ished woman of dark complexion, tall and well formed. External genitals normal; vagina normal in its lower course, narrowed at a point 2 cm. below the cervix, so that it barely takes the tips of two fingers; cervix small, and situated in the right posterior portion of the pelvis; os single and of good size. The abdominal walls were rigid, and the shape of the uterus was difficult to make out, because of the rigidity of the walls and the situation of the uterus, which was fixed far back near the right sacro-iliac synchondrosis.

The sound went upward into the uterine cavity (probably the right one) a distance of two inches.

An abdominal operation was performed Jan. 27, 1903, for the purpose of exploration and relief of symptoms. On opening the abdominal cavity it was seen that the uterus was double, as shown in the specimen, and adherent near the right sacro-iliac joint. Although the ovaries and tubes appeared to be normal, it seemed best to remove the uterus in view of the persistence of the dysmenorrhea, notwithstanding two curettings and much treatment extending over eight years. The patient desired to be relieved at any cost.

Accordingly supra-vaginal amputation was performed in the usual manner. When the uterus was amputated at about the middle of the length of the cervix, two distinct canals were found, as shown in the specimen, the stump of the cervix being broader than normal.

The patient is now, Feb. 17, convalescing.

Examination of the specimen shows the two ovaries and two tubes normal in appearance; the uterus cleft about half the distance from the fundus to the internal ora; two separate uterine cavities extending downward nearly to the external os; several fibroid nodules imbedded in the substance of the uterine tissue, and much soft tissue lining each uterine cavity.

PREGNANCY IN A UTERUS BICORNIS SIMULATING EXTRA-UTERINE PREGNANCY.¹

BY FRANK A. HIGGINS, M.D., BOSTON,

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CASES of double uterus or of uterus bicornis are not very rare. They are much more common than is generally believed, probably they are of more frequent occurrence than any other congenital anomaly of the female pelvic organs. Undoubtedly many cases are never recognized. In going over the literature of the reported cases, one is impressed by the fact that many of these cases are discovered only by accident. It is fair to presume, then, that the average case gives rise to no symptoms whatsoever, and if occasion did not arise from other causes, for some form of operative measure in the pelvis, many cases would remain unnoticed indefinitely. Those forms of double uterus, in which the septum is continued into the vagina, are naturally more commonly observed in married women, because they occasionally give rise to difficulty in intercourse, and then again they are likely to be discov-

ered in making vaginal examinations in the course of labor. Yet cases of double uterus are frequently reported, in which a patient has passed through several perfectly normal labors, until finally, in a subsequent labor, the abnormal condition becomes evident, although giving rise to no obstruction to delivery. In reading the reports of recently published cases the writer was impressed by the comparative frequency of twin births in connection with the various forms, partial and complete, of double uterus. Attention to this may have been called before; if so, it has not been noticed, neither is the fact explained. It may have been merely a coincidence in these cases.

Pregnancy in one horn of a uterus bicornis has, in a number of instances, been mistaken for extra-uterine pregnancy, and that the differential diagnosis, except in particularly favorable circumstances, is oftentimes impossible, is generally well known.

The writer has operated upon two cases of uterus bicornis. In the last one, the subject of this paper, the abdomen was opened with the expectation of finding in a large and rapidly-growing tumor a tubal pregnancy. The patient was first seen by me at my office on Sept. 9, 1902. The history is interesting and instructive. Mrs. A., thirty years, married seven years, one normal full-term delivery five years before; two premature, four and three years ago, both accidental. The regular menstrual period was from May 29 to June 3, 1902. On June 18, at a private hospital, she had an operation for repair of the cervix and a curettement. She did not flow again until six weeks after operation, and then flowed for six days profusely. She stopped two days, commenced again and continued four or five days, on the second day passing a clot the size of an egg. Since then she continued to flow nearly every day until the operation. Blood was dark and many clots were passed. No pain, chills or fever, but had considerable nausea. She had been seen and examined by the physician who performed the cervix operation, who believed that there was an extra-uterine pregnancy, and advised operation.

On examination I found the uterus not increased in size, but crowded down into the pelvis and somewhat to the left, while in the abdomen above the pelvis could easily be felt a rounded mass somewhat to the right side and apparently connected with the uterus. This mass was rather soft, and resembled in consistency a pregnant uterus or a cyst, was about the size of an orange and seemingly containing fluid. The patient stated that she had not been with her husband since her operation of June 18. She was a Jewish woman, and if pregnancy existed, conception must have occurred in all probability some time between June 10 and 17. In view, then, of the mass on the right connected with the uterus, the repeated hemorrhages and the continued nausea, it seemed that the diagnosis of extra-uterine pregnancy of three months' duration was comparatively easily established. Moreover, the fact that the uterus had been curetted and the cervix repaired since sexual intercourse had occurred, would seem to exclude the possibility of an intra-uterine pregnancy. The fact that the pregnancy was not made out at the time of the cervix operation was not to be wondered at, because of the short time, probably not over a week, since conception. A

¹ Read before the Obstetrical Society of Boston, Feb. 17, 1903.

pregnancy of this short duration would scarcely make any noticeable difference in the size, even of a normal tube, when palpated through the abdominal and vaginal walls.

