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THE PRINCIPLES OF TREATMENT OF TUBERCULOUS
LARYNGITIS.*

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THE statistics of the pathological department of the Brompton Consumption Hospital show that the larynx is affected in over 50 per cent. of the cases which succumb to pulmonary tuberculosis. As 70,000 persons die annually in the United Kingdom from this disease, at least 35,000 of them would have claimed our help in diminishing their sufferings from tuberculosis of the larynx. The statistics of averages warrant us in saying that there are in this country at least 75,000 who require our aid in arresting or easing the progress of tuberculosis of the larynx. The widespread character of this disease is therefore in itself a claim upon our attention; and when we remember the long-drawn-out sufferings which may accompany it, and the youth of the majority of its victims, our humanity is keenly stimulated on their behalf.

The moment seems opportune for briefly reviewing the principles which may guide us in the treatment of tuberculosis of the larynx, for not only must we readjust older views to the modern light which has come upon the scene, but such an occasion as the present Congress rarely occurs for supplementing the experience of the laryngologist by that of the general physician and the patho-

* A paper read before the British Congress on Tuberculosis, July, 1901.

logist. That this review is very necessary has been impressed upon me by the perusal of a large number of the most recent textbooks on laryngology, few of which contain any reference to the treatment of laryngeal tuberculosis by modern hygienic methods. The frame of mind of many laryngologists is reflected in a recent paper by Dr. Johann Sendziak, in which he makes mention of the "rational—that is, the surgical—treatment"* of this disease, as if any method of treatment short of surgical was not worthy of being denominated as reasonable, and as if hygiene and rest were of no avail, and the *vis medicatrix nature* a myth.

Our principles of treatment are guided by clinical experience, but, when available, are based on pathological knowledge. The pathology of tuberculous laryngitis is rendered difficult by the complexity of the anatomical arrangement of the larynx. The varieties in the structure of the mucous membrane and submucosa, the functions it performs, the proximity of tendons, ligaments, muscles, cartilages, and joints, the disposition of lymphatics and vessels, the occasional movements required in deglutition and the constant rhythmic action of the vocal cords in respiration, are all points which have to be taken into consideration. While the morbid histology of tuberculosis can be so readily studied in the larynx that Virchow recommended it as one of the best opportunities for observing the process, yet the complicated nature of the larynx renders an investigation of the anatomical conditions an equally important part of our task.

Tuberculous affections of the larynx have been classified under four categories :

- (a) Superficial ulceration commencing from the surface ;
- (b) Infiltration, followed by
- (c) Ulceration ; and
- (d) Tumour formation, or tuberculoma.

This classification is, of course, somewhat arbitrary. It is seldom that two or more of these forms are not combined when a case first presents itself. As there is little doubt that in the large majority of cases infiltration precedes every other process, it is deserving of particular study as to its situation. It commences in the subepithelial layer, and when it takes place in regions where the mucous membrane is closely adherent to deeper tissue, and particularly to cartilage—as in the epiglottis, vocal processes, and arytenoids—it is very apt to spread to deeper parts, leading to perichondritis and necrosis of cartilage. Although the mucous membrane of the vocal cords is closely attached to the underlying

* *Journal of Laryngology*, May, 1901.

tissue, the absence of subjacent cartilage renders infection of this part of the larynx a less rapidly destructive process. On the ventricular bands there is still less danger of immediate spread to adjacent cartilage.

Of all the various situations in the larynx the most frequently attacked is that of the arytenoids and the neighbouring inter-arytenoid space. Lake found this part affected twice as often as the vocal cords, and three times as often as the epiglottis and ventricular bands.*

In the early stages of such cases the vocal cords not only show a want of tension, but careful inspection will show that their movements are impaired both in adduction and abduction. This tendency to remain in the natural cadaveric position (*i.e.*, the position of rest), the inter-arytenoid thickening, and the consequent dysphonia, have inclined W. Fowler to look upon tubercular laryngitis as chiefly a joint disease. He supports his view by the record of between forty and fifty autopsies of tubercular laryngitis, and as his knowledge as a laryngologist helped to render these examinations very complete, I think the results deserve careful consideration. "In every case," he writes, "the greatest seat of the mischief was in the immediate neighbourhood of the crico-arytenoid joint, and the joint itself was always implicated. The deepest part of the ulcer, when ulceration existed, was always immediately in front of the joint, and the joint not only communicated with the floor of the ulcer, but was also more or less disorganized. In many cases the arytenoid was a loose piece of dead cartilage."†

The pathology of laryngeal tuberculosis requires still further study, but in any case we seem warranted in assuming that, as in other parts of the body, the first process is one of infiltration. Universal clinical experience and pathological observations concord in establishing the fact that in a large majority of cases this infiltration first takes place in or about the arytenoid joints. Other parts are occasionally attacked primarily; the epiglottis less frequently than any other.

