ERYSIPELAS OF THE PHARYNX AND LARYNX.¹

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It will, I think, be a convenient plan if I preface my remarks on erysipelas of the pharynx and larynx by giving the notes of a case of this disease recently under my care. The high temperature which was attained in this case and the slight amount of discomfort the patient appeared to suffer from the febrile state are particularly noteworthy.

He was a Scotch-Irish American, a farmer, was admitted into the Westminster Hospital on October 26th, 1890, under Dr. Sturges, and was subsequently transferred to my care. For the notes of the case I am indebted to Mr. G. B. James, the house physician. The patient came to the hospital complaining of great difficulty in breathing, sore throat, and pain on swallowing. He stated that he had been in excellent health until the morning of the previous day, when he began making the usual hot and cold. He was hoarse. During the day he became worse, and had considerable difficulty in breathing.

The family history presented no points of importance.

Previous History. The patient states that he has always been strong and healthy, and has not suffered from any serious illness. On several occasions he has had a sore throat, the last attack a year ago. The attacks have never been severe, the patient always recovering in a few days. He has followed his occupation as carman for some years and is exposed to all weathers. No history of rheumatism or syphilis. He is a moderate drinker. No erysipelas in the neighbourhood as far as patient knows.

Present Condition.—The patient on admission appeared to be a strong, well-nourished man. Face slightly flushed. He has difficulty in breathing, worse at intervals and attended with some degree of stridor. There is some retraction of costal margin. Percussion note over whole chest good. Respiratory sounds somewhat tracheal in character, otherwise normal. Respirations 40. Heart's dullness and sounds normal. Pulse 124, very small and compressible. Pharynx of a dark red colour, and generally edematous, especially the uvula. The epiglottis is club-shaped, the ary-epiglottic folds are greatly swollen and the glottis a mere chink. The vocal cords cannot be seen. The patient sweats freely. Urine 1035: acid; no albumen or sugar.

Hot fomentations were applied to the throat, and he was directed to inhale the vapor benzoin. Towards evening he became worse, the spasms of dyspnoea becoming more frequent, about every quarter of an hour. As the general oedema of the pharynx seemed to be increasing the epiglottis, tonsils, and pharyngeal mucous membrane were freely scarified with a bistoury, and immediate relief was afforded to the symptoms. The patient was then placed in the inhaler, and treated in case of emergency, but the patient passed a fair night and was able to take some nourishment. Breathing occasionally attended with stridor.

October 27th. Patient seen by Dr. Hall. Pharynx and epiglottis still very edematous, but less so than yesterday. Patient still breathes with

considerable stridor, and has frequent spasmodic attacks of dyspnea. Nothing abnormal in chest or abdomen. Dr. Hall ordered a 10-grain cocaine to be applied to the throat, and the patient to suck the throat to be painted with 20 per cent. solution of hydrochlorate of cocaine; free secretion of mucus followed and the dyspnea was much relieved. To take 1st. ammon. acet., c. potass. bromid. gr. x., 4tis horis. On examination shortly after the application, the pharynx and epiglottis were seen to be much less swollen than before. Pulse 120, 1st feeble and compressible; respiration 36. Patient took nourishment well, and there was much less stridor during remainder of afternoon. Dyspnea increased at night, and the throat was again painted with cocaine. Patient obtained great relief, and passed a fairly comfortable night.

October 28th. Patient considerably better to-day. Breathing much easier, voice very hoarse though clearer than before; pharynx much less congested; epiglottis rapidly diminishing in size, cords still invisible. Takes nourishment much more readily.

October 23rd. Patient apparently distressed by the high temperature, and not delicious. Swelling of throat and epiglottis still present, but gradually diminishing. It was discovered to-day that the condition of the pulse, which throughout has been very small and compressible, is due to an abnormal distribution of the radial artery, the median artery taking its place in the forearm. Ice collar to throat and other treatment continued. In addition to this he was sponged twice, packed five times, and once packed in ice during the day.

October 30th. Patient much better this morning; voice greatly improved. Much less swelling of pharynx and larynx; vocal cords congested.

October 31st. Better; can swallow easily; voice still hoarse.

November 2nd. Voice returned. Patient much better in every respect.

November 3rd. Larynx healthy.

