

neck." It cannot be ascertained that any medicine containing strychnia was taken.

CASE IX.—A gentleman, a member of the medical profession, with whom I am well acquainted, suffers from nettle-rash after eating veal. Veal has the reputation of being particularly indigestible. The above instance of the production of urticaria from its use is, doubtless, not an uncommon one.

CASE X.—I have been informed of a lady who cannot remain in a room where there is a cat. Although the cat may be concealed, the lady's peculiar sensations immediately declare to her the presence of the animal.

CASE XI.—A patient under my care, since dead of cancer, was invariably thrown into a state of nervous excitement by the exhibition of the compound infusion of orange-peel.

CASE XII.—A personal friend of my own suffered from erythema nodosum after eating shrimps, although these were perfectly fresh. I believe shell-fish generally is particularly liable to excite unpleasant consequences.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

21. *Tracheotomy in Croup*.—Dr. CONWAY EVANS, Assistant Physician to King's College Hospital, read a paper on this subject before the Royal Medical and Chirurgical Society. The author commenced by remarking upon the frequency and fatality of croup as a disease of early life, in illustration of which he observed that out of every thousand deaths of children between the ages of one and ten years which occurred in England and Wales during the year 1856, sixty were due to this malady. He then proceeded to examine into the rate of mortality from croup, and pointed out the very slight measure of success which has hitherto attended the methods of treatment usually employed in this disease. The following cases—four of croup, and two of diphtheria (?)—in which tracheotomy was performed, were then narrated in detail:—

CASE 1.—A boy, aged nine years. Attacked with croup of slow accession; temporary amendment in the symptoms, followed by threatening suffocation; tracheotomy; death four hours after the operation; existence of croupous exudation down to the second and third subdivisions of the bronchi.

CASE 2.—A girl, aged three years. Croup, treated by leeches, counter-irritation, tartar emetic, and calomel; tracheotomy on the fifth day, asphyxia being so complete as to render artificial respiration necessary; ejection of false membrane from trachea, and likewise two casts of small bronchial tubes; after treatment of a freely supporting character; recovery perfect.

CASE 3.—A boy, aged two years. Croup, between two and three days, treated with emetics; tracheotomy on the third day, suffocation being nearly complete; death during the operation; the croupous exudation found after death to extend down to the first subdivision of the bronchi.

CASE 4.—A boy, aged two years and a half. Croup, treated by tartar emetic; suffocation imminent on the fourth day, from the accession of the croupous breathing; tracheotomy; death from exhaustion sixty-five hours after the operation; false membrane found after death to extend down to the fourth subdivisions of the bronchi.

CASE 5.—A boy, aged five years. Diphtheria(?), coming on slowly and insidiously; breathing croupous on the seventh day; treated by emetics, counter-irritation, calomel, and compound antimonial powder; suffocation imminent on the eighth day; tracheotomy, followed by supporting treatment; ejection of a piece of false membrane; sudden accession of severe diarrhœa about thirty-six hours after the operation, and death from exhaustion. No post-mortem examination.

CASE 6.—A boy, aged ten years. Diphtheria, coming on very insidiously during nearly a month; treated by salines, and the application of a solution of

nitrate of silver to the throat; supervention of croupous symptoms, treated by counter-irritation, leeches, antimony, calomel, and chlorate of potash; asphyxia impending; tracheotomy, and stimulating after-treatment; death, apparently from syncope, about twenty-six hours after the operation. After death, a thick false membrane, separable from the subjacent mucous membrane only with considerable force, was found to line the larynx and trachea, and to extend to the bifurcation of the latter; it probably, indeed, passed down into the lungs, but an examination of these organs was not permitted.

