In My Own Time

Tuberculosis

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When I qualified in 1934 I knew virtually nothing about pulmonary tuberculosis. The chances of seeing patients with tuberculosis in the wards were slight, because as soon as the diagnosis was made they were hustled off elsewhere, and the survivors eventually passed into the care of their tuberculosis officers. A year later I was appointed house physician to the Brompton, a hospital for consumption and diseases of the chest as it was then called—and in the next six months saw as much human tragedy as I have ever seen in a similar period.

The Brompton in 1935

About four-fifths of the inpatients were tuberculous. They were graded according to the severity of their illness, those with advanced disease being nursed together before being transferred to a side ward for the final phase. Many of them were young women who, for as long as they had the strength to do so, spent hours on their faces and fingernails before the weekly visit of their consultants. They were cared for by a group of distinguished and charming general physicians, who had little of value to offer beyond rest, fresh air, good food, and sympathy. Yet the Brompton was held, as it always has been, in great affection by the staff. We soon learnt never to let a patient cough in our faces and could hardly fail to notice the liberal distribution of sputum mugs throughout the hospital; the recesses in which they stood may still be seen in the corridors. Indeed, sputum occupied much of our time and thoughts. Every weekday the house physicians adjourned to the "spit lab" at 12.30 to test the firm's specimens, and to gossip. We quickly recognised saliva for what it was worth, and we rarely retested patients who were known to be positive. We had a formal dinner in the evenings to which we proceeded crocodile fashion led by the resident medical officer, Dr Guy Scadding. The hospital generously gave us extra milk, free beer, and health insurance.

Medical collapse therapy was exploited to the utmost. Artificial pneumothorax was attempted on most patients and pleural adhesions were cut through a thoracoscope when practicable, but the danger of complications was not then fully appreciated. As a consequence, one of my most onerous tasks was the lavage of tuberculous empyemata, which were washed out with saline through a glass funnel twice a week. If pleural adhesions ruled out an artificial pneumothorax, a phrenic crush and pneumoperitoneum were considered. Outpatient refill clinics were held daily; the largest were on Saturday afternoons,

when, on one occasion, two of us shared 140 refills. There was always the possibility of an air embolus and a stretcher fixed to the axle of two large wheels was held in readiness; any patient feeling faint was strapped to the stretcher and tilted head downwards. By the end of the decade, medical collapse therapy was used more conservatively and with fewer complications.

The good reputation of the hospital rested mainly with the surgeons, as it did throughout the years between the wars. Roberts, Tudor Edwards, Price Thomas, and Nelson—with Magill as anaesthetist—were the consultants, supported by Brock and Norman Barrett as clinical assistants. Among them they refined the various types of thoracoplasty and carried an enormous burden of surgery. Those were the days when the clinical condition of the patients was reviewed at the end of the operation and a decision made whether one or perhaps two blood donors should be sent for.

Immunity and resistance

In 1938-9 I had the good fortune to work for a year with Professor Eugene Opie of Cornell University in the New York Hospital. One aspect of his directorship of the department of pathology still impresses me as much as it did then. Under his direct control he had some 15 to 20 doctors of different seniorities working on various experimental aspects of tuberculosis. He gave each of us half an hour of his time every week—in my case from 10 to 10.30 on Tuesdays. During these sessions he allowed no external interruptions and always invited us to initiate a discussion relevant to our projects. I can think of no better way of instructing postgraduates in scientific reasoning. Opie's methods seem to be far removed from the present academic structure, in which clinical research workers of modest experience are rarely content with anything short of a readership and then, having acquired a senior post, tend to plough a lonely furrow without the benefit of advice from others.

My time at Cornell was divided between tracing the development of tuberculosis in rats after an intravenous injection of tubercle bacilli and taking radiographs of similarly infected macacus rhesus monkeys. These studies were relevant to the prevailing interest in natural and acquired immunity, and to the relation between immunity and resistance, which was then the chief topic of tuberculosis research. Years later, I noticed a resemblance between the curious combination in rats of free multiplication of bacilli with little cellular reaction and negative skin test results, and the non-reactive tuberculosis that occasionally develops in man, particularly in conjunction with granulocytic disorders. The features of simian tuberculosis—with massive enlargement of lymph nodes, miliary spread, and a predisposition to tuberculosis pneumonia—were observed by Borrel in the Congolese troops from West Africa who went to France in the first world war without previous exposure to tuberculosis. These features were later described in detail by Lyle Cummins in his book on primitive tuberculosis, and may still be found in remote regions in Africa.

