THE TREATMENT OF TUBERCULAR LARYNGITIS.*

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In tubercular laryngitis the mortality is so alarmingly high that most physicians look upon such cases as hopeless from the start, and therefore resort to palliative instead of to radical treatment. The chief reasons of the high mortality are that almost invariably a laryngeal affection is transmitted from a previous pulmonary infection, thus there are two sources of danger and what is still more serious, there is a feeble resistance to the disease, as shown by the extension of the tuberculosis from one organ to another during the first stage of the attack. For these reasons the physician has to contend with the disease in two different organs of a person whose physique is peculiarly ill-fitted for these conflicts. Moreover, the local treatment of the laryngeal tuberculosis to be successful demands special skill, experience, courage and patience on the part of the physician, and faith and fortitude on that of the patient.

It is no wonder then that the physician engages in the conflict in a half-hearted way, knowing the fearful odds against his success. But it is worth while to fight the enemy with vigor, even though statistics taken of cases treated by specialists in a favorable climate, show but 12% arrested in those in whom ulceration had occurred previous to the treatment, and in those in which ulceration had not taken place no more than 30% arrested. The saving of the lives of even this meager number is a good work, but a still better one is the saving of the larger number from the direful distress of an unchecked tubercular laryngitis, and this can be accomplished in most instances by judicious local treatment, even though many of these cases die eventually of phthisis.

While it is true that the ultimate results of laryngeal treatment are greatly influenced by the accompanying pulmonary disease, yet what can be done by wise topical treatment over and above the general treatment, is shown by the following statistics of cases treated in Colorado. Taking the results in laryngeal cases without considering the ultimate fate of the patient, there was permanent arrest of the local disease in 64%; temporary arrests in 5% additional cases, in which latter the tissues again broke down shortly before death. Looking at the ulcerated cases alone, 50% healed permanently, 10% temporarily.

* Read at the Tenth Annual Meeting of the American Laryngological, Rhinological and Otological Society, held at Chicago, May 30, 31 and June 1, 1904.

Having given thus briefly the reasons why laryngeal tuberculosis should be treated to its fullest extent, let us now consider the pathologic conditions. In the large majority of cases they are broadly these: A tubercular infiltration of the sub-mucous tissues which is continuously being added to by the absorption through the lymphatics of bacillary material from a pulmonary focus. The mechanical pressure of the tuberculous masses thus formed causes swelling of the tissues with anemia or hyperemia of the mucous membrane and resulting in varied forms of sub-acute laryngitis to which may ensue ulceration of the mucous surface, and later perhaps, perichondritis and necrosis of the laryngeal cartilages. When the pulmonary disease gives rise to profuse discharges of germ-laden sputum and racking cough the laryngitis is increased and direct re-infection may occur.

The first essential of treatment is to place the patient under the best hygienic conditions, especially under the open air treatment in a good sanatorium. The second is a change to a good climate of which the preferable elements in their order, are, dryness, sunshine, cool air and a high altitude. The third essential is local treatment by an experienced laryngologist.

As the pathology of the disease shows that its stronghold is beneath the surface, and that it is receiving reinforcements through lymphatic and perhaps vascular channels from the lungs. The most important matter is to induce local fibrosis so that the larynx may be walled off from fresh tubercular invasion, and the healthy margin of tissue stimulated to absorb, destroy or shut in infected areas. At the same time the superficial surfaces should be put in good condition by cleansing, stimulating and disinfecting sprays or applications, and when ulcers are present, by direct treatment of them so as to surgically remove diseased tissue and to penetrate beyond its area with cauterizing acids. During this period as much rest as possible should be given the diseased organ by abstention from talking, and the administration of as much nourishing food as can be digested, given in forms which in swallowing cause the least possible amount of pain.

A non-tuberculous laryngitis is a not infrequent precedent, and accompanying conditions of pulmonary tuberculosis. I do not believe it is a cause of tubercular disease in the larynx, but when it exists previously to a tuberculous invasion, it becomes an aggravation of it, and often masks its approach. On the other hand a tubercular infiltration does itself produce more or less inflammation and catarrh of the mucous membrane. Tuberculosis of the larynx never appears at the beginning in a symmetrical form, unless it is hidden by a general non-specific laryngitis. When the tuberculosis precedes

the laryngitis, there is usually an anemic appearance in the early stage and with very little irritability, but there is generally a weak or husky voice.

