SUGGESTIONS AS TO THE THERAPEUTIC VALUE OF REST IN THE TREATMENT OF LARYNGEAL DISEASES

BY

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NEW YORK.

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IT has become almost an axiom in the treatment of acute inflammatory affections of a surgical nature to affirm that absolute rest is essential to cure. Take, for example, an acutely inflamed joint, and imagine for an instant the foolishness of a surgeon who would attempt to relieve his patient rapidly and effectually, and at the same time to permit him to walk about continually, or intermittently, rather than to rest quietly in bed. Like treatment seems to any one of us equally foolish if it were a question of a fractured or dislocated limb. Nor is this all. Even medical art has correctly seen in very many instances the great value of rest in the curative treatment of visceral troubles. Quiet and perfect tranquility are counselled wisely to those who are sufferers from an acute cerebral affection. With a similar thought in mind, the chest of an individual who labors under the pain and distress of an acute pleuritic affection is tightly strapped, so as to ensure at least partial immobility. One who suffers from acute enteritis is not permitted to walk, and inflammation of the peritoneum is cared for more particularly still. Not only do we give our patients under these circumstances perfect repose of body, by in-

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sisting upon the importance of their lying flat in bed, but we likewise add repeated small doses of opium to our prescriptions, in order to abolish for the time intestinal peristaltic action.

With regard to the constantly acting organ, the heart, already the minds of physicians are awakened, and they see now the great importance of rest in the treatment of acute endocarditis in the limits of what is possible. No longer has it the terrors of a bygone era, if pathology has taught us sufficiently well to make us force quiet upon our patients. Let the heart do its necessary work, but no more than is required to pump the blood freely through the capillaries. In this way, as is well ascertained, we shall prevent those sclerotic and contracting changes which inevitably lead to deformities of orifices and valves, and hence to subjective symptoms of a most distressing type.

Has this thought been as yet applied to the larynx? Undoubtedly it has, but in a somewhat imperfect and casual way. Sémon, for example, has written an elaborate article in the *British Medical Journal* not long since (January 24, 1880), in which, while he speaks of general and local medication of acute and chronic laryngitis, also lays emphasis upon the special importance of physiological rest. He goes so far even as to affirm that unless this factor in the treatment be attended to by those who professionally make use of their voice, he prefers to abandon all treatment rather than to subject his patient and himself to ignominious failure. Nor is it only in the case of inflammatory laryngeal diseases that strict attention should be paid to the forcible carrying out of this intelligent treatment, Growths in the larynx, nervous affections, maladies of the laryngeal articulations, phthisical ulcerative disease of the larynx, and malignant deposit in this organ, may all be wonderfully aided in their treatment by some attention to a manifest indication.

We are too apt, it appears to me, as specialists, to consider the vocal organ as something apart from the other organs of the economy, and to overlook the first elements

of therapeutical science in our efforts to relieve our patient when in a painful state from lesion of its tissues. And yet if we look only for a few moments to the data afforded us by elementary anatomy and physiology, we cannot stray much longer, I feel convinced, from the narrow path of correct thinking and acting, with respect to laryngeal diseases. How is the larynx formed? What are its special functions? Besides a scaffolding made up of several cartilages of different shapes and sizes, we have soft tissues consisting mainly of mucous membrane, muscular tissue, and of intercellular structure, with many vessels and nerves permeating throughout its various layers. As to its functions you are all equally familiar with them.

1. There is the respiratory function.
2. The function of phonation.

In the accomplishment of the former, the intrinsic muscles of the larynx are almost constantly in action. With each inspiration the chink of the glottis widens, owing to the action of the dilator muscles, and the crico-arytenoid articulation is the seat of a rotatory motion outward. Within a very short lapse of time after the effort of inspiration is accomplished, during which there is a brief period of repose for the larynx, the movement of expiration commences. Although more passive in its character than the movement of inspiration, this act, also, involves effort on the part of some of the laryngeal muscles, even during its most tranquil variety. If for any reason of emotional excitement, as physical exertion, the number of respiratory acts increases in a given time, immediately we shall have an augmentation of activity and force in nearly all the intrinsic laryngeal muscles. And just in proportion as the frequency and force of these mechanical movements increase, so do the friction and irritation caused by the ingoing and outflowing column of atmospheric air, become more notable. Phonation, unlike respiration, is ordinarily a voluntary act which is under the control of every individual man or woman. When, however, an articulate sound is produced, no matter what its tone or character may be, the vocal cords must approximate one another and hence contract and be-

come tense, in a greater or less degree. If instead of ordinary conversation for a limited period, with frequent and relatively long times of repose, the voice is employed continuously and with great power, as in the delivery of an oration, or in singing, the activity which is shown by the laryngeal muscles carries with it the conception of work and strain. How shall I apply these facts to my subject?