November 3rd. Larynx healthy.
November 10th. Discharged from hospital quite well.

This case should, in my opinion, be classed under the head of erysipelas of the pharynx and larynx. I have had the opportunity of seeing six cases which I refer to the same category, three in private and three in hospital practice: the three private patients died, whereas the hospital patients recovered. In all the attack was sudden, and in all but one there was marked pyrexia. In the patient whose case I have given in detail the temperature ran very high, and was only brought down by energetic treatment.

CASE II.—A clergyman, aged 49, seen with Mr. May, of Bexley, the inflammation was limited to the pharynx. There was a considerable amount of albumen in the urine; œdema of the lungs followed, and death took place from exhaustion within the week.

CASE III.—A lady, about 50, seen with Dr. Forsbrook, was seized with acute inflammation of the pharynx, which spread to the larynx; urine albuminous. She died on the eighth day from exhaustion.

CASE IV. A publican, aged eighteen, called on Penny, who died after three days' illness. When I saw him on the second day the swelling of the epiglottitis and ary-epiglottic folds was already so enormous as to completely occlude the view of the glottis. Tracheotomy was performed by Mr. Andrew Clark as soon as he could be summoned. The operation gave immediate relief, but a few hours later a blush appeared on the face and neck, and two days after the operation the face became greatly swollen. The patient died suddenly the next day. A *post-mortem* examination was refused.

The two other cases are reported in the *Westminster Hospital Reports*, vols. ii and iv respectively.

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Of recent years erysipelas of the pharynx and larynx has received much attention, and Massei has written an able treatise on the subject in which he gives particulars of fourteen cases of primary laryngeal erysipelas. He understands by this term a colossal acute swelling of the epiglottis and of the ary-epiglottic folds, which stands in no relation to a previous scald or ulcerative process, and which is accompanied by highly marked, extremely tumultuous symptoms, elevation or depression of temperature, dyspnoea, and difficulty in swallowing. Massei distinguishes two forms: in the one the general symptoms are the most prominent, in the other the local changes take the first place, or are at least of equal grade with the general infection. Of my cases, 2 and 3 would belong to the first form and the remainder to the second.

Massei refers the disease to erysipelas on the following grounds:—1. The rapid development and the tendency to wander, as well as the preference for the parts in which the lymphatic network is most developed. 2. The fever and its course entirely corresponding to the fever of erysipelas. 3. The atypical course depending upon the wandering character of the affection. 4. The extension of the process to the lungs, and finally the etiological factor of the occurrence of the disease in groups. Massei does not appear to have attempted to demonstrate the presence of the erysipelas coccus. Cardone (Naples) reports four cases of primary erysipelas of the pharynx. He demonstrated the streptococcus of Fehleisen in numerous preparations. He made cultivations, and subsequently injected rabbits with positive results.

Ryland, of Birmingham, writing in 1837, gives a very clear account of erysipelatosus laryngitis, in which he clearly distinguishes between erysipelas spreading from the external surface of the body, and cases in which the inflammation of the internal organs was unaccompanied by external erysipelas. Some observers do not hesitate to assert that non-traumatic oedema of the larynx is always the result of erysipelas. Gerhardt points out that erysipelas of the pharynx arises on account of the possibility of infection through a physiological wound. That fissures in the epithelium do exist has been proved, especially where lymph follicles abound, as is the case in the tonsils. Hence enlarged tonsils may afford entrance to the septic infection of erysipelas, as they do to diphtheria, scarlet fever, and other poisons. Massei says that the direct causes are small lesions on the base of the tongue, the epiglottis, and ary-epiglottic folds, which favour the immigration of the erysipelas cocci. In cases of recurrent erysipelas of the face the pharyngeal tonsil has apparently been the starting point of the erysipelas, and it is well known that the nose, especially when affected with chronic scrofulous rhinitis, frequently gives rise to facial erysipelas. These facts would emphasise the importance of the careful examination of the nose and naso-pharynx in cases of recurrent erysipelas of the face, and they would also suggest a possible mode of origin of pharyngeal and laryngeal erysipelas, as, if the disease can spread externally, there is no reason why it should not spread internally. Erysipelas may spread from within outwards through the nostrils, through the lachrymal duct or through the Eustachian tube and the external meatus.

