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Abraham Lincoln's Gettysburg Illness

Armond S Goldman and Frank C Schmalstieg Jr

Summary: When Abraham Lincoln delivered the Gettysburg Address, he was weak and dizzy; his face had a ghastly colour. That evening on the train to Washington, DC, he was febrile and weak, and suffered severe headaches. The symptoms continued; back pains developed. On the fourth day of the illness, a widespread scarlet rash appeared that soon became vesicular. By the tenth day, the lesions itched and peeled. The illness lasted three weeks. The final diagnosis, a touch of varioloid, was an old name for smallpox that was later used in the 20th century to denote mild smallpox in a partially immune individual. It was unclear whether Lincoln had been immunized against smallpox. In that regard, this review suggests that Lincoln had unmodified smallpox and that Lincoln's physicians tried to reassure the public that Lincoln was not seriously ill. Indeed, the successful conclusion of the Civil War and reunification of the country were dependent upon Lincoln's presidency.

Perhaps the most famous address given by an American in the 19th century and arguably in the history of the United States of America was Abraham Lincoln's Gettysburg Address. The year was 1863. The nation was in the midst of a devastating civil war that led to the pivotal battle at Gettysburg, Pennsylvania.¹ After a bloody struggle in the first three days of July, Robert E Lee's Confederate Army of Northern Virginia was defeated and nearly destroyed by the Union Army of the Potomac led by George Gordon Meade. By 12 July, Lee and the remnant of his army barely escaped over the swollen Potomac River to the South.¹ Consequently, the war continued for two more years.

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For many weeks following the conflict, the battlefield at Gettysburg was littered with the dead and wreckage from both armies. Little by little the bodies and debris were removed, the wounded treated and evacuated for further medical care, and many thousands of dead temporarily buried until a permanent burial ground could be established on that site.¹⁻⁴

Seventeen acres of land were purchased by the Northern states for a national cemetery on that site for the fallen soldiers.¹⁻⁴ The dedication of the battlefield and cemetery was delayed until 19 November 1863 in deference to the keynote speaker Edward Everett, a classical scholar and orator from Harvard University. As an afterthought, President Lincoln (Figure 1) was asked 17 days beforehand to give a brief dedication following the keynote address. He began writing his remarks a few days before the event. The Address was as follows:²

Four score and seven years ago, our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who gave their lives that this nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate – we can not consecrate – we can not hallow – this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work, which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to great task remaining before us – that from these honored dead

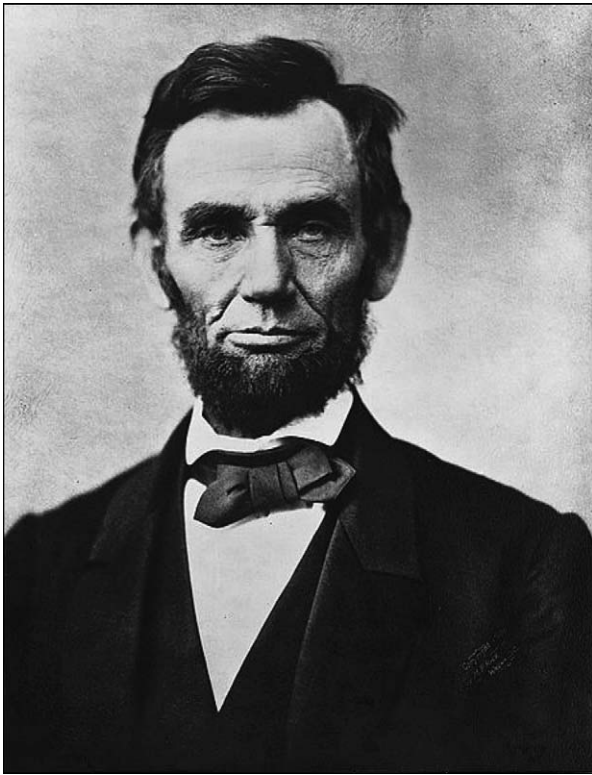


Figure 1 Photograph of President Abraham Lincoln taken on 8 November 1863 by Alexander Gardner. From Library of Congress Prints and Photographs Division (Reproduction Number LC-USZ62-13016) (photograph in the public domain)

we take increased devotion to that cause for which they gave the last full measure of devotion – that we here highly resolve that these dead shall not have died in vain – that this nation, under God, shall have a new birth of freedom – and that government of the people, by the people, for the people, shall not perish from the earth.

