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The Throat and the Voice, by J. Solis Cohen, M.D.  
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# The Throat and the Voice: Part 1, Chapter 4: Diphtheria

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## CHAPTER IV.

## DIPHTHERIA.

**D**IPHTHERIA is one of those maladies known as blood diseases; that is to say, it is due to some deleterious matter that gets access in some way to the mass of the blood, and poisons the system. The nature of this poisoning material has not yet been detected, but there is reason to believe that it flourishes where drinking-waters, and the air of dwelling-places, are impregnated with emanations from cess-pools, refuse heaps, waste-pipes, and unventilated sewer-drainage. The disease is propagable by contagion; and one attack does not insure immunity from subsequent ones. Children are much more liable to it than adults. It is characterized by a low or typhoid type of fever, and more particularly by the development of a more or less copious deposit of what is termed false membrane on the mucous surfaces of the throat and adjoining cavities, the air-passages and nasal passages. Sometimes it extends along the gullet even into the stomach. It is likewise liable to be formed over any abraded portion of the skin. The

character of the deposit varies from minute, delicate films to large, tough membranes, sometimes amounting to complete casts or moulds of great extent. The deposit is usually more or less diffused over the surfaces. The deposit may accumulate to such an extent in the air-passages as to produce death by suffocation; but the more frequent cause of death in this notoriously fatal malady is extreme depression of strength and vitality, the result of the poison in the blood.

The disease rarely occurs without exposure in some way to the cause of the infection, though it is sometimes impossible to trace it to such an occurrence. Two to five days usually elapse between this exposure and the outbreak of the disease; but this period may be but a day on the one hand, or be extended to two weeks on the other.

The earliest manifestation to attract prominent attention is usually some degree of sore throat, often confined to one side, and attended with swollen glands below the ear and lower jaw of the same side, or both sides, as may be; these parts being tender and painful. Sometimes the swelling begins in the parotid gland in front of the lower part of the ear,—the same gland which is swollen in mumps. The throat becomes swollen inside, where it soon becomes more or less overlaid or covered with a whitish deposit, usually commencing on the tonsil or the palate, and thence

gradually spreading ; but it may begin at points out of the line of sight, and thus escape detection. Cases occur, too, in which there is no local manifestation of deposit to be detected at any time. If the air-passages are to become involved, they become covered with the membrane within a day or two of its appearance in the upper part of the throat, or at least, except in rare instances, before the termination of the first week. When the air-passages are involved, the special symptoms are similar to those to be mentioned under the head of croup, and which become super-added to those of sore throat. While the deposit is spreading, the patient usually becomes more and more prostrated in strength. The disease is very apt to terminate fatally, especially in delicate and feeble persons, death taking place within a few days in some cases, and towards the end of the second week in most of them ; exceptionally not until four or five weeks. Manifestations of recovery are usually presented between the eighth and fourteenth day in most instances. Paralysis of the throat is not infrequent after recoveries from diphtheria, and the paralysis may extend to other parts of the body, especially the legs, and may even involve the heart and lungs, when it will be fatal. The eyesight is not seldom seriously affected from paralysis of the muscle of accommodation or focusing.

The treatment of diphtheria must be pursued under

the direction of the physician, whose efforts are chiefly directed to sustaining the vital forces of the patient, providing for nutriment, and endeavoring to get rid of the accumulations in the throat, nose, and air-passages. There are some general points, however, with which heads of families should become familiar. The patient should be isolated as much as practicable, to prevent spread of contagion ; and all the clothing, food and bed-utensils be at least partially disinfected before they are removed and carried through the house. Carbolic acid water is the most available agent for this purpose in most instances. The mode of using it may be learned from the physician. Carpets, curtains, and stuffed furniture should at once be removed from the sick-room, which ought to be at the top of the house, and well ventilated. After the case is over, this room and all it contains should be thoroughly disinfected by exposure to the fumes of burning sulphur, in order to lessen to a minimum the danger of infection for future occupants. When the deposits in the throat are dry and adherent, it is considered very important, by many physicians, to keep up an abundance of moisture in the room by means of dishes of boiling water, wet cloths hanging about, and the like, in the hope of keeping the matters in a fluid state, so that they may be more easily expelled from the body. Systematic inhalations of steam are also used at appropriate intervals in addition. When the mem-

