Does history repeat itself in medicine?

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"The longer you can look back, the further you can look forward"

Winston Churchill (1944)

The majority of major discoveries in medicine are unique. Two examples are: William Harvey's (1578–1657) description of the circulation of the blood, published in Exercitatio anatomica de motu cordis et sanguinis in animalibus in 1628, and the contributions leading up to the enunciation of the “germ theory” of disease; Louis Pasteur (1822–95), Robert Koch (1843–1910), and Joseph (later Lord) Lister (1827–1912) were largely instrumental in its elucidation. But the underlying idea(s) behind numerous lesser discoveries, which have not attained such a high profile, is often repetitive. Significant lessons for future medical practice can therefore ensue.

An organism is not necessarily causatively related to a disease entity

I cite two outstanding examples at the present time to illustrate this point. A spiral organism which has become definitively designated Helicobacter pylori was demonstrated in the presence of gastritis and peptic ulceration in 1984. Since then, this organism has been shown in epidemiological surveys to be widely distributed world wide in the upper gastrointestinal tract of Homo sapiens—but frequently in the absence of localised pathology. Is H pylori therefore the cause of these lesions? There is also an ongoing controversy regarding the causative agent of AIDS. Although the organism designated HIV has been incriminated by most investigators, a minority viewpoint (held by Duesberg and others) is that this organism is not (by itself at least) the cause of the full blown disease.

Historically, William Osler (1849–1919) was initially far from convinced that the organism described by Alphonse Laveran (1845–1922) in Algeria was causatively related to malaria. A definitive demonstration had to await the researches of Ronald Ross (1857–1932) in Secunderabad and Calcutta, India in 1897 and 1898 respectively. A more convincing example, perhaps, is that relating to the cause of the “negro lethargy” (African trypanosomiasis) which was in 1902 sweeping the northern shores of Lake Victoria Nyanza. Patrick Manson (1844–1922), in the light of limited experience in London, favoured Filaria (Mansonella) perstans, whereas Aldo Castellani (1877–1971) in the light of his own researches at Entebbe, Uganda as part of the first Royal Society Sleeping Sickness expedition came to the conclusion that a streptococcus was causa-

tive. It was left to a subsequent expedition—led by David Bruce (1855–1931) to demonstrate that Trypanosoma brucei spp was in fact the cause of this disease.

The overriding “message” from these (erroneous) conclusions is that until Koch’s postulates are satisfied in entirety, the actual causative agent must remain in doubt!

Inoculation/vaccination is not without risk

Among numerous recent examples of media concentration on the side effects (complications) of these preventive procedures was an article in the London Metro newspaper linking “jabs” with Gulf War illness. Since Mary Wortley Montagu (1689–1762)—who pioneered variolation, and Edward Jenner (1749–1823)—who popularised cowpox vaccination, in 1796, a great deal of attention has been given to the complications of preventive techniques. Indeed, campaigns have often assumed a “national profile” and a Punch cartoon of 1898, for example, refers to “De-Jenneration”, while several late 19th century pamphlets condemned the technique of vaccination as being positively harmful.

Poverty and disease

A recent Lancet editorial underlined the fact that the bulk of disease in the lower social strata in the “Third world” is caused by communicable disease, while in the upper strata, non-communicable disease assumes a far higher profile. Therefore, if communicable diseases were eliminated the overall health of the community would benefit greatly; that is, curable disease is related to poverty. There are many lessons here to be learned from Victorian England—where the great medical advances lay in diminution in prevalence, or elimination, of communicable disease. In this context, although it had little impact at the time, John Snow’s (1813–58) demonstration that Vibrio cholerae is usually transmitted by drinking water contaminated by human faeces was of paramount importance. Cholera subsequently became widely designated the “great social reformer”. In the wake of this discovery, Joseph Bazalgette (1819–91) designed and constructed London’s sewerage system. This was to a large degree a corollary to the growing supposition that a “contaminated environment” (due to poor standards of sanitation) as outlined by Southwood Smith (1788–1861), was responsible for many of the common diseases. The River Thames, from which London’s drinking water was derived, was at that time heavily contaminated. A further example relates to the history of tuberculosis—arguably
the most important bacterial infection world wide today. John Bunyan (1628–88) termed this disease “The captain of all these men of death”.22 This situation still pertains—in the presence of HIV/AIDS, increasingly resistant strains of Mycobacterium tuberculosis have made this a vast global problem of the 21st century. The Lancet recently published an historical paper comparing the diagnosis and management of this disease in the present day with that of 100 years ago.20

In fact the relationship between poverty and disease reflects the content of the Black report, Inequalities in Health.17 This theme, that is, that disease is more prevalent in the underprivileged, can be traced back many centuries—in fact to the Bible!

Health service management

Many themes which are currently “topical” were not in fact introduced within the last few years! As an example, Henry Burdett (1847–1920) was, in the late 19th century, a great enthusiast for voluntary hospitals;22 he also advocated authority of managers over the medical profession, clinical audit, and hospital league tables (in the wake of Florence Nightingale [1820–1910]23,24). Burdett, also incidentally, pronounced that politicians are a “curse of the sick”.22 This is therefore a further example of recapitulation of historical events which have gone before!

Conclusion

Medical history can, and does from time to time, repeat itself. I have given several examples of this. It is therefore of paramount importance that undergraduate curricula should contain more history of medicine—for many lessons applicable to the present are to be found in events which have taken place in former times.

This article is based on a paper presented to the Victor Horsley Scientific Session at the BMA Annual Meeting (“Celebrating the past, shaping the future”) on 28 June 2000.


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