First, in regard to inflammatory laryngeal diseases. In acute laryngitis the voice should be kept absolutely still. The respirations should be as quiet as perfect repose of body and mind will permit, and there should be no injudicious attempt made by the patient to use the voice even for the smallest home concerns. The reason is obvious. Every time the vocal cords move, and though it be with diminished power, we shall have prolongation of the disease and somewhat increased difficulty in curing our patients. Do we not recognize the utility of rest in acute pericarditis and acute pleuritis, in which affections every effort is exerted, every agent employed, to secure a measure of quiet? If the heart were permitted to continue acting with great violence and without limitation, would not its serous covering become rapidly affected with permanent changes of a serious nature?

Is it not our wish in inflammation of the pleura always to give immobility, at least of a partial quantity, to the thoracic parieties, and thus to prevent extensive friction of the pleural layers and dangerous exacerbations? Analogous indications must be foreseen and attended to in laryngeal inflammations. In acute laryngitis, stop all conversation and all physical exertion except of the mildest kind, and the probability is that "rest, that great fosterer of repair," will give remarkable results, even without other therapeutic influences. Of course, there is no objection, but rather an advantage, to adjoin to the quieting and antiphlogistic action of rest, a similar one which proceeds from steam inhalations, and the application of cold to the throat.

Chronic laryngitis offers a problem of a different sort. Already the vocal cords are reddened, thickened, and somewhat impaired in function. The main thing we must have

constantly in view, is to change the static engorgement of tissue into a more active circulatory condition, and then to watch and guide this to a normal state. If plastic exudation be thrown out between the intrinsic muscular fibrillæ, it is often a matter of time and patience to get rid of it entirely. And on more than one occasion, already, I have made local applications of astringents during many weeks, at regular intervals, without producing any great or good effect. The last traces of chronic congestion and thickening are, as we all know, extremely slow to disappear; but here again physiological rest is our most reliable means of cure, for if the professional efforts of voice which occasioned these conditions be not arrested, all other treatment will indubitably fail. Repose is what the laryngeal muscles, under these circumstances, most require, and if they do not get it, they rapidly lose all contractile power. Moreover, the laryngeal articulations may become involved ultimately if the needed rest is not taken; and in that case a physical obstacle may be developed, which will render it impossible that either laryngeal mucous membrane, or laryngeal muscles fulfil their normal functions. A question of considerable importance arises with respect to the proper treatment of cases of a subacute inflammatory condition of the larynx, especially in professional singers, or among those in other occupations (lawyers, actors, lecturers, clergymen, etc.), who make an exaggerated use of their voice occasionally, or on each successive day. Should we permit such persons to go on attempting the use of their voice as if the vocal cords were in a normal state, or should we place certain restrictions on its use, or should we interdict absolutely all exercise of the voice—in other words, give to the intrinsic muscles of the larynx complete rest for a period of time, which will vary in length according to differences in local physical condition and in rapidity of march toward recovery? For my part, I do not believe an absolute rule can here be laid down. Manifestly, during the first few days of an attack of acute laryngitis, all conversation, and, in fact, all prolonged and exaggerated use of the voice in speaking or singing, should be absolutely

interdicted. When, however, the voice remains somewhat hoarse and feeble after several weeks, and when, upon inspection with the laryngeal mirror, we find the vocal cords are pink in coloration, and that the mucous membrane covering them is swollen, dry and roughened—adjoined oftentimes to insufficient tension in certain, if not in all, phonetic efforts—should we still forbid, absolutely, even its moderate use? Some singing masters tell their patients dogmatically, but ignorantly, to persist in making efforts to tide over the days and weeks of diseased action, to fight off the effects of a cold, in fact to exert their vocal cords quite as much during their time of "hoarseness" as when their voices are quite clear and of normal power. Other masters, more rationally according to me, tell their patients to abstain from all undue exertion under these circumstances; to do only what is essential to keep themselves from losing too much ground during an attack of cold; in fact, to give their voices partial rest. Others affirm that perfect rest of physiological nature is absolutely required, is essential to cure, and on no account will permit the slightest use of the voice until the inflammatory effects have entirely disappeared.