In the cases in which there is hyperemia, and also hyperesthesia, there is usually a simple laryngitis, and if the nose is investigated a rhinitis with some obstruction. Treatment of the nose will often clear up the laryngitis. Even when the laryngitis is tubercular and the nose or naso-pharynx is diseased, they should be treated, and as radically as the case demands and the general condition of the patient permits. Much more can be done safely than is usually thought, and there is practically no danger of tubercular infection of surgical wounds.

With respect to the treatment of the mucous membrane, cleansing is of the first importance, and this is best brought about by the use of watery solutions, of which Dobell's is the type, followed by any of the varied astringents, stimulants, sedatives or alteratives found best for the exact condition. Inhalations are often of service, warm when there is much irritability, but usually cold are best, especially the compound tincture of benzoin one part, glycerine one part, and alcohol one and a half parts, used in a Globe inhaler. It is at the same time of great benefit to a bronchitis accompanying the tuberculosis of the lungs.

In cases of tubercular infiltration of the larynx without ulceration, the best treatment is by sub-mucous injections of about 20 minims of a 15 per cent watery solution of lactic acid, preceded by an injection of cocaine and adrenalin. This is painful but not extremely so. It does not have to be repeated often, at least not into the same tumefaction, and has a remarkable effect in locally arresting the disease. Lactic acid I have found far better than creasote or any other remedy. Lugol's solution with an equal quantity of alcohol or glycerine painted lightly over the parts two or three times a week is also of service. When there is decided pain, particularly on swallowing, there is in most cases an ulcer existing which cannot be seen owing to the swelling of the parts. A frequent seat is the under surface of the epiglottis. If a cotton laden applicator with cocaine be drawn somewhat sharply over the suspected part, and an ulcer is present, blood will often show on the cotton, and more pain will be complained of than after application to other parts of the larynx. The ulcer discovered, or even suspected, should first be rubbed with a 10% solution of cocaine, and then with lactic acid full strength. This does not hurt any more at the time than when the acid is diluted, and it is more efficacious, because it cauterizes the ulcer and leaves it protected. If it also touches sound tissue it does

no harm. This procedure almost invariably after a few hours brings mitigation of the pain. Should it return it is then best before re-applying the acid to curette thoroughly. The best procedure when curetting is determined upon, is to first rub in lactic acid of full strength freely, and then about three days later to curette. The reason is that the ulcer has thus been made aseptic, and there is therefore less danger of reinfection when the curettage is carried down deeply. I seldom find any other treatment of ulcers, whether concealed or visible, equal to this, and when done thoroughly, it does not often have to be repeated.

When pain is not due to ulceration but to pressure or to inflammation around the arytenoid joints, the sub-mucous injections or the surface application of iodine or a 12% solution of ichthylol or scarification may relieve. A 50% spray of adrenalin used by the patient often gives comfort for lessening tumefaction. With regard to the application of orthoform to ulcers, I do not like it. When used sufficiently to deaden pain it has a disintegrating effect upon the tissues and increases the ulceration. Generally the patient gets far more satisfaction from his own use of Dobell's solution as a spray than from cocaine or any other sedative. Codein given internally in sufficient doses helps control cough and takes the edge off the pain.

With regard to curetting, I rarely use the double curette, and do not believe it is possible, or indeed advisable to remove all the tuberculous material. If you get beyond the base of the ulcer, you are liable to infect new tissue, and mere removal of the tuberculous material then present, does nothing to prevent more being conveyed from the lungs. I believe that the benefit derived from reasonable curettage is in the removal of an incubus, and still more in its stimulating effect upon the tissues, bringing fresh, healthy blood to the parts, antagonizing the chronic congestion inducing phagocytosis, and causing fibrosis. The lactic acid acts also as a stimulant, and by its peculiarly penetrating power and its affinity to select and destroy diseased tissue, destroys the ulcer, helps healing, and by forming an eschar, protects the wound.

Time does not permit me to further dilate upon this topic, but I would say once more in closing that, in my opinion most physicians are far too timid in handling a tuberculous larynx, resorting in their blindness to superficial treatment, and to sedatives in their mistaken kindness, when in most cases they had far better use the radical measures herein advocated.