

THE
JOURNAL OF LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.

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THE TREATMENT OF TUBERCULOSIS OF THE LARYNX.*

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BEFORE passing to the subject of this paper, I shall shortly refer to the gradual development of our ideas about the treatment, as well as curability, of so-called phthisis of the larynx.

The earliest observations we meet with on the local treatment of laryngeal diseases in general date back to the first century, but those on so-called phthisis of the larynx, however, only to the first half of the nineteenth century—namely, by Trousseau and Belloc, the authors of a work entitled "Phthisis Laryngea," under which name were understood at that time different pathologic processes such as syphilis, tuberculosis, and carcinoma.

The direct treatment, however, of tuberculosis of the larynx commenced with the moment of the epoch-making discovery of the laryngoscope in the year 1858 by Türck and Czermak; but although that treatment was practised with varying degrees of success, the disease continued to be regarded in the light of a *noli me tangere*.

M. Schmidt, of Frankfurt-on-Main, has the credit of directing the treatment of tuberculosis of the larynx to the modern method. This author in the year 1880 gave the basis to the rational—that is, the surgical—treatment of this disease. The subsequent development of endo-laryngeal surgery must be attributed mainly to

* A paper read at the Ninth Congress of Polish Physicians and Naturalists, held in Cracow, 1900.

the introduction of cocaine in the year 1884, for which we are largely indebted to Jellinek, an assistant of Professor Schroetter in Vienna.

We can surely say that cocaine makes a new epoch in the treatment of laryngeal tuberculosis, permitting the execution of endolaryngeal operations, to say nothing of its value as a means of relieving pain and facilitating swallowing in the more advanced forms of the disease.

In the following year we have to notice a further development in the treatment of these lesions. I refer to the lactic acid treatment, a valuable addition to the therapy, for which we are beholden to Professor Krause of Berlin. After a test of fifteen years this remedy continues to hold a foremost place and to be regarded as one of the best.

At about the same time the surgical treatment of laryngeal tuberculosis, which had been begun by M. Schmidt, found an extremely energetic propagator in Heryng, who developed the surgical technique to its present state of perfection.

From that time to the present no departure of importance has been made from the method of local treatment introduced by these two authorities. Numerous monographs have appeared, some large, some small, all dealing with the treatment of the disease, which has also frequently been a subject for discussion at medical congresses. Of the latter I might mention here a very animated discussion upon the question during the International Congress in Rome, and another more recently in Moscow.

In Poland in the year 1888, during the fifth Congress of Polish Physicians and Naturalists in Leopold (Lemberg), Sokolowski read a paper on the curability and local treatment of the disease, basing his remarks upon the valuable material from his polyclinic as well as from his private practice. This material was in the following year (1889) fully worked up* by the author of this report, at that time a clinical assistant.

To sum up the history of the treatment of laryngeal tuberculosis, three principal periods are to be noted :

1. Period of therapeutic nihilism, lasting to the year 1880; *i.e.*, to the appearance of M. Schmidt, author of the surgical treatment in this disease.

2. Period of extreme optimism, caused by the energetic propaganda of Heryng, who recorded so many striking results obtained by him by the surgical treatment of laryngeal tuberculosis that it almost seemed we had attained to a reliable method of dealing

* JOURNAL OF LARYNGOLOGY and *Kronika Lek.*

with such a terrible disease. Soon, however, were to be heard the voices of those calling for reserve, which marked the

3rd, or the latest, period in the treatment of laryngeal tuberculosis—the period of equilibrium.

In the year 1890, at the International Congress in Berlin, in discussing the overrating of the surgical treatment of laryngeal tuberculosis, Professor Schroetter was of the opinion, and in this I agree, that we are never able to remove so completely all that is pathologically affected, as to prevent recurrences, and that it is not every larynx that can tolerate such energetic treatment.

During the following International Congress in Rome in the year 1894 the question of the local—i.e., surgical—treatment of laryngeal tuberculosis was again the subject of animated discussion.

Again, during the International Medical Congress in Moscow, in the discussion upon Gleitsman's paper, "On the Progress in the Treatment of Laryngeal Tuberculosis since the last International Congress," Professor Chiari expressed himself in general in a pessimistic manner on the possibility of a permanent cure of laryngeal tuberculosis, which he had never observed.

