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Tonsillitis with Diphtheria.

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THE NON-IDENTITY OF  
CROUPOUS TONSILLITIS WITH DIPH-  
THERIA.\*

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A RECENT writer has said that there is no class of ailments which requires more calm judgment than throat affections of children. The diseases of the tonsils particularly have not been studied with the care which their frequency and often their great severity demand. In looking over a dozen of our best works on diseases of children in English, German, and French, I have not found one which gives an adequate discussion of this subject, most of the writers contenting themselves with a few remarks upon quinsy, certainly very uncommon in children, and chronic hypertrophy of the tonsils, which is pretty well understood.

It is not the purpose of this paper to discuss all the different forms of acute tonsillitis, but only to present a few thoughts upon the form of inflammation which is so often, and it is believed improperly, classed as diphtheria. It may be urged that there are a great many cases in which the physician must express a diagnosis at the first visit, under circumstances where a positive diagnosis is not pos-

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sible, and that it is better to call all these cases diphtheria, thereby to insure better care of the patient on the part of parents and attendants, and greater security against spreading the disease.

Another consideration may have its weight, though it is not often brought forward: that while a physician's reputation might suffer from pronouncing as only tonsillitis a case which the issue proved to have been undoubtedly diphtheria, he would have nothing but glory to gain by "curing" the great majority of his cases of "diphtheria" in four or five days. We might as logically call every case of general erythema scarlet fever, or every severe bronchitis pneumonia.

As a result of the practice of calling every sore throat in which a patch of membrane is seen a case of diphtheria, published statistics of this disease are worthless. Our journals are continually filled with new specifics, accompanied by an enumeration of the scores of cases in which they have been successful. Where detailed reports of cases are given it is evident, from a critical examination of them, that the greater number of them are not cases of diphtheria at all, while the universality of the successes alleged by others is a sufficient proof of the worthlessness of their observations.

It must be evident to any one who attempts to keep up with the literature of the subject that, before great advances in the treatment of diphtheria can be made, we must insist upon greater exactness in its diagnosis. It is quite as important to recognize what is not as to know what is diphtheria.

There is now substantial agreement among pathologists that the false membranes produced in the general disease we know as diphtheria present histologically no essential differences from those produced by other causes, such as

cold or traumatism. We must, then, rely upon the clinical features of the disease to establish its entity. These may be briefly summarized as follows:

1. A great tendency to asthenia, as shown by the rapid pulse and frequent death by heart failure.

2. False membranes produced simultaneously upon several mucous surfaces, such as the tonsils, with the soft palate, pharynx, nares, or larynx, or spreading successively from one to another.

3. Albuminuria all but constant.

4. Frequent paralytic sequelæ.

5. Communicability.

I believe that a form of sore throat is not infrequently met with in children which is wanting in all these features, although unmistakable evidence exists, on inspecting the throat, of the presence of false membrane.

The following cases may serve as illustrations:

CASE I.—On November 11th I saw a stout, well-nourished girl of ten years, who was reported to have been perfectly well until the morning of that day. She was taken at eleven o'clock with a chill, vomited twice, complained of pains in the chest, and seemed quite sick.

The temperature, when she was seen three hours later, was  $103.2^{\circ}$  F., the pulse 140, the respiration 32. Examination of the chest revealed nothing abnormal, but, on inspecting the throat, the tonsils were found much swollen and the right one completely covered by a thick, yellowish-gray membrane, the left one being about two thirds covered.

On the following day the temperature was  $102.4^{\circ}$ ; the membrane was still distinctly circumscribed, showing no tendency to spread, but was more yellow in color. On the third day the temperature was  $101.6^{\circ}$ , and after that it was normal. On the fourth day the throat was practically well.

CASE II.—A boy of five began to complain one evening of sore throat and chilly sensations, and had a high fever all night.

I found him the next day with a temperature of  $104.5^{\circ}$ , a respiration of 40, and a pulse of 135. Both tonsils were moderately swollen, and each was about half covered with a circumscribed yellowish patch of membrane. On the next day the temperature had fallen to  $100.5^{\circ}$ , and after that it was normal. The membrane by this time had completely disappeared, and in five days from the beginning of symptoms the patient was quite well.

