der Professors Czerny, Werner and Caan) which acts as a clearing house for the great number of inoperable cases turned over to it from the rest of Germany, show apparent cures amounting to about 14%, in cases ordinarily looked upon as beyond surgical aid. The results are so impressive that they cannot be ignored. The more recent work of Prof. Caspari with combinations of cobalt, silver and copper salts, is interesting and indicates that further progress with the heavy metals will be obtained. In the cases of leukemia, Dr. Ordway shows that hemoglobin was increased and the number of white cells was reduced. The same result can be brought about by thorium-x, which is less expensive and more readily obtained than radium emanation. This result has been shown in a few cases I have seen, not by increase in the number of red cells, but it appears that the red cells carry more hemoglobin.

Clinical Department.

INTR A - ABDOMINAL HAEMORRHAGE COMPLICATING NORMAL PREGNANCY.

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AND

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IN the *Journal of the American Medical Association* for Nov. 2, 1907 (Vol. xlix, p. 1528), the senior author reported, with Dr. A. L. Hamilton,¹ a fatal case of ruptured uterine sinus complicating normal pregnancy. In brief, the data of this case were as follows:—

CASE I.

History. The patient, a healthy young Irish unipara, was seven months advanced in her second pregnancy, when, on Jan. 30, 1906, she suddenly began to have severe general abdominal pain. She vomited four times, was unable to take a long breath, and though feeling faint could not lie down with comfort. The bowels moved normally, and there was no disturbance of micturition.

Examination. The examination made at 6 p.m. revealed the following: The woman was very pale, face was pinched, mucous membranes were pale. There was considerable dyspnea, the patient was comfortable only when sitting up. The heart showed systolic murmur at apex, otherwise nothing unusual. The abdomen was distended, hard and tense, with a symmetrical tumor extending in the median line above the umbilicus and filling the abdomen—evidently a pregnant uterus. Fetal heart sounds had ceased. The abdomen was tender all over, especially in the right upper quadrant. Temperature was 100.6 F., pulse 110. Blood count, whites 14,000. A diagnosis of probable appendicitis

was made and the patient was prepared for immediate operation.

Operation. The uterus filled the abdomen so completely that a median incision seemed inadvisable, and as the greatest tenderness was on the right an incision four inches long was made over the outer border of the right rectus muscle in the appendix region. The muscle was retracted and the peritoneal cavity was opened with escape of much free, fresh blood. The abdomen was full of blood with a few clots, which were sponged out and the cavity explored. A seven months pregnant uterus was found. The possibility of an additional extrauterine pregnancy was here thought of, but a careful examination of the ovaries, tubes, appendix and all abdominal viscera revealed nothing abnormal. The hæmorrhage had apparently stopped. The wound was closed with through and through catgut sutures, a drain was left in and the patient was put to bed in poor condition.

Post-operative History. She was given "shock enema," heat was applied, salt solution was given by rectum, hypodermoclysis was performed, bed was elevated, etc. The patient recovered quickly from ether but grew restless, thirsty and blanched. Her pulse rose to 140, but was of fairly good character. The dressing stained badly and at 1 a.m. the patient was again etherized and a long median incision made. The abdomen had refilled with blood. The uterus was delivered into the wound and the abdominal organs were thoroughly explored. A bleeding point was found on the posterior surface of the uterus very low down and impossible to reach without emptying the uterus. An incision was made into the anterior surface of the uterus and a dead fetus was delivered. The incision was sutured with through and through catgut stitches and after contraction had taken place the fundus was tipped forward. On the posterior wall near the cervix was a large open bleeding venous sinus, with intestines bound together with adhesions, near hæmorrhage. The bleeding was controlled by three chromicized catgut sutures and a dry dressing was applied. The patient recovered quickly from ether, but despite all stimulation became pulseless at 4 a.m. and died at 6.45 a.m. The autopsy showed nothing beyond what has been reported.

At the time, a careful search of the literature failed to reveal any similar reported case. This case, therefore, is here quoted on account of its extreme rarity and of the relation which it bears to the following case of intra-abdominal hæmorrhage complicating normal pregnancy.

CASE II.

History. The patient, a high-strung but healthy young primigravida, wife of a professional man, was under the observation and care of the junior author during her pregnancy. The most conspicuous fact in her previous history was extreme dysmenorrhea, incapacitating her in bed for several days each month, with intense pain and a marked degree of prostration, amounting sometimes almost to apparent shock. She had a slight mitral lesion, following scarlet-fever, but her heart was well compensated, not enlarged, and occasioned no symptoms except for slight irregularity on over-exertion or undue fatigue. No cause for the dysmenorrhea had ever been ascertained. Medical treatment had

never proved of the slightest benefit. There had seemed no valid indication for surgical treatment. The dysmenorrhea was assumed to be of neurotic origin, and, as the patient became pregnant almost immediately after her marriage, it would seem not to have been due to any important ovarian disease or uterine maldevelopment.

The pregnancy proceeded normally, except that in the fourth and fifth months, at the time when she would have menstruated if not pregnant, the patient had considerable cramp-like, general abdominal and pelvic pain, for which she stayed in bed, but from which she recovered without incident. On April 18, 1914, at the menstrual epoch of the sixth month, she had a similar but much more severe attack, exciting grave apprehensions of impending miscarriage. She was kept in bed, given several small doses of morphia, and after 24 hours the pain gradually subsided and disappeared. Though not accompanied by definite uterine contractions, it was distinctly spasmodic in character. With none of these attacks was there any flowing or pyrexia. They seemed analogous to the previous dysmenorrheic attacks and in some way correlated with the menstrual molimina.