Leaving now for a moment the pathological aspect of the subject, let us consider it from the result of treatment. Writing in 1880, Morell Mackenzie observed, "It is not certain that any cases ever recover," and he states that he only knew of four in which he had reason to believe that the disease was entirely arrested.‡

* "Laryngeal Phthisis," London, 1901.

† *Intercolonial Medical Journal of Australasia*, October 20, 1898.

‡ "Diseases of the Throat and Nose," vol. i., p. 383.

This view has been somewhat modified in the succeeding twenty-one years by the work of Moritz Schmidt, Krause, Heryng, and others. Their work has, unfortunately, diverted attention too exclusively to the possibility of exterminating the disease from the larynx by knife and caustic. Recoveries have, indeed, been claimed under various treatments, but we must remember that arrest will take place in the larynx, as elsewhere, without any local treatment whatever. When reaction and resistance of neighbouring tissues are sufficiently vigorous, the advance of infection is checked by the fibroid change, which is the natural and desirable process of cure. In many cases the recovery is deceptive; partial cicatrization of an ulcer may take place in one part, or retrogression of an infiltration occur in the region visible in the mirror, while the process may be spreading in the depths of the tissues, or in such parts as the ventricles of Morgagni and the subglottic region. Besides, the foreshortened image we see in the mirror is a very unsatisfactory picture of the posterior laryngeal wall—the most important region in tuberculosis—and is always inadequate as regards the parts lying below the cords. Everyone who performs a laryngo-fissure, or opens a larynx on the post-mortem table, is prepared to find disease invariably more extensive than it appeared in the laryngoscope.

But what remains to us of all the various methods of local treatment which have from time to time been vaunted as curative of laryngeal tuberculosis? Their very number is eloquent of their inefficiency, and although some cases may have recovered under treatment, and many may have been locally relieved, yet we need hardly stop to consider whether the various sprays, pigments, insufflations, submucous injections, or intratracheal injections, had more than an alleviative effect, or whether, in the majority of cases, the irritation and reaction they produced did not far counterbalance any possibility of good.

None of the numerous methods which have from time to time secured some attention have ever appeared to me sufficiently rational to make them worthy of an extended trial. On the other hand, their disadvantages and uncertainties were only too apparent. I have therefore been compelled to appeal to the experience of others on this matter, and in doing so will only refer to what we may term the lactic acid and the surgical methods of treatment.

Applications of lactic acid to the tuberculous larynx have obtained such a vogue in the last ten or twelve years that the method has been applied *à tort et à travers*, practitioners in many cases persevering with it while the patient was being prevented, through its effects, from improving generally, or even steadily deteriorating

in health. In many cases I have known of its being applied over unbroken mucous membrane, covering deep infiltrations, or evident perichondritis, the surgeon apparently not stopping to ask himself how this superficial caustic could affect these deep processes, or do more than distress the patient and hurry on the progress of the disease. And now Freudenthal, who used it freely, states frankly that "it ought to be dispensed with as antiquated and barbarous torture of the patients."*

In 1899 Freudenthal subjected twenty-nine cases to surgical treatment without being able to record one single cure.† He then treated his cases of tuberculous laryngitis without curettage, and after a year's observations he wrote: "I believe my patients are just as well and perhaps better off than they would have been with the operation."‡

The extensive and trustworthy experience of Jonathan Wright has led him to the following statement: "The permanent radical cure of the local lesion of tubercular laryngitis is not materially hastened by the various methods of treatment in any but an insignificant number of cases."

That a certain number of apparently permanent cures have been effected is undoubted. I have myself verified such a case, both before and after treatment, which was shown by Dr. Lack to the Laryngological Society of London,§ but the chief point to realize is that even the most enthusiastic supporters of surgical treatment of tuberculous laryngitis admit themselves that the majority of cases are unsuitable even for attempting operative measures. We must also remember that in this small minority of cases the method is painful and distressing; it cannot but react unfavourably on any general condition; and the result is extremely doubtful.

It seems to me that the treatment of the last decade has been based too exclusively on the bacillus as the one and only etiological factor, and that due regard has not been given to more general considerations.

