ABSTRACT OF DISCUSSION

DR. HARVEY P. JACK, Canisteo, N. Y.: Kocher, in his latest work, expresses wonder that so many of us continue to use absorbable sutures; he reports 100 cases of aseptic breaking-down of wounds. Catgut, chromicized or formalized, has been the only suture material that I have used since I began the practice of surgery. I will report one more case of aseptic breaking-down of the wound somewhat in detail, that you may be able to give some solution of the cause of breaking-down. The case was one of hysteromyomectomy; the time consumed was only thirty-five to forty-five minutes, and the wound was closed in layers by means of No. 2 chromic catgut, made by one of the best manufacturing houses in the United States. The patient did well for two weeks with normal temperature; then I was summoned to the hospital by the statement that the patient had vomited up her intestines. The wound had broken open and a large part of the small intestines was lying on the abdominal wall. I introduced three layers of sutures, using catgut for the buried sutures and re-enforcing that with silkworm gut. The woman made a perfect recovery and left the hospital three weeks from the time of entrance. The patient was pronouncedly gouty. Whether that had anything to do with the rupture of the catgut I do not know. She was also a neurasthenic, although she had been carefully prepared for the operation and re-enforced in every way. It was, however, with much difficulty that she was properly nourished. But the catgut in the wound was absorbed almost entirely at the end of two weeks. Since that experience I have closed the peritoneum with silk. The suture material was thirty-day catgut.

DR. D. TOD GILLIAM, Columbus: For a good many years I have used absorbable sutures in my abdominal work, and up to six months ago I have used the method of closing the abdominal wound by overlapping the fascia as we do in the hernial cases. I used the chromicized gut and found that I was having a great many cases in which the wound would open—not down to the abdominal cavity, but the outer layers would open. There was no suppuration, but a secretion of serum, and it was due undoubtedly to the irritation of the unabsorbed catgut. I am sorry to say that by reason of this I have been obliged to come back to the old method of the silkworm suture, using the method known as the “figure-of-eight suture.” It is not satisfactory to me in all respects, but I have had so much evil result from the chromicized gut that I have been obliged to return to this antique method.

DR. A. ERNEST GALLANT, New York: My experience shows that difficulty in the abdominal wound has often been due to my having tied a double knot in the suture material. While absorption of the suture takes place the knot remains as an irritant because of its consistency.

DR. HENRY O. MARCY, Boston: One who will carefully read the paper *in extenso* will find that the criticisms made and many others have been answered. In the case in which the No. 2 thirty-day catgut was used and the tissues broke down, I think that there was something wrong with the repair process and not with the catgut. You all know that two weeks will give carefully coapted structures time to unite. It is a good plan, with a long abdominal wall, to restrain muscular action. I put on a strip or two of adhesive plaster to hold the abdominal wall at rest. Well-selected kangaroo tendon will hold much longer than catgut. It is an important matter to have few knots and to put coapted structures at rest without there being any undue constriction—in other words, to immobilize the wound.

The Economic Cost of Tuberculosis.—The total cost in the United States exceeds \$1,100,000,000 per annum. Of this cost about two-fifths, or over \$440,000,000 per annum, falls on others than the consumptive. An effort to reduce the mortality by one-fourth would be worth, if necessary, an investment of \$5,500,000,000. The erection of isolation hospitals for incurables is probably the most profitable method at present of reducing the cost of tuberculosis.—Prof. Irving Fisher.

Clinical Notes

DIPHTHERITIC CONJUNCTIVITIS

MARIANA BERTOLA, M.D.

Attending Physician to Mills College
SAN FRANCISCO

This paper is not written from the standpoint of the specialist but from that of the general practitioner. It does not present anything new for consideration, but it calls attention to a condition which is more frequent than is commonly supposed.

FREQUENCY

Jacobi of New York says that about the year 1850 diphtheritic conjunctivitis was frequent and destructive. DeSchweinitz declared it rare in America and England and very prevalent in France and Germany. Since that period the number of cases reported has been less. In pre-antitoxin days Graefe reported three cases and three deaths; Gilbert, four; Widmark, one.

