One hundred years of learning from Lister

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It has been a year of anniversaries with the Queen's diamond jubilee, the bicentenary of Charles Dickens' birth and several local events to mark the 400th anniversary of the 'Pendle witch trial' at Lancaster Castle. The anniversary which has been of most interest to me, though, has been the 100th anniversary of Joseph Lister's death.

Two conferences were organised to commemorate Lister: the Lister Conference in Edinburgh in February; and the 'Learning from Lister' Conference in London this March (unusually, the three days of this conference took place at three different venues to mark the main centres of Lister's later career at King's College, the Royal College of Surgeons and the Royal Society).

Having had a paper accepted for the London conference on the subject of Lister's contribution in the operating theatre, I discovered that both volumes of 'The collected works of Joseph Lister' are available in the Lancaster Medical Book Club collection of the Royal Lancaster Infirmary library. Surprisingly, Lister didn't write or co-write any books during his long career, but he was supportive of the efforts of Watson Cheyne, his nephew Rickman Godlee and others in this publication of his collected scientific papers in 1909.⁽¹⁾ Although volume one of 'The collected works' is available online (www.openlibrary.org), volume two, which contains Lister's ground-breaking work on the antiseptic system, can only be accessed in print and we are lucky to have a rare copy in the library collection.

My favourite paper in volume two is titled 'On the effects of the antiseptic system of treatment on the salubrity of a surgical hospital', published early in 1870 in *The Lancet* but written at the end of 1869, shortly after Lister moved from Glasgow to Edinburgh. The paper gives an incredible summary of Lister's experience in the new Glasgow Infirmary, where each of the four surgeons was in charge of three of the 12 surgical wards. Because of this arrangement, Lister could compare his patients' risks of developing each of the three main hospital infections – pyaemia, erysipelas, and hospital gangrene.

Lister understood the dangers of overcrowding on the wards stating, 'At this period I was engaged in a perpetual contest with the managing body, who, anxious to provide hospital accommodation for the increasing population of Glasgow, for which the infirmary was by no means adequate, were disposed to introduce additional beds beyond those contemplated in the original construction.' Lister explains how the mortality rate

from infection (on one of the ground-floor wards he wasn't in charge of) led to an investigation. This in turn led to the discovery that the infirmary had been built on top of a large number of open burial pits holding 5,000 bodies from the cholera epidemic of 1849!

Despite such distractions, Lister achieved very low infection rates by introducing a meticulous regime of wound dressings incorporating carbolic acid. The paper is also notable for being one of the earliest surgical papers to feature statistical analysis, such that Lister found that he had a mortality rate of 16 out of 35 from all types of amputation in two of the years before introducing antiseptics, compared to six deaths from 40 amputations in the three years after the antiseptic system was introduced.

Despite this achievement, Lister comments that his results from lower-limb amputation were not as successful as those from upper-limb amputation. At the end of the paper, Lister looks forward to further improvements in the antiseptic system and the next stage of his work in Edinburgh, which included the carbolic acid spray for clean air in the operating theatre and further modifications of his antiseptic system which paved the way for the development of modern surgical practice.

At the London Conference, I heard about the efforts to preserve the Lister wards when later redevelopment took place at the Glasgow Infirmary. These efforts were unsuccessful, but fortunately Henry Wellcome stepped in and purchased all the important artefacts for his collection.

REFERENCE

1. Cameron Sir HC, Watson Cheyne Sir W, Godlee RJ, Martin CD, Williams D. *The Collected Papers of Joseph, Baron Lister*. Vols. 1 and 2. Oxford: Clarendon Press; 1909

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