Is laryngeal tuberculosis curable? This is a question of great importance upon which I must dwell before passing to the treatment of this disorder.

Up to the year 1887, and even later, it was generally thought that tuberculosis of the larynx was an incurable disease—that it was, as I have said, something of the nature of a *noli me tangere*; as, for instance, cancer of the larynx. Fifteen years ago Orth expressed himself on the above question in the following manner: "Ich habe weder selbst je eine gänzlich ausgeheilte Larynxtuberculose gesehen, auch ist meines wissens ein solcher Fall anatomisch beschrieben und untersucht."

We ought not to have to wait long for such a case of undoubted recovery, for in the year 1887 Heryng, in his work on "Surgical Treatment of Laryngeal Tuberculosis and its Curability," described a case occurring in an old woman aged seventy, with a fibrous form of pulmonary phthisis, as well as cicatrization of tubercular ulceration on the posterior laryngeal wall, which was demonstrated under the microscope by the author to be tubercle. From that time the question of the curability of laryngeal tuberculosis was definitely solved; moreover, clinical observation has more than once proved the possibility of complete recovery from this disease, both by *spontaneo modo* as well as, still more readily, under the influence of suitable treatment.

Such cases every specialist has had occasion to observe. On

the other hand, it must be admitted that recoveries are exceedingly rare, and that certain favourable conditions are necessary, and of these a predisposition of the organism to the production of fibrous tissue in the lungs, as well as in the larynx, is most essential.

After this somewhat lengthy preface, I pass to the subject of my paper—the treatment of tuberculosis of the larynx. This consists in general and local treatment. The latter may be divided into therapeutic, surgical (endo-laryngeal), and surgical (external). I shall confine myself to the local therapeutic and general treatment.

The local therapeutic remedies may be grouped in three divisions—the milder remedies, the more active, and the palliative.

The *milder remedies* we use in the initial stages of laryngeal tuberculosis—as, for instance, in cases of catarrh, limited, it may be, to the posterior wall of the larynx or to one vocal cord (choroiditis unilaterialis)—which, as is known, is characteristic of the disease. These remedies are also useful in the later stages, with extensive ulcerations and infiltration of the larynx, when the general condition, as well as that of the lungs, contra-indicates the more drastic local applications.

In the earliest stages local treatment is as a rule superfluous; insufflations of powders at times are indicated, such as resorcin, or of astringent drugs such as alumen, or inhalations—Ems water, menthol, balsamum peruvianum, etc.

In the very advanced tuberculous processes of the larynx and lungs, with hectic symptoms, as fever, weakness, sweats, and evidence of destruction of the lungs, depending on secondary infection with staphylo- and streptococci, antiseptic drugs before all are needed in the form of inhalations. For instance, of those above-mentioned balsamum peruvianum, or insufflations of iodol, arystol, dermatol, europhen and orthoform, the last, besides being an antiseptic, possesses also a marked analgetic action.

Closely connected with this latter group is the *symptomatic treatment* of laryngeal tuberculosis. I refer to the desperate cases, in which treatment, in the curative sense of the word, being of no avail, is conducted only with a view to afford relief to the patients in their sufferings and to facilitate the taking of nourishment. In these cases cocaine and eucaine render excellent service, being remedies with which it is impossible to dispense. It is best to apply these drugs in the form of powders, which the patient himself can do by means of specially constructed insufflators. Cocaine and eucaine can also be applied in the

form of solutions, and then we use them stronger (20 per cent.). Pastilles composed of cocaine and antipyrin, as recommended by Avellis, are also useful in these advanced cases.

I regard, however, as quite superfluous the submucous injections of cocaine on the posterior wall of the larynx by means of a special syringe, as advised by Heryng and Fraenkel. Of late cocaine in the symptomatic treatment of laryngeal tuberculosis has found a great rival in orthoform, which was introduced as a therapeutic agent by Einhorn in 1897, and was specially used in the treatment of laryngeal tuberculosis by Freudenthal of New York in the year 1899. It is really an excellent drug, which, applied either in the form of powder or in connection with menthol (Freudenthal: Menthol, 1·0 to 5·0, 10·0 to 15·0; ol. amygd. dule., 30·0; vitelli ovorum, 25·0; orthoform, 12·0; aq. dest. q.v. ad 100·0: fiat emulsio), by means of brushings or laryngeal syringes, produces anæsthesia and relief from pain, lasting usually a couple of hours, and at times as long as twenty-four hours.