Despite its brevity, the Address would be recognized as one of the most powerful of all time. In a few words he summed up the task that lay ahead – to rededicate the nation to democracy and the cause of freedom that the founders of the country envisioned. However, it is not well appreciated except by certain historians that Lincoln became ill the day before the Address and that his illness became serious and protracted. Although the gravity of his illness was never revealed to the public, rumours spread quickly that Lincoln was very sick. However, he recovered to lead the nation to the end of the Civil War when he was assassinated.^{3,4}

In Gore Vidal's novel concerning Abraham Lincoln's presidency,⁵ Lincoln's illness was said to be due to smallpox. However, the basis of that conclusion was not revealed in that somewhat fictionalized account of Lincoln's presidency.

Neither Lincoln nor members of his family wrote an account of the illness. We consequently examined the publications of Lincoln's personal

presidential secretaries, John Nicolay (1832–1901)^{6,7} and John Hay (1838–1901),⁷ books by his friend, former law partner, and bodyguard, Ward Hill Lamon,^{8–10} the diaries of his Secretary of the Navy Gideon Welles¹¹ and his Attorney General Edward Bates¹² and the diary of United States Senator Orville Hickman Browning.¹³ Information concerning the illness in those documents was scanty. The notes of Lincoln's personal physician, Robert King Stone, were found,¹⁴ but Lincoln's illness was not mentioned although Stone attended Lincoln during that illness.^{15,16} Some aspects of the Gettysburg illness were described in Milton Henry Shutes's book concerning Lincoln and his doctors,¹⁵ Carl Sandburg's history of Lincoln,³ Clark Ezra Carr's book on Lincoln at Gettysburg¹⁷ and Rudolph Marx's survey of the health of the United States presidents.¹⁸ A structured summary of Lincoln's illness and of smallpox in Washington, DC, during September through November 1863 was found in an in-depth history of smallpox by Donald R Hopkins.¹⁹ Hopkins indicated that Washington Chew Van Bibber, a physician from Baltimore, Maryland, was asked to examine President Lincoln during his illness. A remembrance of Van Bibber's visit to Lincoln was subsequently found in an autobiography of a surgeon written many years after Van Bibber's death.²⁰ A day-by-day account of Lincoln's life from 1809 through 1865 was also studied.²¹ A brief, unreferenced account of the illness published in 2002²² was also examined. These references and newspaper reports concerning his illness^{23–28} were then used to reconstruct the major features of the illness and to assess whether Lincoln's Gettysburg illness was unmodified or immune-modified smallpox or a different disease.

Case report

At the onset of his illness in November 1863, Lincoln was 54 years of age. Despite the burdens of the Presidency, some bouts of depression and certain personal adversities, he appeared in good health.^{3,4} A vertical strabismus (Figure 1) that may have been due to previous trauma to the left frontal area of the head was noted.²⁹ The speculation that Lincoln had Marfan's disease³⁰ was apparently not validated by DNA analysis.³¹

During the train trip from Washington, DC, to Gettysburg on 18 November, Lincoln remarked to John Hay that he felt weak. The next morning Lincoln mentioned to John Nicolay that he was dizzy, but he visited the battlefield and the cemetery by carriage where many dead were yet to be buried, and later rode a horse to the site of the dedication.

