3. Where pregnancy is known to exist, but its location, in the uterus or elsewhere, is uncertain, the most satisfactory results are obtained by patiently awaiting the developmental changes which eventually clarify the situation.

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DISCUSSION

GEORGE WAYLAND COON, M. D. (3770 Twelfth Street, Riverside).—In the discussion of this paper on ectopic pregnancy by Doctor Slemons, I will attempt to briefly present a very interesting case of abdominal pregnancy we operated about two months ago. The mother and baby are both alive. The mother left the hospital this week and is about the house, and the baby is apparently normal and now weighs eleven pounds. This pregnancy had its onset during a rather subacute salpingitis, there being a profuse leukorrhea, some fever, and bilateral pelvic tenderness. She gave a history of some pain at about the third or fourth week, when she probably had a tubal rupture, but there was apparently very little bleeding. I saw her first about a month later when she came to me for obstetrical care. She was having considerable leukorrhea, not bloody, and some general lower abdominal cramps and tenderness.

From the third to the sixth month she felt well and progressed nearly as any pregnancy; then the movements of the baby began to be very painful, and she had great trouble with gas and constipation. Roentgen rays, taken at about six and one-half months, made the diagnosis of an abdominal pregnancy much more certain. She was then watched very closely, and was operated at eight months. A normal 7½-pound baby was found free in the abdominal cavity, with no evidence of hemorrhage or of an amniotic sac. Placenta was attached to the cecum and sigmoid, and to several loops of small bowel, also to posterior peritoneum, bladder, and lower anterior abdominal wall. About two-thirds of the placenta was removed. There was considerable difficulty in controlling bleeding. One blood transfusion was given previous to the operation, and three more the following week.

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LYLE G. MCNEILE, M. D. (523 West Sixth Street, Los Angeles).—Doctor Slemons has discussed a puzzling case in which operation demonstrated that a mistake in diagnosis had been made, and that instead of an ectopic pregnancy there was an intra-uterine pregnancy; and I agree with all of his conclusions. The results of ruptured tubal pregnancy are so disastrous, except when immediate operation is undertaken, that I feel that the best interests of the suspect patient are best conserved by opening the abdomen, even though in an occasional case operation reveals that an incorrect diagnosis has been made. In our experience at the Los Angeles County General Hospital, we find that the greatest mistake in diagnosis is made in confusing a threatened or incomplete abortion with an extra-uterine pregnancy. Regardless of how sure the clinician is of his diagnosis, it is advisable in every case of either abortion or extra-uterine pregnancy to carefully consider the differential diagnosis between the two conditions. At the County Hospital we have for many years performed autotransfusion on cases of extra-uterine pregnancy having free blood in the abdomen at the time of operation. This is a simple procedure, does not require any blood grouping or any other laboratory work, and the results have been so extremely satisfactory that I feel free to recommend the procedure without reservation.

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L. J. TIBER, M. D. (3875 Wilshire Boulevard, Los Angeles).—Since the treatment of ectopic pregnancy is so well established, one can hardly disagree with the author regarding the advisability of immediate operation after the diagnosis has been established. However, a new phase in the treatment of ruptured ectopic gestation deserves mention. Autohemofusion is perhaps one of the most important additions to our armamentarium. With a patient in shock, time is an important factor, and the procedure of using a patient's own blood for transfusion is of considerable value because it saves time: there is no necessity for obtaining and typing donors, the expense is greatly decreased, and it can be done by anyone and at any place.

Since my report in this JOURNAL of over one hundred autohemofusions in ruptured ectopic gestation, there have been over fifty more without a fatality nor any demonstrable morbidity. May I, therefore, urge the profession to acquaint themselves with this procedure, and thereby become better able to combat shock and hemorrhage in ruptured tubal pregnancy?

❋

DOCTOR SLEMONS (Closing).—I should like to congratulate Doctor Coon on the excellent result in the case he reported. Out of modesty, no doubt, he failed to include in his remarks some of the details he related to me in private conversation. His contribution has added materially to the full discussion of my essay. I am grateful to him and to all who have taken part.

CHRONIC ARTHRITIS—ITS TREATMENT*

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II

I SHOULD now like to describe the methods of treatment which the writer has found most satisfactory in his own practice.

