Case of fatal croup in the adult : with remarks / [J. Warburton Begbie].

IX.

CASE OF FATAL CROUP IN THE ADULT;

WITH REMARKS.

(*Read to the Medico-Chirurgical Society of Edinburgh, March 6th*, 1861.)

No feature in the etiology of croup is more interesting than age. It is essentially a disease of childhood. Not only so, but an extended experience in all countries, and by many observers, has distinctly pointed out that the period for the maximum occurrence of croup is between the second and the seventh year. "Disponunt ad croup," writes Joseph Frank in his wonderful 'Repertory of Medical Knowledge,' "ætas infantilis, et ita quidem, ut primum vitæ mensibus haud communis sit, frequentissimus inter primis et septimum annum."[1] "In no part of Britain, I imagine," remarks Dr. Cheyne, "is croup more prevalent than in Leith and its immediate neighbourhood; yet in the course of nearly fifty years of extensive practice, in which he has attended many hundred cases of this disease, my father has not seen one instance of croup occurring after puberty."[2] Although, however, the ages now mentioned do include the season in which croup is infinitely most prone to occur, it is of importance to know that the disease has been observed during the period of lactation, also after puberty, and in adult as well as even senile life. Bretonneau, for example, records the case

[1] 'Praxeos Medicæ Universæ Præcepta.' "De Croup."

[2] 'The Pathology of the Membrane of the Larynx and Bronchia.' By John Cheyne, M.D., p. 27.

of a child of a fortnight old, very feeble and small, who died of well-marked croup;[1] Molloy, the case of a child who died at the age of one month;[2] Desessart, a third case fatal at the age of three months.[3] As to the occurrence of croup in the adult, on the other hand, Louis, in 1826, on the occasion of the publication of his well-known and important memoir on the subject, was no doubt justified in stating that croup is so rare after puberty, and in adult age, as to have escaped the notice of many practitioners, who indeed doubt its existence at that period of life: the recorded observations of croup in subjects who have passed the age of puberty are rare, and such, continues Louis, that the annals of medicine do not contain more than three or four well-authenticated instances during the last fifteen years. Louis himself, in the memoir now referred to,[4] recorded eight instances of croup in the adult, all of which had been observed under the care of different physicians in the Charité, Necker, and Salpêtrière Hospitals at Paris. To some points of interest in these cases, and in Louis' "resumé," I shall have occasion to allude in the sequel. Within a more limited period, other examples of croup occurring in the adult have been placed on record by different observers;—by Charcelay, among French writers, in 1839, in the 'Gazette Médicale,' and in this country by Dr. Gillespie, whose interesting case, read to this Society in 1850, and published in the 'Monthly Journal' for the same year, as well as one recorded in the 'Lancet' for 1838, and referred to by Dr. Gillespie, have perhaps escaped attention somewhat, from the circumstance of their having been entitled cases of "Laryngo-Tracheitis:" that they were, however, instances of croup occurring in the adult, is just as certain as is the one the particulars of which I now communicate.

Alexander Hamilton, employed in the North British Rubber Manufactory, æt. 39, but having the appearance of being ten years older, was admitted to the Royal Infirmary, under my care, in the month of June, 1860. He was then, and had been for some months previously, affected by diabetes. On his admission, he was considerably emaciated, had

[1] 'Des Inflammations spéciales du Tissu Muqueux, et en particulier de la Diphthérite,' &c., p. 36.

[2] and [3] Frank, loco citato, p. 114; "De Croup." See also Valleix 'Guide du Médecin Practicien,' vol. i, p. 159.

[4] 'Mémoires ou Recherches Anatomico-Pathologiques,' p. 203. "Du Croup considéré chez l'Adulte."

great thirst, and was passing from 220 to 280 ounces of urine in the course of the day. There was no hereditary tendency to the disease to be discovered in this man's family, and the origination of it in his own case is probably to be ascribed to the extremely intemperate habits in which he had for years indulged. He was a slight-made man, of sanguine temperament, possessing bright red hair and light blue eyes. Under a duly regulated diet, consisting chiefly of animal food with gluten bread, a limited allowance of sugar (which in several instances lately I have found useful), and a restricted indulgence in fluids, the patient, for some time after the commencement of his hospital residence, decidedly improved. He gained flesh, and acquired some measure of strength; the amount of his urine gradually diminished to 160 ounces, and its density from 1·045 steadily fell to 1·034. During this time he had a fair trial of the alkaline plan of treatment; bicarbonate of soda and magnesia being the remedies employed, as well as the Vichy water. Arsenic, in the form of Fowler's solution, he also took; and it was while so doing that the most decided improvement in his appearance, and the greatest increase in flesh, were observed. A pint, and afterwards two pints, of London porter *per diem* were allowed him.

