The Life and Death of Smallpox

* Dr. Sajikumar. J

“The most dangerous epidemic is the smallpox... which sweeps at times like a storm of death over the land.”

Smallpox, which is believed to have originated over 3,000 years ago in India or Egypt, is one of the most devastating diseases known to humanity.

**Atharvaveda** scripted 3000 years ago described variolation, **Sitala**—the Goddess of Smallpox, and the epidemic of Smallpox.

For centuries, repeated epidemics swept across continents, decimating populations and changing the course of history. The disease, for which no effective treatment was ever developed, killed as many as 30% of those infected. Between 65–80% of survivors were marked with deep pitted scars and many had blindness. In the early 1950s an estimated 50 million cases of smallpox occurred in the world each year, a figure which fell to around 10–15 million by 1967 because of vaccination.

**Rhazes** was the first to describe smallpox in 880 A.D. **Herman Boerhaave** proved that smallpox is exclusively spread by a contagion. **Averroes** knew that one attack conferred life long immunity to the survivors.

**Queen Elizabeth I** had smallpox in 1552. Her face was always covered with a mask like makeup to cover the deep scars of smallpox. Prince **Balthasar Carlos**, heir to the Spanish throne died of Smallpox in 1646. **William III** of Netherlands and his wife **Queen Mary** died of Smallpox.

**Variolation** - In Asia, practitioners developed the technique of variolation—the deliberate infection with smallpox. Dried smallpox scabs were blown into the nose of an individual who then contracted a mild form of the disease. Upon recovery, the individual was immune to smallpox. Between 1% to 2% of those variolated died as compared to 30% who died when they contracted.
the disease naturally. In contrast to Asians and Africans who inoculated by blowing dried smallpox scabs up the nose, Europeans and their American cousins tended to inoculate through a puncture in the skin.

In the early 18th century the newly established scientific societies of Europe took the matter of inoculation. The most highly visible experiment took place at the London New Gate Prison in 1921. With the permission of the king, surgeon Charles Maitland inoculated six prisoners due to be hanged in exchange for the freedom, an experiment which was witnessed by a number of notable doctors. The results of the tests were auspicious. All the prisoners survived, and in 1722 the Prince of Wales’ daughters received inoculations.

The Foundling Hospital, London, was a children’s home established for the “education and maintenance of exposed and deserted young children.” Since large numbers of children were housed here, they were at high risk for contracting smallpox. To protect them, all children who were not already immune to smallpox were inoculated.

Benjamin Franklin promoted inoculation in his own newspaper in 1736, even after his son died of smallpox after inoculation.

Jan Ingenhousz (1730 - 1799) Dutch born British physiologist vaccinated the imperial children at the court of Vienna, after three children of the Empress Theresa had died of smallpox.

Edward Jenner (1749-1823) made the first scientific attempt at vaccination. Jenner took some material from the cowpox pustule on the arm of Sarah Nelmis, a milkmaid, and inoculated it into the arm of a young boy named James Phipps. Young James developed a pustule and mild fever. When three months later Jenner inoculated him with smallpox, he remained healthy.
He continued his research and reported it to the Royal Society, who did not publish the initial report. After improvement and further work, he published a report of twenty-three cases. Some of his conclusions were correct, and some erroneous – modern microbiological and microscopic methods would make this easier to repeat. The medical establishment, as cautious then as now, considered his findings for some time before accepting them. Eventually vaccination was accepted, and in 1840 the British government banned variolation—the use of the smallpox itself—and provided vaccination—using cowpox—free of charge. The medical establishment, as cautious then as now, considered his findings for some time before accepting them. Eventually vaccination was accepted, and in 1840 the British government banned variolation—the use of the smallpox itself—and provided vaccination—using cowpox—free of charge.

The importance of Jenner’s work does not stop there. His vaccine also laid the groundwork for modern-day discoveries in immunology, and the field he began may someday lead to cures for many other diseases. Lesotho stamp depicting the marble statue of Jenner’s vaccination on the arm’s of James Phipps, designed by Montevrde, is in Genoa today.

In 1999 the British Mail issued a series of stamps to celebrate a millennium of British achievement. The 20p stamp honours Dr Edward Jenner. The stamp shows Jenner in silhouette, administering the first vaccination against smallpox to eight year old James Phipps on May 14, 1796, cleverly combined with the body of a large cow.

**Oswaldo Gonclaves Cruz** (1872-1917) Brazilian physician and bacteriologist was the first person who advocated compulsory smallpox vaccination. A.J Muniz and Espinola introduced smallpox vaccination in Argentina and Spain respectively.

**Global Eradication of Smallpox**

In the early 1950s – 150 years after the introduction of vaccination – an estimated 50 million cases of smallpox occurred in the world each year, a figure which fell to around 10–15 million by 1967 because of vaccination. In 1967, when WHO launched an intensified plan to eradicate smallpox, the “ancient scourge” threatened 60% of the world’s population, killed every fourth victim, scarred or blinded most survivors, and eluded any form of treatment.

**Mass vaccination programs** were successful in many Western countries; however, a different approach was taken in developing countries. This approach was known as surveillance and containment. Surveillance was aided by extensive house-to-house searches and rewards offered for persons reporting smallpox cases. Containment measures included ring vaccination and isolation of cases and contacts.
Through the success of the global eradication campaign, smallpox was finally pushed back to the horn of Africa and then to a single last natural case, which occurred in Somalia in 1977. A fatal laboratory-acquired case occurred in the United Kingdom in 1978. The global eradication of smallpox was certified, based on intense verification activities in countries, by a commission of eminent scientists on 9 December 1979 and subsequently endorsed by the World Health Assembly in 1980.

Now the world and its peoples have won freedom from smallpox, which was a most devastating disease sweeping in epidemic form through many countries since earliest time, leaving death, blindness and disfigurement in its wake and which only a few decades ago was rampant in our world.