In 1904 Kooker reported eighty-one cases of diphtheria, in forty-seven of which diphtheritic conjunctivitis was present. In 1904 Juler also reported one case. In 1906-7 Bruns, having a splendid opportunity in the south, reported thirty-six cases. The *British Medical Journal*, the *Lancet*, and THE JOURNAL report no cases for 1906.

McCollom declares that the conjunctiva is rarely attacked by the Klebs-Loeffler bacillus. Of our local men, Dr. A. Barkan reports a small number of cases secondary to nasal diphtheria, also a number of cases of pseudo-diphtheritic conjunctivitis. Dr. W. B. Lewitt reports one “in which there was a distinct membrane at the inner angle of the eyes.”

CLASS: PRIMARY OR SECONDARY

The majority of the few cases reported have been secondary, and most commonly secondary to nasal diphtheria.

Stephenson makes note of a number of cases secondary to “bronchial diphtheria,” and to “running ears.” Barkan writes of a number of “pseudodiphtheritic” cases “in the wake of blennorrhoea in the adult and in the new-born.

Lewitt's case “was in connection with a most malignant case in which the larynx, pharynx and nasal cavities were involved. In the mouth the membrane covered a portion of the hard palate.”

The secondary cases are from autoinoculation from discharges from other infected areas.

In the *Lancet* of Jan. 4, 1908, Slater reports a case of a girl who was treated for some eye inflammation; a week or two later several white patches were found on the vulva and spread elsewhere on the skin. Anti-syphilitic treatment was tried for two years. Then after inoculation of agar and blood serum tubes and experiments on guinea-pigs, the Klebs-Loeffler bacillus was found. Diphtheria antitoxin was given and immediate improvement followed. Slater believes that the patient's eyes were the primary seat of infection.

Primary cases in attendants on patients in tonsillar cases have been reported, the discharge having been coughed by the patient into the eyes of the attendant.

SYMPTOMS

The period of incubation is from twenty-four hours to four days. McCollom says that diphtheria differs from

other infectious diseases, as the process of infection is similar to that of a dissecting wound. The organism finds access through an abrasion of the mucous membrane as an infection is produced from the prick of a needle at autopsy or a scratch during dissection.

The eyelids may have been red and inflamed for a few days or a few weeks. They become swollen and very painful. The child cries at every attempt to open his eyes. A membrane, gray or whitish-gray, like that found on the diphtheritic tonsils, forms on the conjunctiva. It may be delicate and thin, thick and strong, or in small patches, according to the severity of the disease. It may or may not extend to the cornea. Iris prolapsis, severe ulceration of the cornea and loss of sight may result. The removal of the membrane leaves a granular bleeding surface. The formation of the membrane may be attended by a seropurulent discharge which may contain the Klebs-Loeffler bacillus, accompanied by the *Bacillus xerosis*, the *Streptococcus pyogenes*, and the *Staphylococcus*. The lids may be glued together and much swollen.

The constitutional disturbance is as great as in other forms of diphtheria. The toxin generated in twenty-four hours is sufficient to produce death in severe cases. The effect on the heart must be constantly borne in mind. Systolic murmurs are frequent. The pulse is of peculiar soft character and if very rapid demands immediate attention; if very slow it predicts fatal results.

The glands of the neck may or may not be enlarged. Sterling writes of one case with a severe adenitis. Stephenson speaks particularly of the preauricular glands being involved. Italian and French writers report cases of diphtheritic conjunctivitis having no membrane, but a granular bleeding surface containing the Klebs-Loeffler bacillus, and yielding to antitoxin.

Diagnosis is easy with the aid of the microscope. The diphtheria bacillus can be distinguished from the pseudo-diphtheria bacillus by its losing its gentian violet more quickly when in alcohol than does the pseudo-diphtheria bacillus. The true diphtheria bacillus gives an acid reaction in neutral bouillon, and the xerosis never does. The injection of diphtheria suspension into guinea-pigs causes constitutional disturbance, while the pseudo-diphtheria causes a swelling only at the point of puncture.