In indicating the slight and unsatisfactory results which have been gained from the direct treatment of laryngeal tuberculosis, I must be understood as only deprecating much of the treatment in so far as it has been regarded as effecting a local cure. Where the progress of the disease—in the lungs and in the larynx—is not stimulated by local interference, then many measures are available

* *Journ. of the Amer. Med. Assoc.*, March 16, 1901.

† *Philadelphia Med. Journ.*, March 25, 1899.

‡ *Medical News*, New York, January 19, 1901.

§ "Trans. Laryngol. Soc.," London.

for symptomatic treatment, and we are well equipped nowadays for soothing laryngeal irritation and cough, easing pain, facilitating swallowing, and thus contributing to the general treatment and the possibility of cure.

We must look elsewhere at present than to surgical measures for a prospect of progress in the treatment of tuberculosis of the larynx. This progress is ready to hand in the making of an earlier diagnosis of local infection. The present is hardly the occasion, even if time permitted, for me to enlarge on the symptoms of the early diagnosis of laryngeal tuberculosis. Besides, the most detailed description of the laryngoscopic appearances could hardly portray a condition which would be recognised by any but an expert, so slight are the early changes and so variously are they combined. "In general," says Grünwald, "it may be said that it is impossible to teach anyone theoretically how to make a diagnosis from the picture in any given case, because, in order to arrive at a decision, one must first learn the development of many successive pictures by long personal observation. Not the picture of to-day, but that of yesterday, and that of to-morrow, must decide for or against laryngeal tuberculosis."* But it is not only from the laryngoscopic appearances that a diagnosis of early local tubercular infiltration, or of even pre-tubercular laryngitis, can be made. We must make a careful and thorough examination of the entire body, and pay careful attention to such symptoms as anæmia, anorexia, dyspepsia, loss of weight and strength, hurried pulse, and even rise of temperature. The previous history of the patient, particularly in regard to hæmoptysis and pleurisy, must be taken into consideration, and the family history should not be forgotten. There are many other indications of early tuberculosis, and these, together with the indications for the employment of tuberculin as a diagnostic test, I must at present leave out of consideration. In this way evidence can often be obtained which will complete the diagnosis of a laryngeal condition which might otherwise be treated as a simple catarrh. In the absence of positive confirmatory symptoms and of other adequate explanation of laryngeal symptoms, we must treat suspicious cases by measures that we know now will avert a condition which, once well established, is almost always incurable. In doing this we are but working along the lines and making the same plea for early diagnosis which has been so forcibly advanced in recent years in the subject of pulmonary tuberculosis.

Once the early diagnosis is made, the treatment is exactly the

* "Atlas and Abstract of the Diseases of the Larynx," 1898.

same as that now employed in pulmonary phthisis—the sanatorium treatment in what should practically be the open air, with rest, hygienic surroundings, and good food. To this must be added more or less strict insistence on voice-rest. This is found to be beneficial in many cases, even when the larynx is not affected. It must be much more so in laryngeal cases, when we realize that in the majority of instances the focus starts near or in the crico-arytenoid joints.

The treatment of catarrhal or obstructive affections of the nose and throat, and of any intercurrent conditions of the larynx must, of course, receive careful and suitable treatment, and it is therefore very desirable that those in medical charge of sanatoria should be skilled in practical laryngoscopy. But the important principle to bear in mind is *primum non nocere*, for even a clumsy examination of the throat may produce more irritation and harm than any treatment can counterbalance.

Briefly recapitulated, the principles to bear in mind in tuberculosis of the larynx are as follows:

1. Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the crico-arytenoid joint.

2. Many cases only present themselves at a stage when the possibility of effecting a cure by local measures is quite untenable.

3. The principle of *primum non nocere* should be constantly kept before us, as many measures which have been tried in this affection have only distressed the patient and hastened the disease.

4. In the light of present knowledge and therapeutic resources, the most rational principle is to attempt to make an early diagnosis of the disease while in an incipient stage. Any persistent or suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis.

5. Once diagnosed, the patient should be treated on the principles laid down in the modern method of sanatorium treatment.

6. Symptomatic treatment should be directed to an irritative, catarrhal, or obstructive condition of the air-passages.

7. In addition, silence should be enjoined, the disuse of the voice being proportionate to the degree in which the focus of infiltration approaches or interferes with the arytenoid joint.

8. In cases where the situation or extent of disease do not warrant an expectation of complete arrest of the process, treatment should be symptomatic, and in many such cases the sanatorium treatment is uncalled for.