"Certainly infections cannot be attributed to the intervention of the devil but must be laid at the surgeon’s door” - Harvey Cushing

In 500 BC, the great Indian surgeon Susruta was one of the earliest exponents of infection prevention and surgical asepsis. He advocated the concepts of wound preparation, irrigation and debridement, which if not undertaken thoroughly would proceed to suppuration. In his surgical text, Susrut Samhita, he even describes various modes of transmission of infectious diseases like ingestion, inhalation, direct contact and contact with infected material. These remarkable observations, proved centuries later by the germ theory were undoubtedly the most primitive and yet fundamental truths on infection prevention and surgical asepsis.

Joseph Lister (1927-1912)

British surgeon and scientist Joseph Lister is best known for spearheading the medical use of antiseptic medicine. Lister was the head of surgery at the Glasgow Royal Infirmary. Although, he lived at a time when it was already known that microbes could be responsible for infection, he was unaware of Louis Pasteur’s work and erroneously believed that such germs were carried in the air. Hence, he decided to attack these before they entered the body through the open wound. His first success with antiseptics was with the topical use of carbolic acid to treat the infected wound of an 11 year old boy whose leg had been crushed by a cart. The wound did not become infected and the fracture healed perfectly. In addition to advocating hand washing and cleansing of the wounds prior to surgery, he also sprayed the entire operation theatre with carbolic acid preoperatively and continued to spray the wound intraoperatively. This technique involved both antisepsis, ie killing the microbes within the wound as well as asepsis, ie preventing microbes from entering the wound. He published his data from the successful treatment of 11 patients with compound fractures in the Lancet in 1867. Lister’s techniques were put to use during the Franco-Prussian war when Prussian military surgeons used carbolic acid to treat battle wounds. This brought down infection rates significantly and Lister was hailed as a hero in Germany and much of the western world.

Florence Nightingale (1820-1910)

In present day practice, as doctors find less and less time for personalised patient care, infection control is invariably the domain of the nursing staff. Infact, the story of infection prevention would be incomplete without paying a tribute to the tremendous contribution of Florence Nightingale- the lady with the lamp, who established the profession of nursing as we know it today. The period between the latter half of the 17th century and the middle of the 19th has been described by medical historian Fielding Garrison as the “dark age” of nursing. Women who took up the profession were usually poor, unskilled and often associated with immoral behavior. The hospitals they served held equally low reputations as unclean, disorderly, and infection breeding. They were often regarded merely as places to die. Despite being born to a wealthy family, she was obsessed with nursing the sick and needy. Her parents considered it to be a profession inappropriate to a woman of her class and background, and would not allow her to train as a nurse. They expected her to make a good marriage and live a conventional upper class woman’s life. Against enormous family pressure, she left home at the age of 32 to train...
as a nurse in Paris. After working in London for some years, she was appointed as Superintendent of Nursing at King’s College Hospital. In 1854, during the Crimean War, she was appointed to lead a batch of 38 nurses in Crimea to care for the wounded British soldiers. The British base in Crimea was in a deplorable state—rat-infested, poorly ventilated and filthy. With extraordinary, unwearied dedication, Nightingale transformed the base into a heaven for the wounded. The death rate fell from 40% to 2% and she received tremendous appreciation for her work. After returning to London, she was instrumental in setting up nursing schools to teach the art of nursing care. Nightingale’s theories, published in ‘Notes on Nursing’ (1860), were hugely influential and her concerns for sanitation, military health and hospital planning established practices which are still in existence today. Through her work and her school, Florence Nightingale is responsible for elevating the profession of nursing to an honourable status. Despite her fragile health, she remained steadfast to her cause and worked tirelessly to the end.

The evolution of the field of infection prevention is a fine example of how scientific discovery is often rejected by the established and narrow-minded thinking of the day. It would be prudent to remember this whenever we are confronted with evidence that is contrary to traditional and conventional wisdom.

References

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