Late that morning, Edward Everett began his two-hour keynote address. After its conclusion and a short musical interlude by the Baltimore Glee

Club, Lincoln rose to give his address. Hay noted that Lincoln's face had 'a ghastly color'. He was 'sad, mournful, almost haggard'.¹⁷ Scarcely glancing at his written notes, he delivered the Address with a strong voice to a quiet audience. A professional photographer poised to take his picture was caught unawares by the brevity of the Address. Thus, there is no close-up photograph of Lincoln just before, during or immediately after the Address.

The audience seemed stunned; 'there was an impressive silence. There was then some applause when he stopped speaking.⁷ After the speech, he confided to his Secretary of State William H Seward 'Well, that fell on them like a wet blanket'.⁴ As he stood at the back of the platform clutching Lamon's right arm, Lincoln remarked 'Lamon, that speech won't scour! It is a flat failure and the people are disappointed'.⁹

Afterwards he looked 'gloomy and listless'.⁴ When Lincoln boarded the 6:30pm train for Washington, DC, he was feverish and weak. When awake, he complained of weariness and severe headache.^{15,19} He was febrile and prostrate during the trip. His personal servant, William B Johnson, applied a wet towel to his face to allay the headache. At the White House, he had fever, malaise, exhaustion and pains in the head and back.^{3,15,18,19} Information was not released to the press, but rumours circulated that the President was very ill and perhaps dying.

The high fever, profound weakness, general malaise, severe headaches and back pains continued. A scarlet rash appeared over his body on the fourth day of the illness.^{18,19} Lincoln's physician, Dr Stone, first diagnosed the illness as a cold, later as 'bilious fever' and then as scarlatina (scarlet fever).¹⁹ On the fifth day of the illness, small widely scattered blisters appeared.¹⁹ Dr Washington Chew Van Bibber from Baltimore was asked by Dr Stone to see the President. Van Bibber changed the diagnosis to a mild form of smallpox.^{11,12,18-20} A retrospective account of that visit by Van Bibber was as follows:²⁰

'After the doctors had examined Mr Lincoln, they retired for the traditional consultation. When they returned to Mr Lincoln's room, he inquired of Dr Van Bibber: 'Well Doctor, what is your verdict?' Dr Van Bibber, who was of the old school, replied 'Mr President, if I were to give a name to your malady, I should say that you had a touch of the varioloid' [the old-fashioned name for smallpox]. 'Then am I to understand that I have the smallpox?' Lincoln asked, to which the doctor assented. 'How interesting,' said Mr Lincoln. 'I find every now and then that even unpleasant situations in life may have certain compensation. As you came in just now, did you pass through the waiting room?' He replied, 'I passed through a room full of people.' 'Yes, that's the waiting room, and it is always full of people. Do you have any idea what they are there for?' 'Well', said the Doctor, 'perhaps I could

guess.' 'Yes', said Mr Lincoln, 'they are there, every mother's son of them, for one purpose only; namely, to get something from me. For once in my life as President, I find myself in a position to give everybody something!'

Soon thereafter, when Owen Lovejoy, a United States Congressman from Illinois who was a dedicated abolitionist and a founder of the Republican Party,³² visited Lincoln, Lincoln quipped.^{3,33}

'Lovejoy are you afraid? No, I have had the small-pox [*sic*]; come in. I now have something I can give everybody.'

The diagnosis of smallpox was based upon widespread blisters but the distribution of the lesions was not described and it is unclear whether the lesions became pustular. By the tenth day of the illness the fever was abating and skin lesions were peeling and itching.^{18,21} On 6 December a reporter from the Chicago Tribune who visited Lincoln found that 'His face is slightly marked'.²⁶

During much of the first two weeks of the illness, his physician prohibited members of the cabinet and other associates from visiting him but the quarantine was not absolute.^{11,12} By 7 December (19 days after the onset of the illness) he could ambulate briefly but he was emaciated, weak and sallow faced. There were few, if any, persistent facial scars from the skin lesions.