Observing that, as in a large proportion of the fatal cases of croup the disease destroys life by asphyxia, the author proceeds to inquire into the reasons why tracheotomy is so rarely resorted to for the relief of this malady in Great Britain, and traces this mainly to the influence of the strong opinions against the operation which have from time to time been pronounced by many great authorities, both British and American, whose views in reference to this point are cited. These opinions the author believes have no valid foundation, and are unworthy of the confidence generally placed in them; and to this conclusion he is led by four classes of considerations, which are examined in detail. These are—1st, the high rate of mortality from croup, both with and without treatment; 2d, the immediate cause of death in a large majority of the fatal cases of the disease—namely, asphyxia; 3d, the recorded cases of croup in which tracheotomy has been resorted to in this country when the patient has been all but suffocated, and in which complete recovery has followed the operation; and 4th, the great success which has attended the performance of tracheotomy in croup in France, in which country it has been extensively practised. If to each of these considerations its fair value be assigned, there can scarcely be any other conclusion but that it is incumbent upon the practitioner to give a fair trial to any method of treatment in croup which promises for its results a lower rate of mortality than obtains under the usual plans, and especially to tracheotomy.

The objects to be gained by the performance of tracheotomy in croup are next pointed out, stress being laid upon the fact that the operation affords time for the disease to run its course (which would frequently not involve the destruction of life, except for the occurrence of asphyxia, which ought really to be regarded as a circumstance in the disease in great measure accidental), and for the administration of such remedies as may be deemed advisable. The physiological effects of the free admission of air into the lungs through an opening in the trachea, in a child undergoing gradual suffocation from croup, are then considered; and the immediate cause of death in those cases in which life terminates by asphyxia is also examined: the practical conclusion arrived at being, that while the symptoms of suffocation may be relieved in almost all cases by the late performance of tracheotomy, they may be prevented in many by recourse being had to that proceeding early in the course of the malady.

The principal objections which have been urged against the performance of tracheotomy in croup are then considered in the following order. Tracheotomy in croup has been objected to—

a. As unnecessary when there is spasmodic closure of the larynx, and as useless when false membrane exists in the windpipe without such spasmodic closure.

b. As useless when the false membrane extends below the point at which the opening into the trachea would be made, and especially when the croupous exudation passes down into the bronchial tubes.

c. As tending in itself to induce bronchitis and pneumonia—diseases which in themselves involve considerable risk to life.

d. As having been actually attended with so little success as practically to render the operation unjustifiable.

e. As very difficult of performance, and as involving in itself great danger to life.

The real value of each of these objections is then carefully and fully examined in the order above given, the answer to the first objection being illustrated by the following case:—

CASE 7.—A girl, aged three years; croup treated by the warm bath and by tartar emetic, in spite of which the case progressed from bad to worse until the third day, when, while symptoms of asphyxia were being gradually developed,

and signs of exhaustion were becoming well marked, the patient suddenly fell back in bed and died, with scarcely a struggle. After death, but before the post-mortem examination, tracheotomy was performed. A mass of false membrane was found, almost filling the larynx, and quite occluding the rima, and extending downwards to the third ring of the trachea; but the *lowest* part of the croupous exudation was just *above* the top of the tracheotomy incision. No false membrane existed in any other part of the trachea.

The results of tracheotomy for the removal of foreign bodies from the air-passages are then investigated, as well as those of the performance of this operation for the relief of other maladies than croup. But as the statistical method of examining this subject is believed by the author to be productive of an impression upon the mind of the practical physician by no means so lasting as a narrative of the results of clinical observation, the following cases in which tracheotomy was performed for the relief of other diseases than croup are given in detail:—

CASE 8.—A man, aged forty-three years; came under observation when nearly exhausted from distressed breathing, dependent on syphilitic disease of larynx (probably ulcerative); tracheotomy, followed by a supporting plan of treatment; recovery; but, though able to return to his occupation (a laborious one), unable to breathe without the tracheal tube eight months after the operation.

CASE 9.—A gentleman, aged seventy-two years; nearly asphyxiated from spasmodic closure of the larynx, associated with some disease of that organ (probably of a malignant character); tracheotomy; recovery as regards breathing; but, though living in a state of comparative comfort, unable to breathe without the tube nine months after the operation.

CASE 10.—A man, aged thirty-six years; suffocation impending from œdema of glottis; tracheotomy, followed by a highly supporting plan of treatment; recovery complete and rapid; voice also perfectly restored.

CASE 11.—A girl, aged fifteen years; nearly suffocated from œdema of the larynx, supervening upon chronic disease of that organ associated with “lupus non exedens” of face, lip, and thigh; tracheotomy; recovery, but inability to breathe on the withdrawal of the tracheal tube two months after the operation.