I have notes of nineteen cases in all essential respects like the two reported. The symptoms presented were strikingly uniform.

The *ages* of the children affected ranged from fourteen months to ten years, nearly all cases, however, occurring between four and seven years. The cases show nothing regarding season.

The *onset* in all cases was acute, with chills (five cases), vomiting (three cases), sore throat, and high temperature.

The average *temperature* in eleven cases seen on the first or second day of the illness was  $103^{\circ}$ ; in four of these it was  $104^{\circ}$  or over.

The *duration of the fever* in fifteen cases in which this point could be pretty accurately determined averaged three days. It was uniformly higher on the first day than on the second, and higher on the second than on the third. No instance of a secondary rise after the evening temperature had reached the normal was noted.

The *duration of the throat symptoms* was from four to seven days; in only one case did they persist beyond the week.

The *swelling* of the tonsils was marked in about half the cases; as a rule it was much less than is seen in the ordinary cases of follicular tonsillitis.

The *false membrane* in fifteen cases was distinctly yellow or of a yellowish-gray color; in one or two cases the color was a gray or yellowish-green. It was seen upon

both tonsils in two thirds of the cases, in one third upon one only. I have included in this list one case in which there was the simultaneous appearance of a small patch of membrane in the pharynx. This presented the same characters as that seen upon the tonsils, and quickly disappeared.

In no case was false membrane present upon the uvula, soft palate, or pillars of the fauces. In no case did the membrane show any tendency to spread beyond the limits where it was first observed.

It covered the tonsil in about half the cases; in the remainder it was of about the size of the finger-nail. In one case was the combination seen of isolated yellow, follicular spots upon one tonsil, with a continuous, uniform membrane upon the other. The spots, however, developed subsequently to the membrane.

I have not noted, nor do I now recall, an instance in which the familiar yellow, isolated points of follicular tonsillitis, seen at one visit, had coalesced to form a consistent continuous membrane at another, although I have records of nearly two hundred cases of tonsillitis.

I am aware that the statement is often made that this is a frequent occurrence, and some even go so far as to say that the membrane of all cases of croupous tonsillitis is produced in this way. I doubt it very much, and would cite in proof the first case reported, where a distinct membrane nearly covering the tonsils was present within a few hours of the initial chill.

The urine, I am sorry to say, was examined only in a few of the cases in which the diagnosis was at first doubtful. In no instance was albumin present where the progress of the case was such as described. In two or three other cases, at first doubtful, the existence of albuminuria led to the diagnosis of diphtheria, subsequently confirmed by the per-

sistence of the membrane on the tonsils and its extension to other parts of the throat.

I am not prepared to say that a small amount of albumin in the urine may not depend upon a simple tonsillitis. I have occasionally seen it in the follicular form, where the temperature was high and the general symptoms were severe. In fact, it seems quite likely that it might occur in the croupous variety under similar circumstances. This point is one which needs further elucidation.

Glandular swellings were seen in three of my cases. Severe otalgia was present in two, and torticollis in one.

Regarding the ætiology of this affection, whether sewer-gas, cold, or exposure is to be blamed, I am unable to say. These cases, occurring in dispensary practice, are worthless to draw any conclusions from upon these points. No instance was noted, however, of the simultaneous or successive seizure of different members of a family such as to suggest the probability of communicability.

The most interesting question suggested by these cases is that of diagnosis. That they were not true diphtheria must, I think, be evident to any one who has seen much of that disease.

I recognize, of course, the fact that diphtheria may run a mild and insidious course. For example, where the throat symptoms have been very mild, and the constitutional symptoms so slight as to be easily overlooked, paralysis has followed, showing, to my mind, conclusively, that it was genuine diphtheria. Again, cases are sometimes seen where the throat symptoms are mild but the renal symptoms very severe. The cases of true diphtheria, on the other hand, which begin, as these cases of croupous tonsillitis have begun, with high temperature and moderate throat symptoms, are not those which end in perfect recovery in four or five days, but rather, as Goodhart says, do these symptoms point

to intense blood poisoning, from which death occurs in two or three days.