During the extremely cold weather of December, Hamilton had been noticed to have fallen off in appearance. He was in the habit of leaving the hospital occasionally for a walk; he did so on the 30th of December. On the following day he felt some symptoms of cold, but made no complaint till the evening of January the 1st. Dr. William Anderson, my resident physician, then found him suffering from sore throat, but without any distinctive character, and by no means violent in degree. Some simple remedies were prescribed; among others, warm poultices of bran to the throat and the inhalation of steam. On January 2nd the pain in throat had increased considerably, being referred to the larynx and trachea, and slight pressure over both caused great uneasiness; he had difficulty in swallowing, barking cough, with noisy croupal respiration, and was only able to articulate in a whisper. Early in the morning, after a fit of coughing, he had expectorated, along with some thick mucus, a portion of greyish-coloured tough membrane (an inch and a half long by an inch broad). At visit, a careful examination of the mouth and throat was made. The tonsils appeared a little swollen; the uvula elongated, and at its termination œdematous; the upper part of pharynx of a red colour, but no trace of pellicular exudation could be discovered; the nostrils also were quite free. On passing the forefinger down to the epiglottis, it was felt to be raised and tumid. Pulse 120, and small. The application of the warm cloths was ordered to be continued with diligence, and a little wine of ipecacuanha to be administered at short intervals. In the course of some hours, another, but smaller, portion of membrane was expectorated.

In the afternoon of the same day, the dyspnœa had not increased, and no attacks of spasmodic difficulty of breathing had occurred; voice was still more suppressed; a very distinct thrill was communicated to the hand when placed over both fronts of the chest; and on auscultation

the vesicular murmur, especially over the left side, was very imperfectly heard. Pulse more feeble. Wine and a little brandy were administered.

At 2 a.m. of January 3rd Dr. Anderson was summoned suddenly, to find the patient evidently sinking. He could only with difficulty count the pulse, but noticed no increased embarrassment of the respiration, no lividity of countenance, or appearance of gasping for breath. In the course of a few hours he died. It may be mentioned as interesting, that during the last two days of the patient's life the amount of urine voided was greatly diminished; the density, however, remained as before, and the chemical indications of sugar equally distinct.

On the 5th January the body was examined by Dr. Haldane, to whom I am indebted for the following account of the morbid appearances. The mucous membrane of the fauces and pharynx was reddened, but there was no exudation over its surface. The epiglottis was swollen, and of a red colour; the lower half of its inner surface, and the whole of the lining membrane of the larynx, was coated with a tenacious adherent false membrane of a dirty yellowish-grey colour. This membrane extended downwards to the upper part of the trachea, then it ceased abruptly, the lining membrane of the trachea being of a bright red colour, though coated by a thin soft layer of lymph. At the lowest part of the trachea, false membrane, similar in all respects to that found in the larynx, existed, and extended into both bronchi—into the left more decidedly than into right. Traces of false membrane existed in the very small bronchial ramifications of left lung.

On microscopic examination, the false membrane was found to consist essentially of fibre and cells, but at some places there was an abundant deposit of spores and filaments of the oidium albicans. On examining the portion of membrane expectorated, the presence of the the same vegetable parasite had been detected.

There was slight œdema of both lungs, but no other morbid appearance in the thoracic or abdominal organs.

As a termination of diabetes the occurrence of croup in the case now briefly detailed appears to me of some interest; such a termination, indeed, must be regarded as extremely rare. I am not aware of its having ever been previously noticed. Comparatively few of the recorded cases of croup in the adult were examples of the disease occurring as a primary affection; in the great majority, as in the one just read, the croup was a secondary affection, coming on in the course, or immediately on the termination, of some other severe disease, by which the strength of the patient had already been greatly reduced. Only one of the eight cases recorded by Louis is entitled simple croup; but the subject of his seventh observation, a woman of

thirty-two years, although exhausted by misery and imperfect nourishment, had not suffered from any other malady. In the remaining six cases of Louis, croup was a complication of typhoid fever in two; in other two, of an inflammatory affection of the gastro-intestinal mucous membrane; in one it occurred in the last stage of phthisis; while in another, it supervened on an attack of chronic pleurisy. In a case communicated by Dr. Rollo to Dr. Cheyne, and the particulars of which are given by the latter in his work,[1] the patient had, previous to the attack of croup, suffered from a severe catarrh; in his youth, too, he had been more than once ill with croup. This was a gunner in the Royal Artillery. A preparation from the case is preserved in the Museum of the Royal College of Surgeons (Catalogue 1293, xxvi B). The case recorded by Dr. Gillespie, already referred to, and the one published in the 'Lancet' for 1838, are two well-marked examples of primary croup in the adult. It is worthy of remark that in both subjects pregnancy was far advanced.