In cases I have treated with orthoform I have observed not only an analgesic action, but also a favourable action upon the tuberculous lesions themselves, so that I personally regard this drug as a very precious acquisition in the local therapy of laryngeal tuberculosis.

In addition to these two powerful drugs, which are necessary, especially in the severe forms of laryngeal phthisis, we are sometimes obliged to have recourse to morphia, which may be subcutaneously injected in the region of the larynx. More recently Freudenthal has advised extractum suprarenale for the relief of pain.

I now pass to the important group of remedies of a more potent nature and producing a more marked reaction. Here also, as in the surgical treatment, absolute contra-indications are the miserable general state of the patients, as well as very extensive changes in the lungs.

Of these remedies, before all we must place first *lactic acid*, introduced, as I have already remarked, in the year 1885 by Krause, and which is still, in my opinion, one of the most efficacious drugs in the treatment of laryngeal tuberculosis; and this opinion is shared by most of the experienced laryngologists. Schroetter, in his excellent lectures on diseases of the larynx, expresses himself as to this drug in the following manner: "Till now I know no other drug with which we can obtain so much amelioration as well as, relatively, such a considerable number of recoveries." Of this opinion is also, among others, Schech.

In order to obtain, however, favourable results, we must apply the remedy rationally, as well as choose the cases suitable for the treatment.

In the first place, I agree entirely with Schech that we must begin with stronger solutions—namely, 50 per cent.—and quickly pass to the pure lactic acid. Generally the drug must be applied energetically by rubbing, and until a brown coloration of the surface is produced by the lactic acid coming in contact with the blood.

It is also important that the intervals between the applications should be of sufficient length (*i.e.*, one or two weeks) to allow the complete separation of the dead epithelium. I agree with Schech that the most suitable cases for the lactic acid treatment are those in which ulceration has taken place. I have, however, observed favourable results also in cases of tuberculous infiltration, especially of the epiglottis. I ought to mention here that I am not in favour of the submucous injection of lactic acid, as recommended by Hagen, Heryng, and Gleitsmann. In suitable cases the combined treatment is of service—that is, the rubbing in of the pure lactic acid after a previous curettement of the degenerated tuberculous tissue, especially in the posterior wall of the larynx.

Another very efficacious remedy in the treatment of laryngeal tuberculosis is *phenolum sulphuricum*, introduced by Ruault of Paris in 1895, and afterwards recommended, among others in Poland, by Heryng and Przedborski, who even regard it as a specific in this disorder. We apply it with a brush in 20 to 40 per cent. solution. This drug, in my opinion, is especially suitable for the treatment of ulceration—not too extensive—of the vocal cords and the posterior wall of the larynx, and is less useful in treating lesions, such as extensive infiltration, of the epiglottis.

In the same group of pharmaceutical remedies which seem to act favourably in laryngeal tuberculosis we must include *parachlorphenol*, first used in the treatment of this disease by Simanowski of Petersburg in the year 1894. This drug, however, has not until recently found many supporters, amongst whom are Spengler and Logucki. The drug is applied in 5 to 10 per cent. solutions in glycerine.

I must say that my experience so far with parachlorphenol is not too favourable; the vomiting it provokes is an obstacle to its use.

Mention must here be made of *menthol*, recommended by Rosenberg in 1885 to be applied in 10 to 20 per cent. oily solutions by means of a laryngeal (Stoerk's) syringe. The superiority

of this drug to the previous one is in its more pleasant taste and anæsthetic action.

