A Short Series of Lectures to Ward Sisters.

LECTURE 7.—DIPHTHERIA (2).

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In my last lecture I pointed out that the chief factor in the case of diphtheria was not the presence of membrane in the throat, but the amount of toxin that had been manufactured in the throat and was circulating in the blood. There is, however, one condition in which the presence of the membrane itself is of importance and determines the course of treatment which must be pursued, and that is when disease has affected the larynx, and is causing more or less obstruction to breathing. I think it is as well to describe this portion of the disease at some length because it is essential for all nurses who are working in diphtheria wards to understand exactly what obstruction to breathing means, and how their observation of the patient affects the treatment that the physician proposes to adopt. Moreover, it is within my experience that nurses very often regard cases of any obstruction to breathing with some trepidation, and it may be comforting to your probationers to know exactly what is going to happen, and perhaps, especially, what is not going to happen.

An attack of diphtheria may affect the larynx in two ways: It may either begin in the larynx or in the windpipe below it, and may be confined throughout to those regions. Or, on the other hand, it may appear first on the tonsils or palate or in the nose, and may spread from those situations to the larynx and trachea. In the former case, we speak of the attack as one of primary laryngeal diphtheria, and in the second case, as a secondary infection. The distinction between the two is important because the secondary infection is preventible. If at any time of the disease the membrane is seen to be confined to the mouth or nose, and has not spread to the larynx, and antitoxin be then given, extension seldom if ever takes place to the organs of breathing. It is a distressing fact that a great deal of the laryngeal diphtheria in this country is preventible, and has not been prevented.

Whether the attack be primary or secondary, however, the symptoms are the same, and I want you to understand very clearly in what order these symptoms come on, and what each of them means. I will divide them into three groups.—

Firstly, we have those symptoms which show simply that the patient has got an affection of the larynx; they merely show that the disease is there; these are (firstly) a croupy cough, and later not only a croupy cough but croupy breathing also; in other words, instead of the respiration being inaudible, as it should be, there is, both with inspiration and expiration, a distinct noise, or laryngeal stridor as it is usually called. The cause of this is simply that the opening of the larynx is slightly narrowed either by swelling or by the deposition of membrane on it.

The next stage is that in which the patient is getting in enough air for his requirements, but is making an effort in order to do so. These signs of effort are, firstly, the bringing into action of what we call the extraordinary muscles of respiration, viz., the muscles between the ribs, and those large muscles known as sternomastoids, which reach from the mastoid process, with which you are familiar, to the collar bone and first rib; their purpose is, under ordinary circumstances, to move the head when the ribs and collar bone are fixed; when they are required to help respiration the head is fixed and the collar bone and ribs are pulled up; at the same time the nostrils are seen to be working with respiration.

Another sign is retraction or recession or sucking in at the pit of the stomach and of the neck just above the breast bone. This is a most important sign, but it is necessary to be very careful in interpreting its significance. In the first place, it varies very much with age. If you undress a small baby, say of two or three months, and then make it cry (it is well to do this in the absence of its mother), you will notice that there is marked recession of the stomach and root of the neck, though it is quite obvious from the lustiness of the cry that this baby has no laryngeal obstruction whatever. Again, a child somewhat older (four or five years) may have a little inflammation of one or both lungs; you may often see in such a case that there is the same retraction, though the larynx is quite unaffected. Similarly, a child of twelve or fourteen may have considerable obstruction of the larynx, and yet have very little retraction.

The sign of retraction, then, is a useful servant, but a very bad master; it shows us merely that the patient is making an effort to get his breath. In particular, I must caution you, for a reason that will appear later, against thinking that there is no laryngeal obstruction when there is little or no retraction present.

The next stage is that in which a patient is not getting in quite enough air for his require-

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