With one exception (the seventh observation), the existence of a distinct false membrane in Louis' cases was not limited to the air-passages properly so called—larynx, trachea, and bronchi—as in the case of Hamilton; but the uvula, the tonsils, and pharynx—in some the œsophagus and posterior nares, were likwise involved. To the absence of false membrane over the mucous surface of the pharynx in the exceptional instance, special attention is directed by Louis; and he remarks, that, having in the six cases previously detailed, observed that the membranous concretions are propagated from above downwards, the question suggests itself, whether the malady in this instance may possibly have had a different course; or, supposing it to have originated, as in the others, by implication first of all of the pharynx, whether the false membrane formed there may not have been detached, so as to permit its subsequent only very incomplete re-formation. M. Louis himself does not answer this question; it would therefore be presumptuous in me to do so. In 1818—that is, some years before the publication of M. Louis' cases—M. Bretonneau had read to the French Academy his original observations on "Diphthérite;" and in 1826 his remarkable treatise on that subject, as well as

[1] Loco citato, p. 115.

the memoir of Louis, simultaneously appeared. That some of the cases of croup in the adult recorded by the latter, as well as others which have been published by different French physicians since, partook to a considerable extent of the nature of the affection first accurately described by Bretonneau, there can, I think, be little hesitation in concluding. But in connection with this particular question there is a point which appears to me one of very considerable importance, namely, how far is the disease which is familiar to us as croup (whether affecting the adult or, as is so much more common, the child), and which at the hands of various English writers has received a full illustration (let me instance Home and Cheyne among the older, and Drs. West and Charles Wilson among recent authors), to be regarded as identical with the croup described by French physicians. I am surely not mistaken when I state that the very circumstance of the implication of the pharynx to any considerable extent—especially if it becomes distinctly the seat of the adventitious deposit, still more if it be the earliest part affected by it—in the opinion of English physicians generally, would lead to the conclusion that the case is one of diphthérite, and not of our true English croup. I remember, as I have before observed in this Society, on the occasion of my first seeing cases of croup in the French hospitals, to have been struck by noticing the great care exercised in the examination of the mouth and throat of the child; and when instances of the disease were described by Trousseau or by Guersant, I failed to recognise the distinguishing features of the disease as familiar to me in the writings of British physicians. Croup, as the distinguished physicians now named taught us, was a disease commencing in the pharynx. This is indeed the doctrine of the French school; let me refer to what M. Trousseau has stated in his recently published work, 'Clinique Médicale de L'Hotel-Dieu de Paris.'[1] You will hear it remarked by men of undoubted experience, that they have often seen children die of croup in whom the pharynx has not been involved. Before M. Bretonneau had read, in 1818, to the Academy his earliest observations on "Diphthérite," before the publication in 1826 of his treatise, the fact was generally admitted that membranous croup commenced in the larynx.

[1] P. 327. 'Angine Diphthérique et Croup.'

M. Bretonneau has caused a revolution in science by maintaining and demonstrating that almost always, at least nineteen times out of twenty, it was not so, but that the malady commenced in the pharynx. Guersant, his friend, and for a lengthened period physician to the Children's Hospital, after having supported the former opinion, when his attention was directed to the point, adopted the view of Bretonneau. Trousseau then goes on to observe that, as regards himself, having perhaps seen more of croup than any other physician of the capital, from the circumstance of his connection during eighteen years with the Children's Hospital, and from having been very frequently consulted in regard to the operation of tracheotomy in the treatment of diphthérite—"I assure you," he says, "that the proposition announced by my venerated master is the true one, and that in most cases the croup begins in the pharynx." "I do not deny," he observes, a little further on, "that croup may first affect the larynx, any more than I hesitate to admit that in very rare circumstances it may have its first seat in the bronchial ramifications. Croup commencing in the larynx is a rare and exceptional fact." The maintenance of a different opinion Trousseau explains on the ground, first, of the insufficient attention which has been paid to the examination of the mouth and pharynx; and, secondly, because, in most instances, the early symptoms of the malady are comparatively trivial, and, before the larynx and trachea have become involved, the distinct traces of the pharyngeal affection have passed away.[1]

[1] Croup occurring in the adult runs, in the opinion of Trousseau, a similar course. The derangement of health and febrile disturbance are at first very slight, the pain in the throat trivial, and the existence of false membrane in the pharynx may be found in patients whose only complaint is that of a little difficulty in swallowing. Here, however, the danger is greater than in the child. The adult having the opening of the larynx proportionally larger than in the latter, the calibre of the trachea being also greater, the air finds a sufficient passage even after the deposition of false membrane on its walls has commenced; and when the symptoms of croup become confirmed, the false membrane has already occupied, to a great extent, the bronchial ramifications.

These phenomena, says Trousseau, have for a long time attracted my notice. I first observed them in the epidemic of Sologne, where I was sent with Dr. Ramon in 1828 to study the disease.

