

and that the systemic effects are in direct proportion to the amount of absorption of the products of the bacilli, have an important bearing on treatment. It is very important that treatment should begin early, so that the germs may be attacked when few in number and before much of their products has found its way into the system. By well-directed local treatment there is a reasonable prospect now of lessening the vitality of the germs, checking their powers of reproduction, and modifying, if not entirely checking, the disease.

When the membrane is small in amount and so situated that it can easily be got at, it may be destroyed by caustics, the electric wire, rubbed off and the surface disinfected, or its vitality destroyed by injecting medicines under its surface as in Seibert's method. These are all methods aiming at the immediate destruction of the disease, but are all applicable only to a limited number of cases. The cautery method is open to the objection that you are apt to burn more than you desire, and if healthy membrane is burned the disease will spread to the full extent of the burn.

It has been objected that the method of rubbing or peeling off the membrane, leaves a raw surface which will allow the germs an entrance into the system; but this objection cannot hold, as you do not rub deeper than the membrane existed and was in intimate contact with the tissues; and again it has been amply shown that the germ itself does not enter the tissues. Of course the membrane will reform on the raw surface, but if the surface is thoroughly rubbed with a 1 to 500 bichloride solution, the newly formed membrane will be thinner and of less vitality and should be kept rubbed clean every few hours.

In the few cases in which I have tried this method I have been fairly well pleased, and thought while the length of the disease was perhaps not diminished, yet the systemic disturbances seemed less and the patients felt better for the treatment. It is of course obvious this treatment can only be pursued where the membrane can easily be got at and is small in amount.

Siebert's method of injecting disinfectants under the membrane has the same object in view, viz., to kill the germ; but unfortunately I have no personal experience with the method, and on that account am unable to speak of it.

Papoid, lactic acid, and particularly the peroxide of hydrogen, are at present extensively used, not only for dissolving the membrane, but as disinfectants and germicides. Solutions of these substances can be applied to the membrane in any situation, and are very satisfactory in their action.

Where the nasal cavities are involved, the peroxide is particularly indicated, keeping down the foul smell and diminishing very materially the amount of poisonous matter absorbed.

We may not be able to kill the bacillus, but we may reasonably hope to interfere with its vitality and growth, and also reduce its virulence.

Cases have recently been reported where the membrane was full of the characteristic bacilli, but with little or no constitutional symptoms, and the vitality of the germ so low that it could barely be called contagious. And if we cannot use remedies strong enough to entirely kill the germ, we may with reason hope to so modify it as to bring it to the condition above described.

In reference to the use of the peroxide of hydrogen, there is a precaution necessary when applied as a spray. The solution may loosen up the superficial layers of the membrane and liberate the contained germs, while the force of the spray during the act of inspiration may carry germs into the larynx and cause deposit there. This has happened in some of my cases, but fortunately they recovered, the secondary deposit not having a very great degree of vitality.

Of the various local remedies used at the present time, preference is given to hydrogen peroxide, solutions of hydrarg. perchloride and carbolic acid.

I like to apply the bichloride of mercury with a swab, of a strength of 1 to 4 or 5, or while I can easily get at all the membrane; but of course this is of too great a strength to allow patients to handle.

Where there has been a good deal of pain in the throat, especially in adults, I have found great benefit from the use of Lester's cold coil. It seemed to limit the spread of the membrane, and to a certainty, gave marked relief to the patient.

When by the coil the larynx may be made anæsthetic, it is quite likely the temperature may be so far reduced as to modify the rapidity of germ growth, which in the case of the Klips Lœffler bacillus, is very much retarded, or almost checked at 64° Fahr.