AUTHOR'S PROCEDURE

Rehabilitation.—The writer's method of treating rheumatoid arthritis can be summed up in one word "rehabilitation"; that is, a general building-up of the whole human machine to a point where the patient is able to throw off the infection. This process of rehabilitation should begin with rest, either at home or in a sanitarium. There are very few sanitariums that exist solely for arthritics. The patient who wishes sanitarium treatment must usually go, therefore, to some general sanitarium. I often put the arthritic patient in a local hospital for intensive study and treatment, and then after four to six weeks of observation, send him away to rest in the country or to some first-class sanitarium. Patients with mild infections will usually refuse to give up their daily work and routine, and such patients must take their rest at home. They are advised to spend two or three hours in bed every day, in addition to long hours of sleep at night. The rest must be not only physical, but mental and emotional. Preferably, the mother should be away from her housekeeping and children, and the father should be absent from his business. In order to get the full benefit of the rest cure, it should be kept up for three to six months.

Focal Infections.—I believe that focal infection is fundamental in the etiology of rheumatoid arthritis, and I therefore believe that the removal of focal infection is the keystone to permanent relief of symptoms. Rest alone will often restore the arthritic patient to a complete freedom from

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symptoms, but unless the primary focus has been removed, a recurrence of the disease is very apt to take place within a year or two.

I have several other convictions about focal infections. I believe that the tonsil is the most frequent portal of entry for bacteria; infected sinuses come second; infected teeth are probably third in importance. I believe that time is a tremendously important factor in the removal of foci; in other words, unless the focus is removed early in the course of the disease, the benefits obtained from such removal are not striking.

A great deal of success in the treatment of focal infection depends on *who* removes the focus. A tonsillectomy performed by a clumsy operator is more apt to bring on an exacerbation of joint symptoms than it is to cure the patient. I believe that it is better treatment to remove the focus and then build up the patient, than it is to build up the patient and then remove the focus.

Climate.—The rheumatoid patient undoubtedly feels better in a dry, hot climate. We physicians who practice along the Atlantic coast send a good many patients to Southern California, Arizona and New Mexico. Florida and the West Indies are sometimes helpful, but the atmosphere lacks the dry quality of the southwest. But here again results depend on *when* the patient seeks the remedy. Patients with advanced cases of rheumatoid arthritis are often greatly disappointed over the results they obtain from a change of climate. The joints have been so severely damaged that recuperation is impossible.

Diet.—I think that there is some value in a low carbohydrate diet for rheumatoid as well as osteoarthritis, though I do not insist on it in patients who are below weight. It is excellent therapy, of course, for the overweight patient. In patients who are underweight, the physician can substitute fat in the form of cream, butter, etc., for the usual carbohydrate quota.

Vitamins.—I have already spoken of the use of vitamins in the treatment of rheumatoid arthritis, and have indicated my belief in their value as a form of therapy. In my own practice I make use of some of the well known combinations of haliver oil or cod-liver oil with viosterol, and supplement these with tomato juice and orange juice, and some one of the wheat germ products, such as embo or bemax.

Elimination.—The bowels, of course, should be kept well open. Elimination through the bowels, bladder and skin is a fundamental tenet in our therapy. As I have already indicated, Snyder is a great advocate of colonic irrigations. Fletcher, though he believes strongly in the importance of the colon in the etiology of rheumatoid arthritis, is opposed to colonic irrigations. The correct answer must be somewhere between these two extremes. In other words, the bowels should be kept open, but preferably by natural methods.

Secondary Anemia.—The rheumatoid patient tends to develop a secondary anemia. Sometimes this becomes quite severe. In advanced cases transfusions are indicated, but ordinarily some of the iron mixtures, such as ferric ammonium citrate or reduced iron, serve the purpose perfectly well.

Massage.—There is some debate among physicians as to whether massage is indicated in the treatment of arthritis. My own rule is to avoid massage until the active stage of the disease is passed; in other words, I never massage a hot tender joint. I feel somewhat the same way about exercises. Passive movements, of course, can be sparingly used in order to prevent ankylosis, but active exercises should be deferred until the acute stage of the inflammation is past.

Physiotherapy.—Other forms of physiotherapy are sometimes helpful, especially the ultraviolet light, though I would greatly prefer natural sunlight. Diathermy and the infra-red light may be useful where symptoms are localized chiefly in one joint. I have already spoken of the use of diathermy in the production of hyperthermia or artificial fever. The exact value of this method of treatment has yet to be determined.

Hot Baths.—I do not believe many of us realize how easily a temperature of 103 to 104 degrees Fahrenheit can be achieved by the simple expedient of a hot bath. If a patient, for example, is put into a tub of hot water at a temperature of 106 degrees Fahrenheit for twenty minutes, he will develop several degrees of fever. This, no doubt, explains in part the beneficial effect of hot baths for all kinds of rheumatic conditions.

