

from the tonsil, which is usually the earliest point of attack, upwards through the nose, downwards through the larynx into the trachea and bronchi, or be limited to any one of these situations, or attack any abraded surface or exposed mucous membrane. Deposits have been found in both the stomach and intestines.

The pseudo-membrane is formed from epithelial cells, which have become inflamed and killed by the poison leucocytes, and fibrine, and contains, besides the Klebs-Löffler bacillus, which is mostly near the surface, various pus-forming and pathogenic germs.

The diphtheria bacillus does not penetrate the tissues, but in passing through its life history produces toxins which are readily absorbed and produce the various toxic disturbances found in the disease. The associated germs may penetrate the tissues and produce suppurations or pneumonic complications. Necrotic foci are found in the bronchial glands and, in the severer forms, in the mesenteric and intestinal glands and internal organs.

From the paucity of lymphatic supply in the tonsil and larynx, little glandular enlargement takes place, but when the disease extends to the nasal chambers, the vascular and lymphatic supply is rich, and the glandular and systemic infection are apt to be early and profound. Albumin is found in the urine, and in the severer forms parenchymatous nephritis is apt to occur. The capillaries may take on hyaloid degeneration, and the blood remain fluid after death. This explains why nose bleeding is such a dangerous symptom. Dilatation of the heart cavities from muscular weakness is common, and may be increased by renal or pulmonary congestion. This condition of heart has an important bearing on operative procedures, and as it may not improve after intubation or tracheotomy, these operations should not be delayed till dilatation has taken place.

The diagnosis of diphtheria is often attended with much difficulty. In severe cases there can be little doubt, but in the mild ones and where the pseudo-membrane is limited to the tonsil and not in well formed patches, the diagnosis can only be cleared up by time or a bacteriological examination. During an epidemic we have all met with a greater than usual number of sore throats. This may in part be due to people being frightened,

and coming with conditions which at another time they would not mention, but it is highly probable these are often mild cases of diphtheria, with little or no membranous deposit.

In the larynx or bronchi a primary deposit may or may not contain the Klebs-Löffler bacillus, but the consequent laryngeal obstruction is the same. If the Klebs-Löffler bacillus be taken as the test it becomes our duty in all doubtful cases to have a bacteriological examination made as soon as possible, and it is criminal to send patients to an isolation hospital on the first appearance of deposit on the tonsil, and surround them with cases of the pure culture before such an examination has been made. It is equally imperative that patients either in hospital or private practice should have cultures made from their throat and nose before their discharge. If this were thoroughly done there would be less complaint of discharged patients communicating the disease.

In the prophylaxis strict isolation is the most important point. This in country places, and especially in small houses, is often difficult. Where the well children can be removed in these cases their lives are often saved, but often there is no place to send them to, and they are forced to live in the infected house.

Under these circumstances we should treat those who are well from the first with the hope of either preventing their contracting the disease, or failing, that, modifying its severity. At present we are anxiously looking to antitoxic serum as a proficient prophylactic. But while using it we must not neglect other means. The children should be kept out of doors as much as possible, and warmly clad to avoid colds. Their digestion must be attended to, and iron and potash may be given with benefit. The nose and throat should be sprayed out with an antiseptic wash three or four times a day, to prevent lodgment of secretions and wash out any germs that may have settled there. The mouth and teeth should be frequently washed and disinfected.

School hygiene and a careful supervision of pupils are most important, especially during an epidemic, as at that time mild cases may be able to attend school through part or all of the disease. Children with sore throats should be sent home at once, and if cases recur, the school should be closed.