Out of the Pages of History

The control and containment of tuberculosis in the industrialized world in the first half of the last century is one of the significant success stories of that time. This achievement was brought about by a number of factors—in particular, enlightened public health controls, the sanatorium movement (which isolated infectious cases from the community) and the overall rise in the standard of living in the industrialized areas. The treatment of the disease itself played a relatively minor role. The decline in morbidity and mortality from tuberculosis began long before effective antimicrobial therapy became available in the 1940s, and that availability caused only a very minor change in the already rapidly declining rates. Nevertheless, treatment was obviously of great importance to individual patients. No effective treatment had already been available previously, and bed rest was practiced universally and relentlessly, based not so much on critical studies but rather as something to do when nothing else was available. The only aggressive interventional approaches of the day were those offered by collapse therapy, consisting of artificial pneumothorax, phrenic paralysis, plombages placed extrapleurally, and pneumoperitoneum. This last was practiced widely but with questionable effectiveness. The article by Weissberg et al, in this issue of CHEST (see page 847), reviews a series of patients who were treated from the 1930s through the 1950s, who presented quite recently with residual complications from the earlier procedures. This patient population came from Israel and represents a broadly based sampling from many areas and of multiple techniques. In this age of essentially nonsurgical drug treatment of tuberculosis, this study serves as a useful reminder of the significant successes many of these old procedures did indeed enjoy.

Collapse therapy was a daunting undertaking, demanding a high level of commitment from both patient and therapist. Artificial pneumothorax required frequent interventions, treatment frequently lasted for years, and ultimately, it could be successfully maintained in only 25% of patients, with tuberculous empyema developing in 20%. Surgical collapse of the chest wall by various techniques finally resulted, in the mid-1930s, in a general acceptance of John Alexander’s techniques of posterolateral rib resection, which was widely used with thousands of the procedures being done all over the world. This multistage approach had a 2% mortality rate and an 80% success rate. In an effort to mitigate the effects of this arduous surgical procedure and its severely
disfiguring effects, various extrapleural plombage methods were developed, including the introduction of oil, air, paraffin, bone fragments, Lucite balls, or gauze into an extrapleural pocket. The use of these materials, which tended to move and become secondarily infected, was replaced by the arrival of resectional surgery under antimicrobial coverage, soon after World War II. Thoracoplasties were used only occasionally to obliterate residual spaces following extensive pulmonary resections, particularly pneumonectomies. The period of great activity in pulmonary collapse surgery also marked the evolution of cardiopulmonary physiologic studies. It was feared early on that many of the patients undergoing these procedures might end up with severe cardiopulmonary physiological derangement in later years. While a certain number of survivors, particularly the smokers, did, indeed, develop manifestations of pulmonary hypertension, this has not proven to be the large problem that was feared. Most of these patients lived long, productive lives, as indicated by the Weissbergs and Weissberg series. The majority of them would have died absent these interventions. Even if not fully rehabilitated, these patients were often rendered noninfective and thus could return to the community. Life-threatening bleeding frequently became manageable, and most important, many patients were kept alive for the later arrival of resectional surgery, which allowed them to become essentially cured. As the Weissbergs found, many of these patients, when they did receive resectional surgery, were no longer infective, as evidenced by negative tissue cultures. This was true even in the earlier cases in patients who had not received chemotherapy and was almost universally true in those who did. The fact that none of the patients in the present series harbored viable organisms is a further testimony to the effectiveness of the chemotherapy, an advantage that would not have ensued had not the interim collapse therapy allowed them to live into the antimicrobial era.

After the romanticism of Puccini and Voltaire, followed by the therapeutic attempts of Trudeau, leading to the realism of Orwell, and culminating finally in the triumphs of Alexander, Waksman, and Hinshaw, the control and hoped-for final conquest of tuberculosis is a metaphor for progress in medicine, from the purely empirical into the modern scientific, and now genomic, era.

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The Challenge of Sarcoidosis

It is well-recognized that sarcoidosis is a multisystemic disorder of unknown etiology that can present with a myriad of signs and symptoms, but most commonly presents with pulmonary, ocular, or cutaneous involvement. Nonetheless, well over 100 years since its first description, unanswered questions about sarcoidosis abound. That is not to say that great strides have not been made in understanding the underlying pathogenesis and pathophysiology of the disease. However, with respect to clinical management, we remain at a point at which significant breakthroughs appear as a distant goal on the horizon, with no guarantee of attainment.

In addition to being of unknown etiology, predicting who will get sarcoidosis or who is destined to experience a “bad” clinical course has proven elusive. While a genetic predisposition or susceptibility to disease appears to be certain, with an impact on the clinical manifestations and outcome, the ability to predict an individual’s clinical course is limited. In the area of treatment, significant controversy and uncertainty remain. Relatively recently we have moved away from a position of treating all patients with sarcoid to, perhaps, a period of expectant observation in anticipation of spontaneous remission when possible. However, a role for long-term treatment, even in the absence of symptoms or deterioration, has been advocated and continues to be debated.

What makes sarcoidosis so challenging? There is a multitude of possible answers. Let us take the numerical problem. Perceived as a rare disease (which it is not), sarcoidosis tends to follow a generally benign clinical course in the majority of patients. Although reports vary, it is estimated that approximately half of all patients have no or minimal symptoms or signs, approximately 40% have moderate disease, and < 10% have severe disease. Sarcoidosis suffers from a set of unfortunate perceptions. Who can get excited about a disease considered “usually a self-limited disease”? In addition, the very nature of the disease, its ability to affect literally any organ or body part, the highly variable nature of the clinical course, and the varied symptoms and signs emanating from specific organ involvement all contribute to the fragmentation of our clinical experience and the data in the published literature. Clinical sarcoidosis is a difficult disease to study. Definitions of disease, organ involvement, severity of disease, and treatment strategies remain highly varied and as individualized as the number of investigators reporting their experience.

Some of these difficulties are being addressed.