A "happy medium" course is here the true one to follow. The voice should not be permitted to grow rusty, as it were, from prolonged inaction, but the amount of vocal work must be small; it must be made in detached portions; fatigue must be avoided; and so soon as great effort is required to produce certain sounds, as there is aching pain locally, or a sense of fatigue present, all vocal exercises should be stopped at the time and not resumed again until comparative vocal strength and ability have returned. In this matter singing masters would act far more wisely in referring their patients to a professional larnygoscopist, and abiding, in great measure, as regards the vocal exercises of their pupils, by his skilled judgment. We can see and determine in a manner they never can. They have only the rational symptoms to guide them in making a diagnosis; we have, in addition, the knowledge which is derived from physical signs. We can notice and appreciate with our

small mirror the aspect of the interior of the larynx, and carefully watch how the tensor and adductor muscles act, especially during certain efforts of phonation. If, therefore, the cords cannot approximate the median line and leave a slight oval chink between them, even during an attempt at rendering high notes, it shows an evident vocal incompetency which can only get entirely well in time and by means of judicious treatment, the principal factor of this therapeutic method undoubtedly being *complete rest* to the larynx. An opposite course pursued by an ignorant master of singing would lead to very unfortunate results.

I have already had under my professional care, during many months, patients who have injured seriously a fine natural gift by strict obedience to a false hygienic method. How many there are whose vocal powers have become permanently impaired in this manner those among us are alone aware who have had frequent opportunities of watching the future career of persons thus affected. Usually they have been utterly and wrongly deceived by false assurances of rapid and complete cure while still pursuing their vocations without even temporary interruption or rest.

It is a great source of error in these instances to settle the nature of the case and the extent of trouble simply upon data afforded by intralaryngeal appearances. As proof of the validity of this statement, I affirm: 1st; that I have seen patients whose vocal cords invariably appeared red and inflamed, and who, nevertheless, have shown themselves capable of producing very accurate and full notes both in speaking and singing (see *Am. Jl. Md. Sciences*, October, 1875); 2d; that I have seen other patients whose laryngeal mucous membrane was only slightly reddened, and yet they were incapable of coördinating properly laryngeal movements, because the intrinsic muscles had lost much of their contractile power, owing to intercellular infiltration and consequent compression of peripheral nerve fibres. In the first division I hold that moderate use of the voice is not injurious, but is, on the contrary, decidedly beneficial in its action.

In the second variety we should be, I believe, very care-

ful about permitting the voice to be exercised at all. Assuredly we would not allow any unnecessary activity in inflamed muscles elsewhere situated. Why then give sanction to it in instances in which the intralaryngeal muscles are either the seat of an inflammatory state, or, indeed, of its very direct morbid effects as coming from their lining mucous membrane? Of course we cannot prevent the movements of the intralaryngeal muscles which occur during respiration, but we can avoid the additional strain which surely comes from talking or singing. And just as we should interdict walking to a patient suffering from slight subacute inflammation of the endocardium, which had also affected the force of cardiac muscular contractility, so we should forbid conversation, reading aloud, singing, shouting, etc., to anyone having incomplete paralysis of certain vocal muscles, until their function was to a great degree, recuperated. If we pursue a different course, we shall certainly injure our patients, and perhaps relative disability would give place to abolition of function, or moderate dysphonia to complete and more or less permanent aphonia. These effects are known to follow catarrhal inflammation of the larynx very frequently, and yet how many are there, even among skilled laryngoscopists, who pay attention to indications which are the outcome of them in time to ward off future inconvenience and great regret? The acute attack of laryngitis is not in itself so much to be dreaded, in my opinion, if judiciously treated at the time of its acme, as this unfortunate sequela, which is almost the inevitable consequence of neglect, or rather of a lack of pathological knowledge, which prevents a clear insight into the morbid conditions present, and which fails, therefore, to give proper and apt counsel at a time when it is most required. To show conclusively the influence of rest and its therapeutical value in the amelioration and cure of numerous laryngeal diseases, we have but to consider duly the facts which are known to us all with respect to some of the results of tracheotomy.