CASE 12.—A lady, aged twenty-eight years; œdema of glottis, supervening upon tubercular disease of the larynx; suffocation imminent; tracheotomy; temporary recovery, the patient continuing to live in a state of comparative ease for five months after the operation, when death resulted from exhaustion consequent on the full development of the pulmonary phthisis.

CASE 13.—A woman, aged twenty-three years; œdema of larynx associated with syphilitic disease of that organ; treated by calomel and opium, in spite of which suffocation became imminent; tracheotomy, followed by supporting treatment; ejection of a complete cast of bronchial ramifications of one lung; recovery complete, except as regards voice.

CASE 14.—A girl, aged nineteen years; sloughing of the soft palate and the back of the pharynx, of syphilitic origin; inability to swallow; supervention of œdema of glottis, and threatening suffocation; tracheotomy, followed by supporting treatment, the patient being fed for several weeks by the stomach tube; recovery complete.

CASE 15.—A boy, aged three years and a half; foreign body in windpipe; tracheotomy, but no foreign body discovered; incisions in trachea enlarged, and windpipe freely examined on several occasions, but without success; eventually, incisions made, not only through several rings of trachea, but also upwards through both the cricoid and the thyroid cartilages, so that a finger could be readily passed from the trachea into the mouth, but still without the detection of any foreign body; ultimate recovery complete, and voice regained.

The conclusion deduced from all these considerations and facts is, that tracheotomy, though frequently a difficult operation, is by no means so dangerous a proceeding as is commonly supposed.

An inquiry is then instituted into the causes of the want of success which has attended the performance of tracheotomy in croup in this country, and this is attributed chiefly to the following circumstances—namely:—

1st. To the fact that tracheotomy has been very rarely indeed resorted to in

croup in Great Britain except as a last resource, when other methods of treatment have been tried and found unavailing, and when the patient has become nearly asphyxiated.

2d. To the fact that the treatment employed prior to the performance of the operation has almost always been of a more or less depressing kind, usually consisting in the exhibition of tartar emetic, ipecacuanha, calomel, the abstraction of blood, the use of the warm bath, &c.

3d. To the fact that the after-treatment has not generally been of that supporting character which nature requires for the due upholding of the patient's strength until the phenomena of croup shall have had time to run their course; and to the difficulty experienced in commanding constant attention in the way of nursing and watching for some days after the performance of the operation.

The author then strongly urges the propriety of having recourse to tracheotomy for the relief of croup early in the course of that disease, and immediately that the existence of false membrane in the windpipe can be satisfactorily determined, and emetics have been fairly tried; and for these reasons:—

a. Because tracheotomy tends to prevent the mode of death by which nearly all fatal cases of croup, in which the operation is not resorted to, terminate—namely, death by asphyxia.

b. Because tracheotomy facilitates the ejection and removal of portions of false membrane from the windpipe.

c. Because tracheotomy tends to prevent the exhaustion due to the extraordinary efforts of breathing almost always made by the patient in this malady.

d. Because tracheotomy, by prolonging life, affords time both for the phenomena of the disease to run their course, and for the administration of remedies and of means of support to an exhausted system.

e. Because tracheotomy facilitates the employment of topical applications to the interior of the windpipe, upon which great reliance is placed by some practitioners.

f. Because the early performance of tracheotomy in France has been attended with results which are admitted, even by the opponents of the operation, to have been far more favourable than when recourse has been had to this procedure as an ultimate expedient.

The physiological and pathological differences between the condition of a child merely asphyxiated by croup, and that of a man half strangled by some mechanical cause, are then pointed out, and the necessity which exists in the former case for the free employment of a supporting plan of treatment is clearly proved.

The cause of death in those cases of croup in which a fatal termination ensues, notwithstanding the performance of tracheotomy, is next examined, and this is shown to depend upon one or more of the following conditions:—

1. On some accidental circumstance connected with the operation, such as hemorrhage into the windpipe, obstruction or undue narrowness of the tube, &c.

2. On asphyxia dependent on the extension of the croupous exudation into the lungs, or on the reformation of the false membrane after its having been once ejected.

3. On complicating diseases (either connected with the operation, or without any reference to it) arising in the course of the croup, such as bronchitis or pneumonia.

