These experiments render it probable that the complete removal of a given micro-organism from the mouth by chemical antiseptics is virtually impossible. When next we consider the conditions present in acute tonsillitis, the pain produced by movement of the throat and the swelling of the tonsils, such a sterilization is still less to be looked for.

It seems therefore reasonable to assume that we cannot completely destroy all the pathogenic bacteria present in the tonsils in acute inflammations of these organs, except, perhaps, in the earliest stage. Here there is reason for believing that if a given pathogenic micro-organism has developed in the mouth and about the orifices of the tonsils, its activity may be checked by suitable antiseptic applications, if the process has not gone too far. If, however, the multiplication of the organisms has extended beyond a certain point so that tissue changes are involved, or the system exhibits evidence of toxic absorption, it is improbable that antiseptic applications could destroy completely the organisms present; furthermore, we have reason to believe, in the light of studies in immunity, that they are productive of actual harm.

In this connection it is interesting to note the experience of A. E. Wright in the vaccine treatment of infections of the skin from the staphylococcus aureus. Localized surface infections, such as boils, carbuncles and septic wounds, improve rapidly under injection of aureus vaccines, but antiseptics appear to nullify the action of the opsonins. In the throat we have certain distinct analogies between acute tonsillitis and pyogenic infections of the skin. The same organisms are present in both cases. There is a local response to the presence of toxin and, under certain conditions, a systemic disturbance from general absorption. We may note, however, this point of distinction that, whereas in surface infections of the skin the amount of toxin which can be generated is relatively small, with a corresponding postponement of immunity in the throat, on the other hand, we have a relatively large surface of infection in direct communication with the lymph spaces, so that here a large amount of toxin may enter the system in a brief space of time. There would, therefore, be no need of adding to the amount of toxic products in the system by vaccine treatment, since the natural absorption of toxin from the tonsils is ample.

For the explanation of the preceding observations, we may offer the following hypotheses, not, to be sure, as conclusive, but, nevertheless, as measurably adequate.

1. In a beginning tonsillitis antiseptic applications may perhaps be used with benefit and their effect, if any, will be to abort the local infection. If the disease is not checked at the outset by the sterilization of the parts, but if it proceeds to the formation of white spots in the crypts with systemic involvement, further application of antiseptics may not only be useless but harmful.

It would appear possible that antiseptics may retard convalescence in two ways; first, by dimin-

ishing the number of bacteria in the crypts which are generating toxin and consequently prolonging the period required for the formation of the requisite amount of antibodies, second by their destructive action upon the tissue cells and phagocytic leucocytes of the host.

2. Forcible application of antiseptics may be followed by increased fever and cervical adenitis, indicating heightened absorption of toxin into the system. This phenomenon may be compared to the depression which follows the injection of too large a dose of vaccine in cases undergoing opsonic treatment.

3. In certain cases where acute tonsillitis appears to be aborted by local antiseptics, inflammatory manifestations may follow after a day or two in the neighboring regions and last for a number of days or several weeks. Here the possibility is suggested that the checking of the tonsillitis checked also the establishment of immunity, and that for its final accomplishment a longer period of growth of the organism upon the membranes of the nose, larynx, trachea or bronchi was necessary. In this connection we may recall the protracted duration of nasal diphtheria, as compared with the relatively brief time occupied by the pharyngeal disease.

In closing, I would suggest that here is a fruitful field for further study. If the conclusions to which I have come prove, on fuller investigation, definitely established, we shall have to modify our time-honored treatment of these affections. If I may venture to prophesy, our procedure will be approximately as follows: active early local treatment as at present with guaiacum, silver preparations, etc., the avoidance of antiseptics when once the disease is definitely under way and, above all, complete local and general rest. It may be said with truth that the most vigorous and active measure that we can adopt in acute infections of the throat is a consignment of the patient to his bed, with avoidance of meddling interference.

Clinical Department.

EXTRA-UTERINE PREGNANCY TWICE IN THE SAME PATIENT: PATIENT APPARENTLY MORIBUND AFTER THE SECOND OPERATION: TREATED BY DIRECT TRANSFUSION: RECOVERY.

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A NULLIPARA, thirty years of age, was seen in consultation with Dr. C. N. Cutler, of Chelsea, Aug. 31, 1907. Three weeks before she had had a menstrual flow, excessive in amount and ten days late. Since then there had been considerable left pelvic pain, worse on sitting. Examination showed pale skin, pulse 100, temperature 98°, papules on the nipples, and bimanually a soft cervix, sharp ante flexion and a left pelvic mass big as a plum. In the succeeding five days pain and the mass increased. A median celiotomy was done; the pelvis contained about eight ounces of old

liquid blood, and a left tubal mass about 2 in. by 5 in., mostly all blood clot, was removed. Diagnosis: left tubal pregnancy. The appendix was also removed.