First.—In chronic laryngitis of simple or specific nature, whenever the breathing through the larynx becomes ex-

tremely painful and difficult, owing to the stenosis occasioned by these affections, we are forcibly obliged to recur to tracheotomy in order to save life. The introduction of the tube has, of course, in itself no direct curative effect upon the diseased condition in the larynx, which is above it. But indirectly it may produce ameliorative if not curative results in morbidly affected larynges. The air is now carried to a great extent through the tracheal canula, and the nasal organ is almost in complete repose. As a result, even without other treatment, the intralaryngeal appearances will be favorably modified. Rarely do we accomplish a perfect cure in these cases, for the simple reason that the disease has usually been permitted to extend too far before tracheotomy has been performed, and we have already within the larynx either the consequences of cicatricial contractions, or ankylosis of the crico-arytenoid joints through an advance of the morbid condition into their structures. But certain favorable results of rest we are sure to remark: After the lapse of a few days there will be diminished red coloration of the laryngeal mucous membrane, and its soft tissues will become less infiltrated and thickened. Sometimes ulcerations of specific nature will improve and even cicatrize before our eyes, when, previous to the operation, they had remained stationary for a long period.

How can we attribute this local change for the better to the exhibition of specific drugs, for usually the same medicines were given in similar doses previous to the operation of tracheotomy, and are not always persisted in for some weeks after its performance? It is scarcely fair to assume, either, that the good local effects are due wholly or in great measure to the improved general condition, when respiration is rendered easy and a plentiful supply of vitalizing oxygen is thus given to the entire system. I believe it far more probable that the rest given to the larynx by the tracheotomy was the essential remedial agent which exercised its remarkable and beneficial power.

Second.—In nervous affections of the larynx, rest by itself may be curative. Several members of this Association will remember in this connection the instance of a man who was

operated upon by me more than two years ago for spasm of the glottis. This patient wore a tracheal canula during seventeen months, and has now entirely recovered. The wound in the neck is closed, and he breathes normally through his larynx. In this case the cause of the laryngeal spasm has never been discovered. What we do know definitely is, that prior to tracheotomy it resisted all remedial measures of medicinal and hygienic nature employed, and it was only after the expiration of the above long period that he was completely cured of his recurrent laryngeal spasms, through wearing a tracheal canula. Prior to taking out the canula definitely, my patient had not had an attack of laryngeal spasm during six months' time.

Third.—Ulcerative phthisical laryngitis has already been cured more than once by wearing a tracheal canula during several months. And my own conviction is, that this operation is one which in similar condition should be resorted to far more frequently than it is, and at a much earlier date of the malady; resorted to not in view of impending death, and only with the hope and intention of giving temporary relief to great suffering and intense dyspnœa, but claimed to be a procedure which should on every account be adopted, with the belief of permanent recovery from the diseased condition which gave the indications for this treatment.

Ulcerative phthisical laryngitis is certainly not tuberculous in the great majority of instances, and hence, in my opinion, is susceptible of cure. Now rest of its structures, freedom from the irritating contact of the surrounding atmosphere will be just the conditions in which this wished-for result is most likely to be attained. As there are really no valid objections to the operation, even if in the minds of some it appears only tentative, why not give it a fair trial whenever the occasion is present?

Fourth.—In morbid growths of the larynx, there is reason to believe that the rest afforded by tracheotomy is serviceable. I have an example which comes to mind as I write these lines. Some three years since I had under my care a man whose larynx showed a morbid growth of considerable size. A great portion of it, however, was readily removed with the aid of Mackenzie's tube forceps.

This was examined microscopically, and found to contain nested cells, and otherwise to possess the structure of epithelioma. Soon after its first removal, this growth commenced again to show itself, and increased so much in extent, as finally to give a cauliflower aspect to the whole pourtour of the larynx, and caused such difficulty of breathing that tracheotomy was performed in order to save life. The results of the rest thus afforded were truly remarkable. The entire aspect of the larynx changed very rapidly; the cauliflower excresences entirely disappeared after a few months' time, and the larynx became almost as smooth in its pourtour as it sometimes is in the hardened, œdematous condition special to phthisical development. In fact, so far as I was able to appreciate, there was no further progress of the localized cancerous infiltration up to within a brief period of my patient's death. The fatal termination was probably occasioned by secondary malignant deposits in the lungs and other viscera.