Let me give, very much in Trousseau's own words, the following case of

I turn now, very briefly, to notice the statements of two of the most accurate observers in our own country. "The cavity of the mouth and the fauces do not present," remarks Dr. West, "any invariable alteration in cases of croup. Congestion about the fauces and soft palate is of frequent occurrence, sometimes coupled with a scanty deposit of false membrane in those situations, or the tonsils are found in a state of ulceration."[1] Dr. Wilson, who perhaps of all English writers on croup has treated most fully of the condition of the pharynx, tonsils, and palate in the early stage of the disease, and speaks of the fauces being always affected "to an extent which indeed varied considerably, but which was in every instance sufficiently obvious, and always characteristic"—having described the red and congested appearance of the parts—observes, "Along with this, though only in a small minority of instances, there may be observed traces of exudation on the amygdalæ or pharynx."[2]

Like the French physicians, and Dr. Wilson in our own country, I feel inclined to insist upon the importance of making, whenever possible, a careful examination of the mouth and

croup in the adult, which he has most graphically recorded:—I was one day —it was a day too memorable for me ever to forget it—dining with M. de Bethune, whose château is situated at a little distance from Selles, in the department of Cher, when a peasant came for me in a great hurry to see his wife, who he said was suffocating. I went immediately to the patient. I found a woman of 26 years, still attired in her holiday garb—it was Whit Sunday. She had attended morning mass, at about a quarter of a league distant; after walking home she had dined as usual, and was again prepared to go to vespers when she was suddenly seized with a sense of suffocation, so violent that her husband feared it might overpower her before we arrived. The unfortunate woman was indeed expiring when I saw her. Examining immediately the throat, I discovered a dense false membrane stretching across the pharynx. The nature of the malady was thus sufficiently shown; and the poor woman being at her last extremity, tracheotomy alone appeared able to avert immediate death. Without any delay, I forthwith had recourse to it, with no assistance but that of the husband, and with no other instrument but a knife with convex blade, which fortunately I had with me. I was compelled, moreover, for want of a proper tracheal canula to make a clumsy one out of a leaden ball, which I flattened with a hammer, and fashioned like a tube. Unfortunately, the false membrane had already penetrated into the smaller bronchi, and on the following day my patient died."

[1] 'Diseases of Infancy and Chilhood,' p. 358.

[2] 'Edinburgh Medical Journal,' 1855-6.

pharynx in every case where the suspicion of croup may be reasonably entertained; but, from the remarks now made, I think it must be obvious that, in the experience of physicians in France, the pharynx is more seriously, if it be not more frequently, involved in croup than is the case in Great Britain.

In bringing this case under the notice of the Society, I have not thought it necessary to refer in any special manner to the treatment which was pursued during the eight and forty hours the patient survived the attack of his fatal disease. The croup found him greatly exhausted from the long continuance of another grave disorder, and seemed to tell more distinctly by causing further depression of the system generally than by determining that great difficulty of breathing which, in other circumstances, is so distinctive a feature of its invasion. Laryngeal dyspnœa there was undoubtedly, and truly croupal in character; but it was modified in degree, and, in particular, not characterised by the occurrence of those sudden spasmodic attacks or exacerbations of dyspnœa (the accès of French writers) which so frequently, in ordinary croup, prove the immediate cause of death. As the patient had spat up some portion of false membrane before I saw him on the 2nd January, I considered it advisable to aid the further expectoration of such by the employment of small doses of ipecacuanha. This was not long persevered with, for the tendency to sinking clearly showed that the only safe plan to be pursued was as long as possible to maintain by stimulants the patient's fast ebbing strength. Tracheotomy in such circumstances was surely altogether inadmissible; but, at the same time, I should have derived little profit from the study of the able and complete observations of Mr. Spence on that subject, so familiar to the members of this Society,[1] had I not on the one hand carefully and anxiously considered whether this operation could reasonably be expected to effect any good, or, having so considered, hesitated to decide that it could not. The presence of the vegetable parasite, the oidium albicans, in the exudation matter is not without interest; and perhaps there are some who from the fact of its existence may feel disposed to regard the case as one more closely allied to diphtheria. Such is not the opinion I entertain. With the development of that disease the pro-

[1] 'Edinburgh Medical Journal,' February, 1860.

duction of a vegetable parasite has, I believe, no intimate connection; it is not an epiphitic disease, and in many circumstances we meet with the oidium albicans, and kindred vegetable parasites, when the mucous surfaces of various parts of the body are the seat of inflammatory action. It is certainly more nearly allied with the Muguet of French writers, the aphthous disorders of children, and ailments of like nature; but I see no reason why its presence may not at times be determined in the exudation of true croup. Possibly the morbid condition of the system previously in existence—I mean the glucogenic—may have had some influence in its generation.