Streptococcus Vaccine.—Streptococcus vaccine has become quite popular during the past few years in the treatment of rheumatoid arthritis, largely because so much evidence has accumulated that this disease is caused by some form of streptococcus. There is no time here to go into details of the modern bacteriological work along this line; but as evidence has accumulated that rheumatoid arthritis is a streptococcus infection, physicians have turned once more toward vaccine therapy in the hope that new methods of preparation and administration might lead to tangible results. This hope has been in part realized. Streptococcus vaccine is administered either subcutaneously or intravenously. The writer's methods of administering streptococcus vaccine are as follows:

Subcutaneous Method. — The streptococcus hemolyticus vaccine contains one billion streptococci to each cubic centimeter of vaccine. The first dose is 0.05 cc. Each succeeding dose is increased by 0.05 cc., but never exceeds 1 cc. If the patient has a severe local or mild general reaction with definite increase of joint pain following the injection, the previous dose of vaccine is repeated, or the amount reduced.

Intravenous Method.—The streptococcus vaccine is made up in various dilutions. Dilution No. 1 contains one million streptococci to 1 cc. of vaccine. Dilution No. 2 contains ten million streptococci to 1 cc. of vaccine. Dilution No. 3 contains 100 million streptococci to 1 cc. of vaccine. The first dose is 0.05 cc. of vaccine of dilution No. 1, intravenously. Each succeeding

dose is increased by 0.05 cc. When a dosage of 1 cc. has been reached, treatment with dilution No. 2 is started with 0.1 cc., increasing the dosage as before.

In both the intravenous and subcutaneous methods the interval between doses should be four to five days.

A large part of success in vaccine therapy depends on the persistence with which it is prosecuted. As a rule, very little benefit can be expected during the first two or three months of treatment. The injections should therefore be continued for at least three to four months. If improvement occurs, the treatment is continued. If no improvement occurs, streptococcus vaccination is either discontinued entirely or some new form of vaccine therapy is substituted.

Typhoid Vaccines.—In patients who are running a fever and who have actively inflamed joints, a series of foreign protein reactions with typhoid vaccine sometimes works wonderfully well. In our clinic we start with 50 to 100 million typhoid bacilli intravenously, and repeat the injection every two to three days until the patient has had six to eight reactions. If some care is taken in the selection of patients for this form of therapy, no untoward results will be encountered. The obvious counterindications are old age, weak heart and a history of pulmonary tuberculosis.

Orthopedic Measures.—So far I have said nothing about orthopedic measures in the treatment of rheumatoid arthritis. Orthopedic treatment is most important in spondylitis of the Marie-Strümpell type, and in arthritis of the hip and knee. Deformities or ankyloses in any of these localities lead to great discomfort on the part of the patient. For spondylitis, exercises and some sort of brace or corset are indicated to prevent the extreme kyphosis which often develops in these patients as the disease advances. Various orthopedic devices are in use to prevent contractures of the hips, knees and elbows.

Drug Therapy.—The drug treatment of arthritis can be quickly covered. Arsenic in the form of the cacodylates or salvarsan is a splendid tonic, and seems to work particularly well in arthritic patients. Personally I have been disappointed in the results obtained from the various forms of sulphur. My experience with the gold salts has been too limited to permit of an opinion, but certainly the results reported from France and England are very encouraging.

IN CONCLUSION

We physicians often speak with frank skepticism concerning the various measures employed in the treatment of rheumatoid arthritis, but isn't this skepticism due to the fact that too often we have to treat arthritics in the advanced stages, after the disease has been neglected either by the patient or by some other physician who took no interest in the patient's condition? I must confess that I dislike to treat advanced cases of rheumatoid arthritis, because I know that comparatively little can be done to cure them. I feel quite differently, however, about incipient cases. I take considerable satisfaction in attacking early cases of rheumatoid arthritis and watching the patient improve under the effects of therapy. In other words, the situation is not different in arthritis from that in tuberculosis or syphilis. The early cases yield well to treatment. The advanced cases are extremely stubborn. No doubt, as time passes and physicians become more familiar with modern methods of treatment, advanced cases of rheumatoid arthritis will not be so numerous, and there will be fewer invalid chairs in our poorhouses.

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TREATMENT OF FRACTURES—BY THE BÖHLER METHODS*

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Discussion *by Maynard C. Harding, M. D., San Diego; Fraser L. Macpherson, M. D., San Diego; Sterling Bunnell, M. D., San Francisco.*

In the past few years, increasing major injuries consequent upon automobile and industrial accidents have renewed interest in the treatment of the frequent fractures occurring as complications. Volumes have recently been written on treatment, apparatus and technique relating to fractures. Lorenz Böhler of Vienna has been credited with having pioneered in many of the more radical procedures which are rapidly becoming universally recognized in competent fracture treatment.

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