He regained strength slowly and gradually returned to the affairs of state. By 15 December, some 25 days after the onset of the illness, he felt well enough to transact official business for several hours¹¹ and to attend Shakespeare's play *Henry IV* at Ford's Theater,^{27,28} the place where he would be assassinated in 1865.^{3,4} By 12 January 1864 he was still underweight but had recovered much of his previous stamina. Afterwards he did not display any major residual effect of the illness.

If Lincoln had smallpox, he contracted it from an infected human as there is no non-human vector of variola major.¹⁹ It is pertinent that Lincoln's 10-year old son, 'Tad', had been bedridden for two weeks with a febrile illness just before Lincoln left for Gettysburg.^{11,12,34,35} Further information concerning the child's illness is lacking except that he was febrile, weak and anorexic, and had a 'scarlet' eruption.^{33,35} Tad's three-week illness was of great concern because his 11-year-old older brother, William Wallace, had died ten months earlier after a two-week debilitating febrile illness thought to be typhoid fever.³⁴ By the time Lincoln reached Gettysburg, Tad was somewhat improved and soon became well.²³ The course of the child's skin eruption was not described. Scars from the eruption were never described nor seen in subsequent photographs. It is not known whether the child was ever inoculated or vaccinated against smallpox. The family history also revealed that Lincoln's son Edward died in February 1850 after a febrile illness that lasted 52 days and was said to be typhoid fever.³⁴

If Lincoln had smallpox, did he infect others? One possibility was William H Johnson, a long-time paid personal servant of Lincoln. Johnson cared for Lincoln throughout his illness and developed smallpox later.³⁶ According to the Chicago Tribune report of an interview conducted on 12 January 1864, Lincoln did not believe he had given the disease to Johnson.³⁷ However, Johnson's death in the middle of January 1864 was consistent with the intimacy of the exposure, the incubation period for smallpox (7–17 days) and the time it might have taken for the illness to be fatal (2–4 weeks).^{19,38} Of course Johnson's disease may have been contracted from other sources as smallpox was rife in the capital during that time.^{12,39}

Analysis of the illness and discussion

We asked first why there were so few descriptions of Lincoln's illness. His personal physician published notes on many of his famous patients including members of Lincoln's staff but none concerning Lincoln.¹⁴ Was he trying to protect the privacy of the President or was there another reason? The paucity of notes from others close to him is perhaps understandable. Lincoln may have provided a hint when he remarked to Lovejoy:³ 'Are you afraid?' Probably many were since smallpox [the presumed diagnosis] killed more humans than any other epidemic disease in recorded history.¹⁹

The clinical features of Lincoln's illness were clues to the diagnosis (Table 1). Initially Lincoln was somewhat weak and dizzy. Those symptoms were followed quickly by high fever, prostration, severe headache and backache. On the fourth day of the illness, a widespread scarlet eruption appeared. The next day, widespread 'blisters' developed apparently at the sites of the scarlet

eruption. Then the skin lesions peeled and itched. Few facial scars remained. During much of the three-week illness, Lincoln was weak and febrile. By the end of the illness he was emaciated.

Lincoln's physicians told him that he had mild smallpox (a touch of the varioloid).²⁰ Smallpox is caused by either of two closely related poxviruses, variola major and variola minor.^{19,38,40–42} Variola major produces a more serious disease than variola minor.^{19,38,40–42} The commonest features in variola major are a 2–3 day prodrome of high fever, prostration, backache, headache and a maculopapular eruption on the oropharynx, the face and forearms that spreads quickly to the legs and less commonly to the trunk (Table 1). In most cases, the lesions become vesicular and then pustular in the following day or two. Crusts form on the eighth or ninth day of the illness. Pitted scars are a common aftermath.