4. On exhaustion—death by asthenia.

The author believes that croup, when it proves fatal, always tends to destroy life by exhaustion, and that this would be its ordinary mode of termination were it not that the part of the body in which the most striking alterations of structure induced by malady occur, is one in which the existence of such a mechanical obstruction as is presented by the croupous exudation tends, as well in itself as in the spasmodic closure of the larynx, with which it is often associated, to destroy life by suffocation before the disease has had time, as it were, to run its full course, and produce death by asthenia. And he, therefore, strongly advocates the propriety of adopting a supporting plan of treatment in this malady, both before and after the operation, but especially after its performance. The value of alcohol, as a remedial agent in the treatment of disease, is then exam-

iued, and the method in which it should be given—viz., in small doses at short, but regular, intervals—is pointed out. Alcohol should be regarded, as has been remarked by Dr. Todd, not as a specific remedy, but simply as a kind of food. It is really a hydrocarbon, very easy of digestion, possessing certain properties of enabling the body temporarily to withstand exhausting influences, and capable, by its undergoing oxidation in the system, of maintaining the animal temperature, and of preventing waste of tissue. The *modus operandi* of the remedies usually employed in croup is then discussed, and their real value indicated, and the error of supposing this disease to consist in ordinary inflammation of the windpipe is alluded to; and, while the inefficiency of the remedies commonly used in croup is pointed out to be such as theory would lead us to expect, the same fact is shown practically by the results of experience, which clearly indicate that under all plans of treatment, exclusive of tracheotomy, croup is a very fatal malady. The value of emetics is also examined, and the danger which frequently results from the employment of tartar emetic is dwelt upon.

The circumstances which tend to diminish the chances of success from tracheotomy are then referred to under the following heads:—

- a. The age of the patient.
- b. The existence of pneumonia or bronchitis.
- c. The presence of other diseases, such as measles, whooping-cough, &c.
- d. The employment of depressing remedies prior to the operation.
- e. The postponement of tracheotomy until the patient is *in extremis*.
- f. The extension of the croupous exudation into the lungs.

After suggesting a few practical hints in connection with the operation itself, and in regard to the inhalation of chloroform in these cases, and after briefly glancing at the various points which have been examined in detail, the author thus concludes: It only remains to warn the practitioner against expecting a large share of success from this operation, inasmuch as in our present inability to ascertain whether the croupous exudation is limited to a small portion of the windpipe, or whether it extends into the minute branches of the bronchial tree, we must necessarily oftentimes recommend its performance in cases in which death must almost inevitably take place. But while a careful examination of this subject clearly indicates the propriety of making an opening into the trachea in those cases of croup in which false membrane exists, and of not postponing the operation until the last moment, and while it leads to the anticipation of a decided diminution in the rate of mortality from this disease when the early performance of tracheotomy is extensively practised, the student of science cannot but feel that tracheotomy is at best but an expedient of relief, capable, by its mechanical action, of obviating certain tendencies to death, and, by enabling the administration of support to an exhausted system of affording time for the due occurrence of certain processes necessary to recovery. Nor can the practical physician forget that some effectual remedy for croup has still to be searched for, not to be found in all probability until the true etiology and pathology of the disease are far better understood than at the present day. At the same time it is impossible to foretell how near at hand the day may be when there shall be found a man who will do for croup what Jenner did for smallpox, or when there shall be discovered a remedy for this malady as certain in its power, and as efficacious in its action, as is iodide of potassium in syphilitic periostitis, or as is quinine in ague.

22. *Incisions in Anthrax*.—MAURICE H. COLLIS, Surgeon to Meath Hospital, says (*Dublin Quarterly Journ. Med. Sciences*, August, 1859) that “the incision into anthrax, whether made early or delayed till sloughing has done part of the surgeon’s work, must be deep rather than extensive. Usually it is said anthrax is a flat swelling. The fact of its flatness, or rather of its extent, hides the real amount of elevation, which is, in most cases, considerable. Hence incisions into anthrax seldom go down *through* the inflamed skin and areolar tissue. But even if they did go down to the fascia, they would fail in effect unless they also went through it. The fascia is highly inflamed in anthrax; in fact the essential difference of anthrax from furuncle consists in the inflammation being deeper and implicating the fascia. When fascia is inflamed, much plastic exudation