

it, the stiffness disappearing by magic, whilst no harm can follow the treatment.

Stiffness may follow on a sprain from effusion taking place, not into the synovial membrane of the articulation, but into a sheath in connection with a neighboring tendon. One has often to treat such effusion in the sheaths of the extensors of the thumb and wrist, and also in those of the tendons of the tibial muscles and of the extensors of the toes. It is, of course, easy to differentiate between an articular and a thenar effusion; the same principles direct the treatment in each case I have at the present time under my care a wrist which is stiffened from slight effusion into the sheath of the radial extensors; great relief is being afforded by the firm compression of a domestic roller which is kept constantly wet.—*The Practitioner*.

SOME PRACTICAL SUGGESTIONS ON THE TREATMENT OF DIPHTHERIA.

Dr. Wm. Porter (*Journal American Medical Association*):

Diphtheria is a common disease, and it is one of the most fatal. As one illustration of many, in five years there were 17,193 cases in New York alone and 7,293 deaths. It is a disease that every physician will be called to treat sooner or later, and being called must act promptly. This is not the place for a long essay upon the different theories of diphtheritic contagion and progress, rather let us enter at once upon the discussion of the practical questions involved in conducting the disease to a favorable issue.

Let me very briefly sketch the manner of invasion according to conclusions which seem most reasonable and are by many accepted:

1. Diphtheria is contagious—or rather contagious, and of parasitic origin.

2. It is most readily implanted upon a mucous membrane denuded of its epithelium.

3. It is probably always local in its incipency, sometimes becoming rapidly systemic, though in rare cases apparently systemic, from the beginning.

To further explain rather than to argue these propositions, let me say that the best protection against diphtheria is mucous membrane entirely healthy; and an ordinary acute or subacute laryngitis or pharyngitis is a condition favorable to the implanting of the diphtheritic germ. When the epithelial layer is intact the diphtheritic germ finds no foothold, but when there is an abrasion or denudation of the lining membrane, the diphtheritic bacteria first attach themselves to the surface so prepared for them. This is the local period of the disease, and no micrococci are found in the blood—there is no constitutional symptom. Sometimes, though, there may be rapid surface involvement, and free formation of the characteristic membrane, there may still be little absorption of the diphtheritic virus.

Many of these almost purely local conditions

suggest a doubt as to their specific nature. It is well to give the patient the benefit of the doubt, and to treat urgently all suspicious looking exudations upon the surface of the respiratory tract. Practically, a certain number of cases of diphtheria are constitutional from the beginning, the point of infection being in some recess of the naso-pharynx or larynx and easily over-looked—or is beyond the range vision. I am not sure but that infection may occur from primary invasion of the membrane of the alimentary canal. Klebs, in the second Congress of the German Physicians, speaks of a diphtheritic involvement of Peyer's patches, resembling the reticular appearance in the earlier stages of typhoid. In by far the greater number of cases the rapid multiplication of the bacteria—whether spheroid—bacteria as are found in severe cases, or whether short and slender rods as in milder cases—produces an inflammation of the mucous membrane, exudation takes place, the epithelial cells die, and the bacteria pass into the blood and rapidly multiply throughout the circulation. Even should we deny with Beale that the contagium is bacteria, we still must admit that the hypothesis of local infection furnishes the most rational explanation of the sequence of symptoms.

Granting this, we have two purposes in treatment in the early stages of diphtheria:

1. To destroy or render harmless the local manifestation of the disease.

2. To increase the power of resistance in the general system to infection.

In dealing with the false membrane all measures which would tend to irritate or injure the air passages, should be avoided. There should be no tearing away of the exudation, or application of caustics—nor do I think that, except in cases where there is only a small, well defined patch of membrane, the use of the galvano-cautery will prove expedient. To prevent absorption, not only should we avoid making new abrasions in the throat, but I have thought it wise, as far as possible, to cover up those that already exist.

First of all, it is well to remove from the naso-pharynx, or pharynx, if that be the site of invasion, whatever of accumulated mucus and debris there may be. This may be readily done by means of a small syringe, and a weak solution of salt water, or of Listerine. This may be used either through the nostril or directly in the pharynx.

To loosen the attachments and hasten the resolution of the diphtheritic membrane many means have been advocated.

When the patch can be reached, a solution of papayotin may be applied; or better still, one of trypsin. This last used in solution, as suggested by Fairchild and Foster, or still better, a few grains with one or two of bicarbonate of soda, made into a paste with water and spread upon the diphtheritic patch, is the most rapid solvent I have known. If the local disease is beyond the reach of such an application, an alkaline solution of trypsin may be sprayed into the nose or larynx.