Before smallpox was eradicated, the overall mortality of the disease was about 30%.^{19,38,42} The age of the victim,^{19,42} the viral load and the degree of cellular immunity were the most important determinants of the morbidity and mortality of the disease. Milder symptoms of short duration usually occurred in previously vaccinated individuals,^{19,38,42,43} and asymptomatic infections occurred in highly immune individuals.^{38,42} It should be noted that the term that Lincoln's physicians used for smallpox, varioloid, was an accepted euphemism for smallpox at the time but that varioloid was later employed in the 20th century to designate immune-modified smallpox.^{19,38,43} Variola minor produced a shorter, less severe illness than variola major.^{19,38,41,42} Moreover, variola minor did not appear in the United States of America until the end of the 19th century.^{19,38,41,42}

To understand whether Lincoln had unmodified or immune-modified variola major or another

Table 1 Clinical features of Lincoln's case compared with unmodified smallpox, varicella, disseminated herpes simplex virus type 1 (HSV-1) and rickettsialpox (RkPox)

Clinical features	Lincoln's case	Smallpox	Varicella	Disseminated HSV-1	RkPox
Age	54 years	All ages	Often 2–10 year	Any age	Any age
Immune status at the start of the illness	Normal	Normal	Normal	Deficient	Normal
Incubation	?	~7–17 days	21 days	Few days	3–7 days
High fever	+	+	In adults	+	+
Prostration	+	+	In adults	+	—
Headache	+	+	In adults	±	+
Backache	+	+	—	—	—
Skin lesions	+	+	+	+	+
Onset	Day 4	Day 3	24–36 h	Day 1	Day 1
Initial	Scarlet	Maculopapular	Morbilloform	Vesicular	Papule-eschar
Number	Many	Many	Few to many	Many	One to few
Progression	Day 5 vesicles	Days 4–5 Vesicles, then pustules	~48 h vesicles	Continual vesicles	Papules-vesicles
Crusting	Days 9–10	Days 8–9	+	—	+
Duration	~3 weeks	3 weeks	6–9 days	Fatal	1 week
Scars	Few	Frequent	Less frequent	Rare	Rare

disease, answers to the following questions concerning Lincoln's illness would have been helpful:

- (1) Was Lincoln ever inoculated or vaccinated against smallpox?
- (2) Were oral lesions present?
- (3) Exactly when did the initial skin lesions appear?
- (4) What was the distribution of the skin lesions?
- (5) Did the lesions become pustular?

The same information concerning the illness of his son, Tad, and his servant, William H Johnson, would also have helped understand whether Lincoln contracted the illness from his son and transmitted it to his servant.

First we questioned whether Lincoln's illness was due to a disease other than smallpox (Table 1).⁴⁴ The major possibilities were monkeypox, varicella (chickenpox), disseminated herpes simplex type 1 infections and rickettsialpox (Table 1).

- (1) Monkeypox infections in humans closely mimic pustular smallpox, but that disease was not considered further because Lincoln was not exposed to non-human primates or wild squirrels from West-Central Africa that harbour the virus.^{45,46}
- (2) Primary varicella-zoster virus infections usually present in children with fever, upper respiratory symptoms and a pruritic, morbilliform rash principally on the trunk and face that very quickly becomes vesicular.⁴⁷ Vesicles on an erythematous base typically occur in 'crops'. The infection is generally limited to seven days. Varicella seems unlikely given Lincoln's age, no upper respiratory symptoms, the delayed appearance of vesicles, the lack of crops of lesions and the prolonged duration of the illness.
- (3) In disseminated herpes simplex type 1 infections, widespread vesicles and/or visceral lesions develop.⁴⁸⁻⁵³ Disseminated herpes occurs in individuals with symptomatic deficiencies in T cells,⁴⁸⁻⁵¹ NK cells or plasmacytoid dendritic cells⁵² or in patients with marked atopic dermatitis (eczema herpeticum).⁵⁴ As there was no evidence to suggest that Lincoln was susceptible to opportunistic infections or that he had antecedent chronic dermatitis, a disseminated herpes simplex infection is unlikely.
- (4) Rickettsialpox presents with a painless lesion at the site of a bite from an infected mite that becomes an eschar by the time systemic symptoms begin.⁵⁵ The systemic manifestations are fever, headache, myalgia, photophobia, anorexia, a generalized papular eruption on the face, trunk and extremities, and regional lymphadenopathy. The papules are surrounded by erythema; vesicles develop in the centre of the papules. However,

rickettsialpox is unlikely as neither eschar nor photophobia were described in Lincoln's case, and his illness lasted for three weeks rather than one week as usually occurs in rickettsialpox.⁵⁵ More common rickettsial infections^{56,57} and infections that mimic rickettsial diseases⁵⁸⁻⁶⁰ were excluded because they lack vesicles and some display a vasculitic, petechial eruption.