Various names have been suggested for the disease under consideration. British writers — Fox, O'Connor, Vacher, and others — have called it false diphtheria, or "spreading quinsy," it having assumed the character of an epidemic in some places. Oertel, in von Ziemssen, describes it under the title of *catarrhal diphtheria*. It is often spoken of by physicians in this country as *diphtheritic sore throat*. All of these terms seem to me to be objectionable, inasmuch as they assume or imply a close connection with diphtheria, from which, I think, it is to be sharply differentiated.

I prefer, with Carmichael ("Edinburgh Med. Jour.," July, 1884), to regard them as cases of croupous tonsillitis. This writer describes the pathological appearances in the following words: "The gland is a pale red; the patch of a yellowish-white color, confined to the tonsil, easily separated, leaving a loss of epithelium, but the gland otherwise intact. Microscopically, besides the cell elements of follicular tonsillitis, blood corpuscles in a fibrinous matrix are present."

Henoch states that the microscopical examination furnishes no points of distinction from diphtheria, since bacteria are found in both.

In order to present more forcibly the points of contrast between this disease and true diphtheria, I have arranged them in the following tabular form:

<i>Croupous Tonsillitis.</i>	<i>Diphtheria.</i>
1. Invasion abrupt.	1. Much more often it is insidious.
2. Most marked general disturbance during the first two days; no tendency to asthenia.	2. Generally not much general disturbance before the third day, but after that marked tendency to asthenia.

*Croupous Tonsillitis.*

3. Starts with a temperature of from 103° to 104.5°.

4. Pulse full and rapid.

5. Membrane of yellowish color; edges sharply defined; limited to tonsils; does not bleed when detached; superficial; not very adherent; no tendency to reform after removal; appears early; does not spread.

6. Albuminuria rarely if ever present.

7. Reaches its height by the second day; by the fourth, the patient is generally convalescing.

8. Paralysis never follows as a sequela.

9. It is doubtful if it is ever contagious.

*Diphtheria.*

3. Rarely high in the beginning, 100° to 101°, gradually rising till the fourth or fifth day.

4. When rapid it is feeble.

5. Color gray, sometimes greenish; shades off gradually; on uvula, soft palate, and pharynx as well as the tonsils; bleeds readily even without being detached; infiltrates the deeper tissues; adherent; strong tendency to reform after removal; may not be seen the first or even second day; spreads steadily.

6. Albuminuria rarely absent.

7. Most commonly does not reach its height before the fourth day.

8. Paralytic sequelæ quite common.

9. Frequently spreads by contagion.

Glandular enlargements are undoubtedly much more frequent in diphtheria, still, as they are not uncommon in tonsillitis, they do not possess great diagnostic value in the early, doubtful stage.

I can not agree with Hensch that but little reliance is to be placed upon the temperature as a point of diagnosis. The sharp initial rise has often enabled me to settle doubtful cases as tonsillitis at the first visit. I regard this as an important point.

Still, after all has been said, a differential diagnosis is only to be made by carefully weighing *all* the symptoms. And even then there are some that must be watched for twenty-four hours before a positive opinion can be pronounced.

That a diagnosis is difficult, or sometimes, perhaps, impossible, is no reason why we should not at least make the attempt to reach it in all cases. Doubtful ones must, of course, be isolated and carefully watched, especially with reference to spreading of the membrane, which may be regarded as settling the question of diphtheria, as doubtful cases of scarlatina are cleared up by the appearance of the rash.

I have excluded from the foregoing discussion the different forms of sore throat which form a part of scarlet fever. These form a class by themselves, and are differentiated from idiopathic tonsillitis positively only by the eruption. The throat in this disease is more generally involved, the fauces, palate, and pharynx as well as the tonsils being affected. The small red, punctate spots of this disease I have never seen in a simple inflammation.

I have only a word to add regarding treatment. Croupous tonsillitis seems to be a self-limited disease, so that almost any remedies employed may be thought to be extremely efficacious. I have come to prefer, after trying most of the drugs usually given for tonsillitis, frequent small doses of aconite when the case is seen early, to be kept up till the temperature begins to fall, and the administration throughout the disease of the bichloride of mercury in gr.  $\frac{1}{100}$  tablets every two hours. This plan has seemed to relieve the symptoms and clear up the throat much more rapidly than chlorate of potassium and tincture of iron. May it not be true that some at least of the brilliant results reported from the use of the bichloride in diphtheria have been obtained in cases like these?









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