobia in rabies is likely due to selective infection of neurons that inhibit the inspiratory motor neurons in the region of nucleus ambiguus.¹² The duke had olfactory hallucinations (hallucinations have been described during generalized arousal in rabies).^{11,12} He also had signs of autonomic dysfunction. He had preservation of consciousness until late in the disease.

Rabies is an unusual disease in royal individuals, and the death of the Duke of Richmond was a tragic event. Despite a high prevalence of wildlife rabies, there was only one other recorded case of human rabies in Canada in the 19th century,¹³ and 21 cases to date in the 20th century.¹⁴

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