Massei believes in the extension of the erysipelatosus process from the larynx into the lungs through the lymph paths, but he also states that the larynx and the lungs may be simultaneously affected.

Erysipelas of the pharynx and larynx, when secondary, usually extends by continuity, but cases have been recorded in which erysipelas of a remote part has been accompanied by erysipelas of the larynx. In reference to the extension of erysipelas from the cutaneous surface internally, and *vice versa*, I would like to ask the question, Does the line of junction between the skin and mucous membrane offer an impediment to the spread of erysipelas, acting like a line of demarcation, as painting with a strong solution of nitrate of silver seems to do? The comparative rarity of erysipelas of the head and face spreading to the pharynx would favour this view.

The subject of acute infectious inflammations of the pharynx and larynx was discussed at the International Medical Congress of Berlin. Massei reiterated his views as to the nature of erysipelas of the pharynx and larynx. Moritz Schmidt makes a distinction between primary acute infectious phlegmon of the pharynx and erysipelas by the less amount of fever in the former, and by the redness being less

intense, and not having a varnished appearance. Semon's view that erysipelas, phlegmonous pharyngitis, angina Ludovici, and similar conditions, are only modifications of the same process differing in their virulence or place of development, seems to me highly probable. Durham expressed the same idea when writing about diffuse cellular laryngitis; he says: "It is probably closely allied in nature to erysipelatosus inflammation, from which, however, it differs in the fact that in it the submucous tissue is primarily attacked and the mucous surface is left free, or only becomes secondarily affected. In erysipelas, on the other hand, the mucous surface is first affected, and the submucous tissue is only secondarily or concomitantly involved." The course of these diseases, and the circumstances under which they arise, are so similar that the slight difference in their starting point is not sufficient to make a separate classification of them necessary. In my judgment there is no more difference between them than between cutaneous and phlegmonous erysipelas.

Sennander, of Upsala, has recorded four cases; two are especially noteworthy on account of the implication of the middle ear.

In all the cases of erysipelas of the larynx that I have seen, there was very little difference in the amount of swelling noticeable on the two sides of the larynx. Schech, however, has described a case of what he termed "Larynx-erysipels," in which the swelling was confined to the left ary-epiglottic fold and ventricular band. If this were, indeed, a case of erysipelatosus inflammation of the larynx it must be altogether exceptional, as it is difficult to imagine that so active a process as erysipelas should limit itself to so small a spot.

It is hardly necessary to say that the prognosis is always grave, not only on account of the local troubles which may with the most unexpected rapidity cause death, but also on account of the general conditions brought about by the disease. The most common cause of death is failure of the heart; to this I attribute the fatal result in my second and third cases; oedema of the larynx may come on so rapidly that death may occur before there is time for the performance of tracheotomy; extension of the disease to the lungs may set up a low form of pneumonia or pulmonary oedema, as in my first case; or lastly, the patient may die from general infection or cerebral complications.

The treatment which I have employed in cases of erysipelas of pharynx and larynx is the following:—The patient should be kept in bed in a room with a temperature of about 60° F. An ice collar should be applied to the neck, and he should have pellets of ice to suck. If the patient be seen early, and the disease is confined to the pharynx, 20 minims of tinct. ferri perchlor. with the same amount of glycerine may be given every three or four hours; if, however, the larynx is implicated, and there is any tendency to spasmodic attacks of dyspnoea, 10 to 20 grains of bromide of potassium should be administered instead of the iron mixture to diminish the tendency to spasm of the glottis. If, in spite of this treatment, the symptoms of laryngeal stenosis increase, the pharynx and larynx may be painted with a 20 per cent. solution of the hydrochlorate of cocaine. This was done in the case I have related in full, and the relief obtained was immediate and most marked. The first effect of the cocaine is usually to cause a profuse secretion of mucus and saliva, and then there is a notable diminution in the bulk of the swollen parts. I first tried the application of cocaine in cases of quinsy, and the results I obtained were so satisfactory that I read a paper on the subject before the Clinical Society in May, 1888. Since then I have repeatedly used it in similar cases, and always with good effect, the patients invariably stating that the relief thereby afforded was most marked; in some cases, moreover, the cocaine seemed to prevent the tonsillitis going on to suppuration. These excellent results induced me to try the application of cocaine in cases of erysipelatosus pharyngitis and laryngitis, and I have been more than satisfied with the effect. In two or three cases of oedema of the larynx in which scarification or tracheotomy seemed inevitable, painting the swollen parts with cocaine has caused such a diminution in the size that respiration has been rendered comparatively easy. If after waiting for half an hour or an hour there is no marked improvement in the symptoms, the parts should be freely scarified, and for this purpose Mackenzie's guarded laryngeal lancet is the best.