Six months later (March 21, 1908), the patient having missed her second period by fifteen days was again taken with acute pelvic pain, this time on the right. Extreme pallor and collapse.

Examination showed the patient pale and gasping, and with pulse 180. Abdomen tender but not spasmodic. Diagnosis: Sub-peritoneal rupture of right extra-uterine pregnancy. The patient was in too great collapse to operate.

In twenty-four hours the pulse came down to 140, but twelve hours later there was another collapse. Pulse 160. Abdominal spasm and slight distention and dullness in the flanks. Temperature 101°, gasping respiration. It seemed best to operate at once.

Operation.—Median celiotomy. A right pelvic mass involving tube and broad ligament was found ruptured. The abdominal cavity contained about two quarts of blood, old and new, on the top of which floated the ovum big as a thumb nail. The mass was tied off, the abdomen emptied of blood clot and left filled with salt solution, and the wound closed hastily by through and through sutures. At the beginning of operation adrenalin 1-50,000 was started under the breasts, and in all one quart was injected.

The patient was put to bed, with no pulse at the wrist, gasping respiration, heart sounds good, but about two hundred in rate, cold extremities and nose—the complete picture of extreme shock. Preparations for direct transfusion had been made before operation and every detail was arranged. Following the technic of Crile, the left radial artery of the patient's brother was connected with what was probably the left median cephalic vein of the recipient. The transfusion continued without interruption twenty-five minutes, at the end of which a clot formed, probably due to the drying of the vein, though an attempt had been made to keep it warm and wet. A new connection was not made because the patient's pulse was now 156, and of distinctly good volume. There was a slight pink tint to the face. Respirations were slow and regular.

The convalescence was uninterrupted.

As in all clinical experiences it is impossible to say what element in the stimulation and after-treatment was the essential one. One can hardly say that the patient would have died without the transfusion. The quick appearance of a pink tint in the skin, however, and the almost immediate change in the circulatory condition, from no pulse at the wrist down to 156, with good volume, made a clinical picture of events taking place in twenty-five minutes which in such cases usually appears, if at all, only after many hours.

Medical Progress.

REPORT ON PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., AND JOHN LOVETT MORSE, M.D.

(Concluded from No. 25, p. 943.)

SPLENOMEGALY IN CHILDHOOD.

RIST¹³ considers that it is premature and foolish to try at present to make a rational classification of the splenomegalies and that it is necessary to be contented with separating out certain types. They may be divided first into those accompanied

by modifications of the blood and those in which the blood is normal, and the enlargement of the spleen constitutes, or seems to constitute, the whole trouble. He thinks it is a mistake to speak of anemia pseudoleukemia, splenic anemia, splenomegaly with anemia and myeloma, etc., because all forms of transition exist between these different hematological types. All these cases really deserve the term of splenomegaly with myeloid anemia because the most striking thing about them is the presence of a great number of nucleated red corpuscles in the circulation, witnessing to an erythrocytic hyperactivity of the marrow. This primordial symptom associated with anemia and splenomegaly is accompanied by a variable leucocytic reaction which is sometimes largely myelocytic, sometimes lymphocytic, sometimes mixed, sometimes even eosinophilic. Luzet and Lehndorff believe that this condition is a leukemia whose special characteristics are due to the early age of the patients. This position is not tenable at present, however, as the existence of a typical myeloid leukemia in infancy, although exceptional, does exist. Moreover, the syndrome of Luzet has been found by Weil and Clerc in all its details in the adult. It is distinct from myeloid leukemia and seems to constitute a distinct morbid entity. He states that various authors believe that all the varieties of anemia are merely modifications of the same disease and that the splenomegaly is an epiphenomenon of secondary importance. He thinks that the supposition that there is but one anemia, and that the presence, absence and degree of splenomegaly merely represent a variable reaction to various banal causes, is too simple an explanation and that it dodges the question rather than answers it. He believes that the study of the anemias and splenomegaly is still in the analytic period and that the period of legitimate synthesis is a long way off.

It is certain that there are symptomatic anemias and that the various causes enumerated may produce them, though indirectly. It is very possible that in the infant the prolongation of an anemic condition due to some cause or other may lead to a notable enlargement of the spleen. There remain, nevertheless, a considerable number of enlarged spleens which cannot without violence to the facts be attached to any definite causal affection. To attribute them indifferently to an intoxication or to an ordinary infection is merely to prevent oneself from seeking further. To say that we are ignorant of their etiology is to tell the truth in presenting the problem and attempting to solve it.

PATHOGENESIS AND THERAPY OF THE SECONDARY ANEMIAS OF INFANTS.

Although it is generally believed that the spleen cannot be the primary seat of disease in anemia splenica infantum and that it cannot be concerned in the regeneration of the blood because it often diminishes in size before the blood picture has improved and because the size of the tumor does not correspond to the severity of the anemia, Wolff, on the ground of a very unusual case of his