branes are in the air-passages, it is very important that they should be coughed out, lest they accumulate in quantity dangerous to breathing. To favor their detachment and expulsion, it is customary with many physicians to see that a large stock of unslaked lime is in the house. When the dreaded time comes, this lime is broken into fragments the size of furnace coal, and a few of them at a time are slaked by the bedside, the fumes from the lime being directed towards the mouth of the patient by some extemporized method, such as covering the vessel with a big paper bag, as a flour bag, with one of the corners torn out so as to direct the fumes through it. This process is repeated every half-hour, hour, or at longer intervals, as may be required. Sometimes, in addition, a piece of lime is kept in a vessel of heated water by the bedside, so as to maintain a continuous evolution of steam and lime particles. The lime gets into the air-passages and detaches the membranes, and the steam gets beneath them through these inlets and loosens them, so that they can be coughed up. The masses may accumulate in the throat and mouth and the patient be unable to eject them; and they may require removal with the finger of the nurse or attendant.

In some cases where the upper air-passage becomes so occluded, or so paralyzed that sufficient air cannot get through to sustain life, it becomes necessary for a surgeon to cut a hole into the windpipe, and keep it

open, until the passage above becomes sufficiently pervious again. This operation (tracheotomy) is not always successful. More than half the children operated upon die in spite of it, and it is very rarely indeed that it saves the life of an adult. The reason is that the air-passage of the adult is so large in proportion, that the disease in the smaller tubes is too far advanced for recovery before the larger calibre of the air-passage gets obstructed. The operation is perfectly justifiable in children, however, and hundreds are saved by it from otherwise inevitable death. It permits them to breathe while they are going through the course of the disease towards death or recovery, as may be, but is not in itself curative. The earlier it is performed, after it appears requisite, the better the chance of saving life by it.

The importance of this operation is so great, that it is questionable, in many instances, whether parents are not culpable in refusing to allow their children this chance for life when urged upon them by their medical advisers. The fact that no certain promise of success can be given by the surgeon in any one case, does not begin to counterbalance the fact that lives are often saved by it, even under conditions apparently utterly hopeless, occasionally even directly after the patient has ceased to breathe. Even when unsuccessful in saving life, the operation often ensures freedom of breathing, and saves a dreadful death by

suffocation. The ease which follows, justifies the operation merely as an alleviator of distress.

Another point which should be realized by parents is the great danger of lifting a patient, low with diphtheria, in disobedience to the physician's injunctions. The heart becomes so feeble, at times, that the extra exertion necessary to pump the blood into the upper part of the body against gravity is too much for it, and it ceases to beat. The physician knows when this is imminent, and tells the attendant *not to allow the patient to rise or be raised for any purpose whatever*, until he deems such precaution no longer necessary.

## CHAPTER V.

### CROUP.

**T**HERE is a spasm of the air-passage sometimes called pseudo-croup or false croup, (see page 78;) but it is of nervous origin altogether, and has no affinity with croup other than that the main symptom is always spasm, which also occurs in some cases of croup, but is by no means a constant manifestation.

True or membranous croup is chiefly an inflammatory disease of the upper air-passage, attended with the deposit of a membrane like to that which accumulates in the air-passages in diphtheria. The deposit may extend along the windpipe, and even great distances along the bronchial tubes and their ramifications. There are no reliable chemical or microscopic tests which can distinguish between the deposits in croup and in diphtheria. On this account many physicians consider the two diseases to be identical. Others, among them the author, believe that they are not identical, and that there is no primary or special blood-poison at work in croup as in diphtheria, and that the danger to life in croup resides