Of other remedies seeming to have more or less favourable action in laryngeal tuberculosis I may briefly mention the following: The mixture of phenol with menthol, as well as the new drug menthorol in 5 to 15 per cent. solutions (Sokolowski); 10 per cent. carbolic in glycerine (Gottstein and Kayser); creosote, 1.5 per cent.; spir., 40.0 per cent.; glyc., 60.0 per cent. (Cadier, Balmer); balsamum peruvianum with collodium (Schnitzler); 1 to 5 per cent. creolin (Schadewaldt, Schnitzler); 10 to 20 per cent. resorcin (Fronstein); 50 per cent. peroxide of hydrogen (Gavino); 1:1000 perchloride of mercury (Balmer); lignosulphit, recommended of late by Heindle; acidum chromicum (Heryng, Bayer); pyoc-taninum (Scheinmann, Rosenberg, Schech); calcaria phosphorica, 10.0 per cent., cocaine 0.2 per cent., ol. menth. pip. gtt. v. (Schnitzler, Rethi); iodoform (Beetz, Kuttner); diiodoformi 8 per cent.; cocaine, 0.08 per cent. (Ledue); zincum chloratum (Lannelongue's method), in the form of injections, recommended by Caster; creosote and guaiacol (1 to 5 per cent.), or with menthol (5 to 10 per cent.) for subglottic injections, applied by Botey and myself in laryngeal and pulmonary tuberculosis; formaldehyde, $\frac{1}{2}$ to 10 per cent. (Gallagher); 4 per cent. para-monochlorphenol with 25 per cent. lactic acid (Botey); electric light (phototherapy, Freudenthal); finally, the newest remedy, thiocol (0.1 to 0.15 per cent.), with cocaine (0.4 per cent.) and boric acid (2.0 per cent.), finds a very great advocate in Fasano.

After having tried almost all the above remedies in laryngeal tuberculosis, I must say that the greater number of them might be removed without being missed.

I pass now to the *general treatment* of tuberculosis of the larynx, a very important part, which, unluckily, the too ardent adherents of surgical treatment in this disease in many cases disregard, forgetting that laryngeal tuberculosis, as a primary process, exists only exceptionally, and that it is almost always combined with a similar process in the lungs.

The general treatment is, before all, climatic. We must, however, send to the summer and, especially, winter climatic resorts only such patients in whom the general health, as well as the condition of the lungs, is still satisfactory and whose means permit of the journey and stay being made under conditions most favourable for such patients.

The condition of the larynx must also be taken into consideration. Minor changes, which do not require local treatment, are

usually suitable for such journeys. The more extensive tuberculous lesions in the larynx, such as require special local treatment, must be treated at home. This is rendered necessary by there being but few climatic resorts in which we find the specialist sufficiently acquainted with laryngology.

The contra-indications for sending patients with laryngeal or pulmonary tuberculosis to climatic stations are sudden decline of general health, fever, gross changes in the lungs, diarrhoea, dysphagia consequent upon gross lesions in the larynx, stenosis of the larynx requiring constant and special care in order to avoid dyspnoea threatening life, hæmoptysis, and last, but not least, the want of the suitable means.

I pass now to the choice of climatic resorts for laryngeal phthisis. I agree with Schech that the most suitable are those which afford sufficient humidity and are absolutely free from dust as well as rapid changes of temperature. Ajaccio, Capri, and perhaps Cannes and San Remo, may be mentioned from amongst the winter resorts, and Falkenstein and Reichenhall of the summer resorts.

Besides the purely climatic resorts, there are others in which the mineral waters, as well as the pure mountain air are of service in the earlier stages of the disease. To these places belong Szczawnica (in Poland), Ems, and Gleichenberg.

Although the treatment of laryngeal tuberculosis has undoubtedly made great progress, complete and permanent cures are still very rare. We must not forget that the so-called cured cases of laryngeal tuberculosis die sooner or later from pulmonary tuberculosis, and until we have established a remedy for pulmonary tuberculosis it is idle to speak of recovery from laryngeal tuberculosis in the full sense of the word.

THE BRITISH CONGRESS ON TUBERCULOSIS.

THE programme of the British Congress on Tuberculosis, to be opened in London on Monday, July 22, under the patronage of the King, will be read with more than ordinary interest by all engaged in the study and treatment of diseases of the upper air passages. At a glance it is apparent that tuberculosis will be discussed in all its amplitude. The work will be divided into four sections, which will meet every morning from Tuesday till Friday, from 9.30 to 1.30. The official subjects will be first disposed of, some of which will be jointly discussed.