Energetic counter-irritation by means of sinapisms to the throat, chest, back, and shoulder-blades has been suggested as a means of determining the erysipelas to the surface. Dr. Bedford Brown² gives the history of two remarkable cases, in which the free application of sinapisms was followed by immediate relief to the symptoms of laryngeal stenosis. In Case 1 there was a manifest subsidence of the inflammatory action and oedema of the pharynx; within a few hours after the application of the mustard a very extensive attack of erysipelas had been developed over the chest and a portion of the lower neck. I certainly intend to try sinapisms in future. Dr. Helbing, of Nuremberg, advocates a similar plan of treatment in phlegmonous pharyngitis. He applies three or four drops of croton oil over the skin, between the angle of the jaw and the larynx. He has found speedy benefit from this procedure. The production of eczema is the only drawback.

Ryland had a very high opinion of the good effect of blisters. "They appear, in fact, to be the external remedies on which our chief reliance should be placed, as they evince a singular power of preventing the extension of erysipelas in other parts of the body."

The application of a strong solution of nitrate of silver (80 grains to the ounce) to the inflamed mucous surface before the onset of oedema is recommended by Gibbs and Durham. Gibbs records a case of erysipelas, extending from the head and neck, in which this treatment gave marked relief. A saturated ethereal solution of iodoform has also been found useful. In view, however, of the good effect of painting cocaine over the inflamed parts I do not advise these plans.

The question of tracheotomy will, of course, have to be considered in these cases, and if death threatens from obstruction to the respiration, it is clearly the duty of the surgeon to obviate the tendency to death by opening the windpipe. In this respect I agree with Cohen, who says: "In presence of asphyxia or excessive dyspnoea, tracheotomy is recommended by Ryland, Moss, and Gibbs; but it is unhesitatingly condemned by Porter, of Dublin, and my own researches into literature have not disclosed a single record of life rescued by its agency. Be it even so, I would recommend tracheotomy, nevertheless, if not for the one chance more it offers to life, at least for the relief it affords the patient. In this case the operation changed the condition of the patient from one of restless, gasping agony to that of tranquil repose, and gave him a few peaceful hours in which to make preparations to meet his God."

The description just quoted from Cohen applies exactly to my third case, and, though the patient died, the relief from the operation was so immediate and complete that there is no necessity to say anything further in justification of the operation, except to mention that Durham states that a favourable result occurred in five out of fifteen tracheotomies performed on account of erysipelatos laryngitis in cases known to him. In view of the unsatisfactory results of tracheotomy, the adherents of intubation have put forward a claim for it in the relief of the dyspnoea. I do not believe for a moment that intubation is possible except in a very limited number of cases of laryngeal erysipelas. William Porter, however, regards intubation as preferable to tracheotomy in these cases. Merrigan records a case in which intubation was attempted and the tube retained for a time; it was, however, coughed up, and could not be replaced on account of the laryngeal swelling. In the great majority of cases the oedema comes on so rapidly that it would be impossible to introduce a tube into the larynx. In all the cases I have seen the glottis has been almost entirely obscured by the greatly swollen epiglottis. Food should be given in a liquid form, strong beef-tea, raw eggs beaten up, and milk. In one case where there was great dysphagia I fed the patient almost entirely by the bowel with excellent result. Stimulants are usually necessary. I have not seen much benefit from internal medicaments. Dr. Bedford Brown, whom I have already quoted, has for some time past used salicylate of sodium in erysipelatos affections attended with great rise of temperature, with delirium and a tendency to cerebral complications, and, more recently, with still better effects, the salicylate of ammonium. He gives it in doses of 20 grains every three hours, and he regards its action as being eminently antiseptic.

