

Epidemic Kerato-Conjunctivitis

in the

71st Ohio Volunteer Infantry

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EPIDEMIC KERATO-CONJUNCTIVITIS IN THE 71ST OHIO VOLUNTEER INFANTRY

Cases of inflammatory and infectious diseases of the eyes during the Civil War were initially categorized as ophthalmia and iritis, then later designated collectively as “Conjunctivitis” after June 1862. A total of 74,643 cases were reported by surgeons in the Northern armies by the time the war was over. Environmental exposures such as wet and cold weather were excluded as causative factors of epidemic conjunctivitis very early in the 1860s.

Certain geographic locations were thought to be breeding grounds for epidemics of eye disease. Between 1861 and 1865 the average annual prevalence of ophthalmia in the Army of the Potomac was 17.5 per one thousand men; in the Department of the Gulf it was 37.0 per thousand; in the Department of New Mexico 47.5 per thousand; and, in the Department of the Northwest 85.0 per thousand. The average annual rate of prevalence for all Northern armies was 33.5 cases per thousand soldier strength.

In some locations outbreaks were associated with sun glare from sand or snow, and dust. However, these cases were self limited and resolved quickly. Epidemic occurrence of ophthalmia within a camp was often attributed to constitutional conditions of a malarial nature, or some type of “miasmatic” disease. In isolated cases in which a single individual was so afflicted with persistent ophthalmia he was often felt to suffer a “rheumatic, or syphilitic taint”. The “scorbutic taint”, or scurvy, was sometimes reported as the cause in both epidemics and in isolated cases.

Traditional contemporary remedies for what was known as sore eyes depended upon the perceived cause in each case. Those felt to be malarial were treated with some reported success using quinine. F. H. Hamilton, as Medical Inspector at Nashville, described an epidemic conjunctivitis among troops of the 71st Ohio and 83rd Illinois garrisoned at Fort Donelson in late 1862 and in the first part of 1863. He attributed this difficult epidemic to scurvy:

*“There was but little sickness among the men of the 171st (sic) and 83rd Ohio (sic) at Dover, near Fort Donelson, and no well defined case of scurvy; but there were about sixty cases of ophthalmia. The disease proved very obstinate and continued to spread notwithstanding the isolation of the cases and the adoption of other prophylactic means. I ascribed it to a want of vegetable food.”*¹

Despite attributing this epidemic to scurvy, reestablishing a nutritious diet did not appear to improve the ocular disease that afflicted the boys of the 71st Ohio and 83rd Illinois regiments. So much for the scurvy theory.²

1 The Medical and Surgical History of the War of the Rebellion. Volume 1. Part III. Government Printing Office. Washington. 1870. Page 851. Dr. Hamilton incorrectly referenced the subject regiments as the 171st Ohio and 83rd Ohio in his report. The regiments he meant to designate at Fort Donelson were actually the 71st Ohio and the 83rd Illinois.

Soldier reports abound regarding the epidemic conjunctivitis in the 71st Ohio in their diaries and letters and years later in pension applications. Robert McConnell, a private in Company B, wrote home from Fort Donelson in April 1863 how most of his company were well except for a couple fellows: “Amos North is nearly blind with the Sore Eyes...Henry Keener he has the Sore Eyes”.³ On May 5, 1863, writing from hospital at Fort Donelson where he was afflicted with diarrhea, McConnell described other men in his company who suffered from conjunctivitis: “Richard Brandon is here blind with the Sore Eyes...John Smith went home this afternoon discharged his eyes have been sore about six months...”⁴ Another member of the 71st, Private John M. Piles of Company E, complained of sore eyes for years during and after the war, and was reported to have worn dark glasses after coming back from the hospital in 1862.⁵

John P. Altick, a private in Company C, first developed sore eyes “on the first day of September in 1863, while in camp at Gallatin, Tenn...exposed to the sun and rain.” This affliction with conjunctivitis lasted until John’s death in 1930 at the age of 89. After the war Amos North, who himself had suffered the disease, supported Altick’s pension in an affidavit attesting that while he (Amos) was in charge of a hospital ward at Gallatin he had treated John for “granulated sore eyes” in 1863. Amos North was a neighbor and farmer who lived near Pleasant Hill in Miami County not far from John Altick after the war. The Captain of Company C, Joshua Babb, in 1885 remembered that “Some of the strongest men I had contracted sore eyes...most of them at Fort Donelson.”⁶

The existence of the epidemic of sore eyes, or kerato-conjunctivitis⁷ which so affected the men of the 71st Ohio is well established by first hand accounts and in the official medical records of the Civil War. Some men recovered and others developed chronic disease, but it appears the