Those other diseases were improbable, so did Lincoln have immune-unmodified or immune-modified smallpox?^{19,38,40,43} In the main, the severity and the duration of the illness were much greater in patients without prior immunization against smallpox.^{19,38,41,43} In that respect, the initial high fever, prostration, headache and backache, widespread skin lesions beginning on the fourth day, the time that the vesicles and scabs appeared, and the three-week duration of the illness more closely approximated immune-unmodified variola major than immune-modified variola major.^{19,41,43} Moreover, as discussed by Aronson,²² Lincoln's physicians attempted to reassure the public by suggesting that Lincoln had a mild form of smallpox rather than the unmodified pustular form, the mortality of which in Lincoln's age group was about 30%.^{19,38}

It was fortunate that Lincoln survived and subsequently led the country to a successful conclusion of the Civil War and to the end of slavery in the United States of America. His survival set the stage for reconciliation between the North and the South and for the rebirth of freedom in the country that he called for in the Gettysburg Address. Although the reconciliation was slow in coming and the end of slavery did not lead to the establishment of universal civil rights for many years, Lincoln remains a symbol for all who aspire to freedom and justice.

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Notes and Jottings

Bill Inman developed polio in his last year as a medical student at Cambridge. Paralysed from the waist down and with little use in his arms, he went on to qualify, adapt a van for his wheelchair, travel the world and learn to fly gliders. He had a distinguished career as a clinical pharmacologist, first as a civil servant and then in his own unit at Southampton. His autobiography, *Feeling Better Doctor?* (ISBN 0-955-2044-0-2) published just before his death in 2006, gives an account of the Yellow Card system for reporting adverse reactions to medicines and of post-marketing surveillance, each of which he pioneered, and his work on thrombosis in women taking oral contraceptives that led to the development of the 'mini-Pill'.

Another volume from the Wood Library Museum of Anesthesiology in Illinois, *Careers in Anesthesiology Volume IX, Three Pioneer British Anaesthetists* (ISBN 1 889 595 14-4), tells us of Sir Ivan Magill (1888-1986), Sir Robert Macintosh (1897-1989) and Sir Geoffrey Organe (1908-89). This is one of the memoirs in the Careers series, beautifully produced and a credit to the biographers.

Eugene Goldwasser has written *Jake, Leon O. Jacobson, MD: The Life and Work of a Distinguished Medical Scientist* (ISBN 0 88135 279 9). As the author points out, his name is not attached to any disease, and neither is a treatment named after him, but his work led to the development of chemotherapy. This slim volume is a delight to handle and easy to read.

Eric J Arnott is an eye surgeon who, in his autobiography *A New Beginning in Sight* (ISBN 1 85315 730 9), describes his work with Harold Ridley's invention of the lens implant in 1949. There is plenty in this book of 300 pages – particularly for those interested in ophthalmology.

David Apple has written a biography entitled *Sir Harold Ridley and His Fight for Sight* (ISBN 1-55642-786-7) that may be ordered from Advanced Medical Optics (MRO) at +44 1628 551600. The 316 pages are illustrated copiously and the story is a fascinating one.

Dr John Blair has added another Army volume, entitled *The Conscript Doctors, Memories of National Service* (ISBN 1-85821-946-9), to his series of books. The foreword to the volume, compiled and edited by Blair, states 'John Blair has a flair for telling a story' and this volume should maintain that reputation.