² *Journal of American Medical Association*, July 2nd, 1887.

If, as in the case with which I commenced my paper, hyperpyrexia occurs, sponging the patient or packing with iced sheets may be required.

OXYGEN AND STRYCHNINE IN RESPIRATORY TROUBLES.

By COUPER CRIPPS, M.D., M.S., M.R.C.S.

In view of the importance of the subject to which notice has been lately directed by Dr. Brunton and others, I would like to draw attention to an abstract of my M.D. thesis published in the *Liverpool Medico-Chirurgical Journal* for July, 1888. In this I advocated the use of oxygen for the respiratory trouble of coma in all cases, and, amongst others, related a case of opium poisoning which occurred in July, 1885, and which I treated successfully with the inhalation of oxygen, after artificial respiration had been previously maintained for over six hours without, apparently, any permanent benefit to the patient.

As regards the case of pneumonia related by Drs. Brunton and Prickett in the *BRITISH MEDICAL JOURNAL* for January 23rd, in which venesection and the hypodermic injection of strychnine (apparently afterwards employed) failed to produce any marked effect, I may mention that in the case of opium poisoning referred to, dry cupping was resorted to over the chest and back, in order to relieve the extreme congestion of the head and neck, but it appeared to render the respiration more defective, and this was attributed to the withdrawal of blood from the circulation, diminishing its capacity for absorbing and carrying oxygen when presented to it in a dilute form.

It is thus possible that in Drs. Brunton and Prickett's case the venesection was the cause of the respiratory centre failing to respond to the hypodermic injection of strychnine, for in the following case of pneumonia a similar administration of this drug was followed by recovery.

M. B., a gentleman, aged about 42, had been going about suffering from symptoms resembling a mild attack of influenza for five days, and when first seen on December 15th, 1890, presented signs of pneumonia, limited to a small area outside the right nipple; this gradually extended until December 22nd, when the entire upper lobe had become involved. The temperature, with slight remissions, had been about 104° F., and there had been almost constant delirium since the evening of December 15th. The mouth and fauces were inflamed and thickly dotted over with an aphthous exudation, and on account of this and the dryness of the tongue swallowing was extremely difficult, and for the last three days nutrient enemata had been employed. The patient being thus in a critical condition, Dr. T. D. Acland kindly saw the case with me in the evening of December 22nd, and gave a very gloomy prognosis. Dr. Sedgwick Saunders, who was attending from time to time in a friendly capacity, took a similar view of the case, although he was not able to be present at the consultation.

On December 24th I was called early to the patient, as it was supposed he was dying. On my arrival I found the friends firmly persuaded that the end was near at hand, one of the trained nurses having left with the impression that, such being the case, her services were no longer required. The condition of the patient was certainly alarming, for there had been several involuntary evacuations, enemata were no longer retained, there was retention of urine, and it seemed almost impossible to get him to swallow. He was quite unconscious, with teeth tightly clenched and face very dusky, constant twitching about the mouth, and convulsive movements of all the limbs. The respirations were slow and of a marked "Cheyne Stokes" character, with long pauses at intervals, during which the patient became much cyanosed, and was on several occasions supposed, by the friends, to have breathed his last. There being no time to obtain a supply of oxygen, which I have successfully used on other and somewhat similar occasions, I concluded the best thing to do was to stimulate, if possible, the respiratory centre, to the exhaustion of which the urgency of the symptoms appeared to be mainly due. I therefore obtained a solution of strychnine, and gave a hypodermic injection of one-fiftieth grain; a slight improvement soon took place in the breathing, and I was encouraged to repeat the injection after a short time, and at intervals of a few hours, until I had given the tenth of a grain; by this time the respiration had become quite regular, and consciousness had returned. The patient subsequently made a complete recovery.

I should mention that the case was complicated by a severe burn on the chest, caused by the application of a poultice on December 17th. This was an additional indication for the use of oxygen, could it have been obtained in time, for the gas has been shown to be of marked utility in cases of extensive burns.

THE TEMPERANCE MOVEMENT IN JAPAN.—Mr. S. Tsuda has presented a petition, signed by more than 3,000 members of the Temperance Society of Japan, to the Japanese House of Representatives, praying for increased taxation of alcoholic liquors with the object of lessening the consumption of them.