The patient was referred to the City Hospital, where a review of the history and a second examination only seemed to confirm the previous diagnosis. On opening the abdomen an oval mass about four inches in diameter, slightly to the right, was found. It had every appearance of the normal pregnant uterus, except that the left tube and ovary were then not seen in their normal positions, while the right tube and ovary were absolutely normal. On reaching deep into the pelvis on the left side, the tube and ovary were found, the ovary being normal. The tube in its outer two thirds was normal, but the inner third apparently suddenly enlarged, and was continued in its normal shape as a hard body about one-half inch in diameter and one and a half inches long, and ending at the uterus just above the internal os. The question at once arose whether the apparent enlargement of the tube was the small cornu of a uterus bicornis, or a fibroid enlargement of the tube. The latter condition is rare, but the fact that the tube ran directly into the end of the mass and not at one side, as would be expected if the body was uterus, seemed to make its removal advisable. It was accordingly dissected out at the uterine surface by a V-shaped incision, and the uterus closed in. Through the center of the body was a canal continuous with the lumen of the tube. The tumor was firm and dense, and was found by the pathologist to be uterus.

The patient recovered without reaction. She was kept in bed for four weeks in order to give the abdominal wall extra time to become firmly united, in view of the strain which was soon to be put upon it by the growing uterus. At the time of the patient's discharge from the hospital, pregnancy was about four and one-half months advanced, and there were no indications of an abortion. There was no further hemorrhage after the operation. Why the patient should have had so much flow during the early months of her pregnancy I am unable to explain.

I have no apology to make for the diagnosis or for the operation. As was stated in the early part of the paper, similar instances have been reported before under more or less similar conditions. The fact that the uterus had been curetted and the cervix repaired, after conception had occurred, would appear to exclude the possibility of an intra-uterine pregnancy. We must assume, therefore, that it was the left cornu of the uterus which was curetted, while the ovum was lodged in the right cornu. The two operations serve to demonstrate the remarkable tolerance of the pregnant uterus, in many cases, to operative procedure.

It has been repeatedly pointed out that with a rapidly-growing tumor to one side of and distinct from the uterus, with an irregular discharge of blood, and without the presence of any of the other so-called typical symptoms, the diagnosis of extra-uterine pregnancy should be made. The differential diagnosis of pregnancy in a uterus bicornis, from extra-uterine pregnancy, is oftentimes impossible except when the condition of the pelvis is known before.

Medical Progress.

PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

IMMUNIZATION OF CATTLE TO TUBERCULOSIS.¹

In a former report on Progress in Therapeutics we referred to v. Behring's work on the protective inoculation of cattle with dried human tubercle bacilli. V. Behring has continued his studies and experiments, extending their scope. On March 12, 1903, he announced in Vienna that he considered the immunization of young cattle to tuberculosis by his method as established. Henceforth he will devote his energies to the study of immunization in man. An abstract of the paper follows, but the reader will be well repaid by a perusal of the original communication. V. Behring is more convinced that the results which he has obtained are definitely useful than he was eight years ago, when he announced in the same city his work on Diphtheria Antitoxin.

Dried human tubercle bacilli are injected into one of the cervical veins. The bacilli were obtained from a laboratory culture eight years old. Four thousandths of a gram emulsified in 4 cc. water are employed for an initial dose. The injections give rise to a reaction varying with the age of the animal and apparently with the presence in it of some tubercular infection. The reaction increases in intensity with the age of the animal; very young animals are not at all sensitive. Fever and anorexia usually occur on the day following the injection, and in many animals persist for a week. Such animals either were tuberculous, or tuberculosis was suspected. Cattle more than one year old react alarmingly to the injections. They become dyspneic, present the signs of pulmonary edema, and a serous effusion in the pleural cavities appears. Death occasionally occurs. As a rule, after a few weeks these symptoms disappear, and if the animals are killed all traces of disease are absent. If the animals are killed at the height of the reaction, a pleuro-pneumonia with tubercle bacilli is found. The hypersensibility of such animals to the injections goes hand in hand with the power of their blood to agglutinate tubercle bacilli and with a positive tuberculin reaction. Behring interprets these phenomena as proof that such hypersensitive animals have suffered a tuberculous infection, even though they show no tuberculous focus. Protective inoculation is therefore contraindicated in animals over one year old, because they so often have been infected with tuberculosis. Calves under three months are the most favorable subjects.

In an earlier communication v. Behring showed that calves immunized with human tubercle bacilli were proof against direct inoculation with bovine tubercle bacilli. To test the immunity in another way, in the last year and a half he has kept immunized calves in stables with cattle in advanced tuberculosis. Several of these calves have been killed, and no tuberculous foci found. Autopsies have also been made on immunized cattle which have been distributed during this time in agricul-

¹ Berl. klin. Woch., March 16, 1903, p. 233.