After the war

Years of privation during hostilities had a cumulative effect that reached a peak in 1945-6. The blackout, defective housing, air-raid shelters, food rationing, and long hours of work in factories all contributed to the spread of tuberculosis. Thousands of servicemen returned from overseas, many with artificial pneumothoraces which I refilled in Egypt during their transit from India and the Far East. There were far more patients than could be adequately cared for: sanatoria and chest hospitals were full, some with waiting lists of a year or more; special wards set aside in general hospitals were quickly occupied; sanatoria in Switzerland accommodated a few. The difficulty was to decide who should be given priority. There were parents in contact with their young children, those with advanced disease who were a danger to the community, and others with limited infections—often discovered by mass radiography—who would be expected to respond to specialist care. The rigid allocation of beds only to residents in each county aggravated things even more. Although few expected it at the time, the turmoil was resolved in the following years by improved nutrition and living standards, and the discovery of anti-tuberculosis drugs.

In the late 1940s the various forms of collapse therapy were applied with confidence, but their overall value will probably never be known. Some patients undoubtedly benefited from a properly managed artificial pneumothorax or a thoracoplasty, as did others from rest and graduated exercises, but the mass of them had pathetically inadequate powers of resistance and many succumbed. Such variable responses were not amenable to statistical analysis by the methods available at the time. Instead, clinical impressions—supported by somewhat arbitrary calculations—determined management. The complacency of the specialty was then shattered by the simultaneous arrival of anti-tuberculosis drugs and the means of assessing their effectiveness. Bradford Hill and Marc Daniels were soon joined by several statistically minded clinicians—who, happily, are still with us—in organising clinical trials. Had this not happened, effective treatment with drugs would have been delayed for several years. The Medical Research Council controlled the first batches of streptomycin that were distributed to selected hospitals for use on certain randomly matched patients with open bilateral disease. The course consisted of one gramme a day for six weeks. The initial results were favourable, despite vestibular disturbances, and started a clamour for general distribution. As the supply increased, surgeons successfully resected localised disease under cover of the drug. Para-amino-salicylic acid and

isoniazid followed and were similarly monitored, particularly in relation to the development of drug resistance.

By about 1955 chest physicians no longer resented the dictatorial methods of statisticians and took pride in treating their patients with tuberculosis with the best combination of drugs; they were even allowed to give their asthmatic patients the newly available hydrocortisone, which had also been rigorously tested. At the same time, some of them were discouraged from publishing their own results for fear that their figures and conclusions would be ridiculed, but they were soon heartened when trends (as opposed to formulae) became acceptable. Looking back at the contribution of statistical techniques to chest medicine over the past 30 years, and particularly to tuberculosis, I find it difficult to see how the specialty could have developed in the way it did without the stimulus of a band of able and dedicated academics who consistently questioned ideas and showed the way to test the many anti-tuberculosis remedies that appeared on the market. Chest physicians may be more aware of statisticians than any other group of specialists; certainly, they dare not allow themselves to neglect recent trends in chemotherapy.

After 1960

The spectacular decline in tuberculosis after 1955 raised hopes of its virtual eradication, or at least of reaching the point at which BCG inoculation of school-leavers would no longer be necessary. Then the influx of immigrants led to a revision of plans. The British Tuberculosis Association—now the British Thoracic Association—surveyed notifications over a short period and found a preponderance of Asians, particularly Pakistanis. The society pressed for a mass x-ray unit at London Airport—which was installed in 1965, but has been only partly successful, and continues its pursuit of infectious disease in this elusive population.

Pulmonary tuberculosis is now somewhat uncommon except in immigrant communities, but chest physicians are all acquainted with vagrants and alcoholics with the disease. Shortly before I retired in 1975 I saw a young man who had relapsed after a good initial response to standard remedies. He assured me he had taken his drugs regularly and resented my insistence that he could not have done so. Eventually, he admitted he had not: indeed, he had stopped taking them. At the risk of being trite, I conclude with the old saying "no fool ever cured himself of tuberculosis."

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