2 Ibid. pages 851 and 853.

3 Toops, Ronald E. The McConnell Letters. The Civil War Letters of Robert McConnell. Private printing 1975. Page 52.

4 Ibid. page 60.

5 John M. Piles Pension File, US National Archives.

6 Military Service and Pension File of John P. Altick, Co. C, 71st Ohio. US National Archives. Washington, D.C.

7 Kerato-conjunctivitis is an inflammatory and/or infectious condition of the eye involving the conjunctiva and cornea. When only the cornea is involved the condition is known as keratitis.

condition was persistent and did not resolve within a few days or weeks as one would expect with a simple case of conjunctivitis, or “pink eye” as it is vernacularly known. Rather, it went on for months, or even years, caused fairly severe visual debilitation, spread through camp and hospital and was apparently resistant to any known treatment.

The suggestion by Dr. Hamilton that the condition may have been caused by scurvy, a condition resulting from Vitamin C deficiency, is possible, except the condition’s poor response to an improved diet does not reassure of that hypothesis. Certain rheumatologic diseases may cause eye diseases and ocular manifestations, but they do not occur in epidemics in regiments. It is likely instead that the epidemic of eye disease in the 71st Ohio was spread by a virulent bacteria or virus capable of causing chronic disease. Certain bacteria are known to cause chronic conjunctivitis or keratitis, including Staphylococcal and Streptococcal strains.

Some serotypes of Chlamydia trachomatis may also cause a chronic kerato-conjunctivitis. In fact globally it is probably the most important bacterial cause of chronic eye diseases, afflicting millions. Chlamydia trachomatis often establishes endemic roots in countries with poor hygiene, poor sanitation, and tainted water supplies (which aptly describes many Civil War camps), resulting in an epidemic chronic kerato-conjunctivitis known as trachoma. It scars the cornea and often leads to blindness.

Henry Williams in 1881 reported that the feeling among most authorities was that trachoma was a common form of conjunctivitis that was typically characterized by the term “granulation”.⁸ At least in the case of John Altick his chronic sore eyes were repeatedly described by his physicians as being granulated. Another term, follicular conjunctivitis, or trachoma, was recognized by Fuchs in 1892 as a difficult disease with chronic manifestations and requiring months or years of treatment.⁹ Boldt in 1901 distinguished follicular conjunctivitis from trachoma as separate entities, although strikingly similar. He documented the widespread prevalence of trachoma in European armies in the 19th century and quite rightly attributed its epidemic proliferation in military situations to “a low state of civilisation, want of cleanliness, and overcrowding.”¹⁰

Gonococcal organisms causing gonorrhea can cause conjunctivitis. We see this occur in isolated cases, but it is unlikely and improbable that it would cause a regimental epidemic, even in some

8 William, Henry W. The Diagnosis and Treatment of Diseases of the Eye. Houghton, Mifflin & Co. Boston The Riverside Press. Cambridge. 1881. Pages 78-79.

9 Fuchs, Ernest. Text-Book of Ophthalmology, translated from the 2nd German edition by A. Duane. D. Appleton & Company. New York. 1892. Pages 79-80

10 Boldt, J. Trachoma. Translated from the German. Hodder & Stoughton. London. 1904. Refers to chapters “Aetiology” and “Diagnosis”.

cities such as Nashville where prostitution thrived during the war. Nonetheless, gonorrhea was very common in soldiers in the Civil War.

The epidemic of kerato-conjunctivitis, or chronic granulated sore eyes, that ravaged the 71st Ohio was very likely bacterial and associated with poor camp and hospital hygiene and close quarters, allowing the causative organism to spread rapidly.¹¹ Lack of knowledge about infectious disease prevention enabled this. Surgeons, nurses and hospital stewards may have unwittingly spread the disease with their own contaminated hands. Examining the eyes of patient after patient in the hospital without even simple hand washing could have gone a long way in promoting an epidemic.

It is of course impossible to say exactly what caused the sore eyes in the men of the 71st. Very likely it was bacterial. Because of its granular description, because of the severity of illness apparently induced, and because of the chronic morbidity of the ocular disease prevalent in the regiment, I feel *Chlamydia trachomatis* was the most likely culprit. Endemic trachoma may rapidly become epidemic especially in closed proximities such as a regimental camp or hospital. Trachoma today is the leading cause of epidemic infectious eye disease around the world. What we know of trachoma's epidemic virulence best fits the clinical descriptions left to us from the 71st Ohio.

11 Woodward, Joseph Janvier. *Outlines of the Chief Camp Diseases of the United States Armies*. J. B. Lippincott & Co. Philadelphia. 1863.