Fifth.—In cases of traumatic injury to the larynx, with or without subsequent œdematous infiltration, it is almost marvelous to note the good effects of tracheotomy, and consequently of rest to the larynx and of freedom from irritating contact with air. In a few days after the tracheal tube is introduced, the local inflammatory condition subsides in part, and the patient is again able to breathe through his larynx without difficulty. Such, especially, are those instances in which the upper portion alone of the vocal organ has been burned with scalding water, swallowed designedly or by mistake.

Physiological rest is often attainable by the employment of medicines topically applied within the larynx. We all know, for example, that a condition of irritation of the mucous membrane of the vocal organ may lead to recurrent spasm of the vocal cords, or else to frequent and unruly contractions of the intrinsic muscles. Now, sometimes the local use of some well-known astringent, or sedative, will relieve the spasm, or regularize and control the incoördinate movements in an almost magical manner.

To understand in what way this striking result is effected, it is necessary to bear in mind that the laryngeal

mucous membrane and the intrinsic laryngeal muscles are supplied from the same nerve trunk, *i.e.*, the pneumogastric. Whenever an astringent is applied to the irritated membrane, particularly nitrate of silver in weak solution, it combines immediately with the albumen and mucus with which it is brought into contact, and forms a coating for the interior of the larynx, thus preventing the direct irritating action of the atmospheric air, which, previous to its employment, was the efficient cause of the reflex phenomena mentioned. Owing to the physiological rest thus afforded, we soon have a subsidence, and afterward a complete recovery from the distressing morbid condition.

We are familiar with the importance that physiological rest has in the treatment of an attack of hæmoptysis which takes origin in the lungs. We know that all persons thus affected, and especially during the period of the attack and for some time afterward, should strictly avoid all unnecessary bodily exertion, the object being to quiet the general circulation, and likewise to lessen, as far as may be, the movements of the parts near those which bleed. In this way, as there is less tendency to active hyperæmia through diminished functional activity, so there is less risk of repeated spitting of blood. Not only should all active movements be restricted, but all fatiguing conversation must be interdicted, and the most favorable position given to the chest in view of the locality of the hemorrhage. Physiological rest and a suitable position are indicated peremptorily in the treatment of pulmonary hemorrhage; they are likewise essential as precautionary measures to prevent the return of this dread accident; so important are these means in the arrest and avoidance of hæmoptysis, that an endeavor has been made to make mechanical rest (Heather Bigg, London, 1872) by adapting to the diseased chest-walls an apparatus known as the "lung splint." According to Dobell, this splint acts admirably, and may be arranged so as to be fitted to the special requirements of each individual case. To apply this example to a case of recurring hemorrhage of the lungs, I shall have merely to refer to such an one reported by Dr. Andrew H. Smith in the first number of the ARCHIVES OF LARYNGOLOGY.

Dr. Smith's patient was an actor, who had spat up slightly bloody sputa during 14 months, after prolonged use of his voice. This man had not lost weight, and had no constitutional disease.

The blood in this case seemed to ooze out, under ocular inspection, from the unbroken surface of the right vocal cord, and the quantity of it was rapidly increased by an effort of vocalization. Local applications of tincture of iron temporarily stopped the bleeding, but it started afresh each evening under the influence of the exercise of his vocal powers in acting. Dr. Smith terminates this interesting observation by the following statement: "As the patient could not give up his engagement, and treatment without rest was of no avail, he ceased his attendance until a more favorable opportunity should occur." In cases of primary chondritis and perichondritis of the laryngeal cartilages, if we wish to avoid the formation of abscess and the involvement of the crico-arytenoid articulations, thus leading to anchylosis, we should be careful, above every other remedial measure, to insist upon the importance of rest to the larynx; and should therefore forbid all emotional excitement, all bodily exertion, all unnecessary conversation. From what precedes we can judge sufficiently, I believe, of the great therapeutical value of physiological rest in the treatment of laryngeal diseases. To gain its maximum of effect, let it be coequal, as nearly as possible, with the relative amount of laryngeal disturbance, whether it result from disease or traumatism. Viewed in this light I look upon rest as a great aid to Nature in her efforts. At times it will help her to repel threatening laryngeal inflammation of acute type and serious import; at times it will further and indeed complete the work of repair or cure, even in chronic affections of long duration, more than any other known agent which we shall be able to utilize.

Whenever and wherever we are called upon to treat laryngeal troubles, let us bear in mind that the production of physiological rest is the curative principle upon which most of the good effects attributable to other means—medicinal, surgical, hygienic—in the main depend, and we shall then be willing to give to it its genuine value.

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