TREATMENT

Before antitoxin days silver solutions, peroxid of hydrogen, borax, boracic acid and camphor washes were used, with great mortality. Recovery, if this took place, required from eighteen to twenty-four days.

Since the administration of antitoxin fatalities have dropped from 60 per cent. to 3 per cent. As in other classes of diphtheria invasion, the earlier the administration of antitoxin the better. Some foreign ophthalmologists deny that early injection of antitoxin prevents corneal invasion. Most Americans agree with them; Bull does not.

Dr. Lewitt advocates large doses of antitoxin, with no local treatment. Dr. Barkan recommends, in the treatment of true diphtheria, the injection of antitoxin; in the pseudo-diphtheria the use of silver salts; when the cornea becomes implicated, pilocarpin rather than atropin on account of the tension-decreasing properties of the first. Pilocarpin is used by some practitioners as an antipyretic, but it is denounced by others for its debilitating effects. Antitoxin renders the use of antipyretics unnecessary.

The following report of two cases may be of some interest:

CASE 1.—Patient.—Y. Z., aged 1 year, was seen by me for the first time three hours before he died. He had been attended by a physician for seven days and had been treated for bronchitis.

Examination.—The child lay in a stupor, clammy to the touch, with eyelids much swollen, as large as walnuts; protruding just below the rim was a fringe of thick grayish-white exudate. The breathing was halting and slow. The pulse was slow and irregular. When the child's mouth was forced open, the tonsils, soft palate, and part of the hard palate were seen to be covered with membrane. The eyelids were fastened together. When they were forced apart, a thick gray membrane was seen to cover the conjunctiva of the entire eye. A portion of this membrane was removed and sent to Dr. Webster for microscopic examination.

History and Clinical Course.—The serious condition of the child was explained to the parents, who had believed that the child had a "severe cold in its eyes and in its chest." The following information was drawn from the mother: The child had been taken, about two weeks before, to see a neighbor whose child had a "cold in the eyes." A short time after, the child was feverish, cried, and refused its bottle; its eyes became sore and swollen. It cried whenever its eyes were touched. It grew constantly worse until death. Dr. Webster reported the membrane as diphtheritic.

The infection of this child's eyes must have been secondary to the tonsillar diphtheria. A question remains unanswered: Did this child's throat become infected when he visited the child with the sore eyes?

CASE 2.—Patient.—A. B., 2 years old, was brought to my office. He had been suffering with a cold in the head for two days.

Examination.—The patient's nose discharged a thin watery fluid which irritated the skin wherever it touched. The discharge from his eyes was seropurulent. The eyelids were puffy and painful. When the eyelids were everted, small patches of gray membrane were seen on the conjunctiva. Examination of the tonsils and nose was negative. A specimen of membrane was sent to the laboratory for examination.

Treatment and Clinical Course.—Four thousand units of antitoxin were given the patient as soon as he could be put to bed. The next morning there was some improvement, but 4,000 units more were administered. In three days the patches of membrane had peeled off, and the nasal discharge had ceased. The laboratory report was that the membrane was diphtheritic. The child was kept in bed one week longer and completely recovered. This was undoubtedly a case of primary infection.

"Running ears," "sore eyes" and "discharging noses" may be considered by the laity as harmless ills, but there is no doubt that from these apparently harmless cases severe epidemics of diphtheria may result. It is also certain that this form of diphtheria is more prevalent than is supposed. Special supervision should be exercised in schools, and children displaying such symptoms be promptly sent home, with instruction to have the attention of their physicians. The medical profession should be on the alert to recognize the disease.

1050 Jackson Street.

Infant Feeding.—G. R. Pisek, in the *American Journal of Obstetrics and Diseases of Women and Children*, states that to be a successful infant feeder one should have a clear idea of (1) the general principles of animal nutrition; (2) the peculiarities of digestion in infants and young animals; (3) the food materials which may be used in feeding infants; (4) the methods of preparing foods; (5) the indications and contraindications for different kinds of food. With a working conception of these subjects, any physician may become a good infant feeder with practice.