On the evening of May 16, being then seven months advanced in her pregnancy, the patient went to bed early, feeling very tired, but otherwise as well as usual. For some days previous she had been suffering from a diffuse capillary bronchitis, without fever, but with a good deal of cough. About midnight she woke with severe general abdominal pain and a sensation of faintness. She felt nauseated but did not vomit. The attack seemed similar to those she had previously had, and after a bowel-movement and the application of a hot-water bottle she felt somewhat relieved. She could not sleep, however, and towards morning the abdominal symptoms recurred with greater severity. She felt breathless and stifled, and in apprehension summoned her physician.

Examination. Seen at 7 a.m. by the junior author, the patient appeared pale, restless, and in a condition of considerable shock. The pulse was 140, slightly irregular, and of poor quality. The temperature was 98.0°. The abdomen was enlarged by the uterine tumor, but in addition seemed to bulge abnormally in the flanks, where there was dullness, shifting with change of position. There were generalized abdominal tenderness and rigidity. There was no flowing, and the pain was described as constant rather than periodic in character. Vaginally, the cervix was soft but undilated, the presenting fetal head high, and nothing abnormal to be felt.

Diagnosis. The patient was obviously in a condition of acute abdominal emergency. She presented the clinical picture of internal concealed hemorrhage, and, had the history coincided, a diagnosis of ruptured tubal pregnancy would unhesitatingly have been made. In the presence of a seven months' intrauterine pregnancy, however, it was felt that this was extremely improbable. Appendicitis, or other inflammatory process seemed also unlikely in the absence of fever. Intestinal obstruction, from any cause, was ruled out by the absence of vomiting. In view of the previous history, therefore, a probable diagnosis was made of acute torsion of a small ovarian cyst, the presence of which, it was held, would account for her previous dysmenorrhea and for the attacks of pain during pregnancy. As an alternative, the perforation of a previously unsus-

pected peptic ulcer was considered possible but unlikely. In any event, the patient was evidently in critical condition and probably in need of early surgical intervention. She was therefore immediately transported to a private hospital, and the senior author was asked to see her in consultation.

On arriving at the hospital, the patient's pulse was 160 and her temperature 96.0°. When seen by the senior author at 8.30 a.m., she was pale, thirsty, restless and in a condition of profound shock. His diagnosis was intra-abdominal hemorrhage of unknown origin; but in view of her precarious condition, he advised postponing operation until she should to some extent have recovered from the shock of transportation. She was therefore given a small dose of morphia and brandy, with water freely by mouth, and was warmed with heaters, the foot of the bed being elevated. Meantime preparations for operation and for transfusion were made.

Under treatment the patient's condition improved. The pulse fell to 140 and the temperature rose to 98.0°. Otherwise the physical signs remained unaltered. The white count was found to be 17,000. At 10 a.m. the pulse began to rise slowly, and by 10.30 was 152. Immediate intervention was decided upon.

Operation. Under general ether anesthesia by Dr. Richard H. Miller, the abdomen was opened by the senior author, assisted by the junior, with a linear incision slightly to the left of the median line, half above and half below the level of the umbilicus. The peritoneal cavity was filled with dark fluid blood. The pregnant uterus largely occupied the field. Both tubes were normal and intact. Both ovaries were normal in size and appearance. Rapid exploration failed to reveal the source of the hemorrhage, which, however, seemed to come from behind the uterus. To deal with the situation, it was evident that the uterus must be immediately emptied. A rapid hysterotomy was done, and a dead seven-months' fetus delivered. On drawing the contracted uterus forward into the wound, its posterior surface was found to be the seat of a diffuse angiomatous mass, equal in area to the palm of the hand, one of whose venous plexuses had ruptured and formed the source of the bleeding. This mass was not like the varices occasionally seen in the broad ligament, but resembled rather the pulsating cavernous nevus occurring about the face in children. The patient's pulse was now 180 and her condition almost moribund. It was obvious that she would not survive hysterectomy. The nevoid mass was therefore seized with large clamps and tied off with catgut in several places until the bleeding was controlled. The peritoneal cavity was then sponged clean, the uterus and abdomen were rapidly closed, and without further anesthesia, the patient was transfused by Dr. Beth Vincent, by the glass tube method, with about sixteen ounces of blood, her husband acting as donor. Her color rapidly improved, and when she was put to bed her pulse had dropped to 140 and was much improved in quality.

Subsequent History. The patient had a stormy and harassing convalescence. Immediately on recovery from ether, she was much disturbed by vomiting and by severe cough. The former was finally relieved by washing out the stomach; the latter, a sequel of her unfortunate antecedent bronchitis, persisted for days in spite of treatment with morphia, codeia, and ammonium carbonate. The temperature rose the night of operation to 101.8°, and continued between 101.0° and 102.0°. The pulse,

CASE II.

however, fell gradually to 120. For the first five days, the pyrexia caused no particular apprehension, but was attributed to the absorption of fibrin ferment from the extravasated blood in the peritoneum. On the sixth day, the temperature rose nearly to 103.0° and the pulse to 130, and there was a distinct augmentation of the tenderness in the lower abdomen. The lochia were normal in amount and not foul. Vaginal examination showed an indurated, tender mass of plastic exudate, occupying the left vault of the pelvis and extending behind the uterus, which was involuting normally and not tender. There was also slight tenderness along the course of the left internal saphenous vein. It was felt that the condition was probably one of pelvic thrombo-phlebitis, the thrombosis being initiated at and extending from the ligated points in the uterine angioma. The infection of this thrombosis might well have occurred from deficiencies of technic incident to emergency operation, or it might have been metastatic from the bronchial infection already present.

Whatever the cause of this complication, expectant treatment seemed wisest. Ice-bags were applied to the thigh and left lower abdominal quadrant, the head of the bed was elevated, fluids were pushed by mouth, the bowels were more freely moved by saline catharsis and enema, citric acid was given thrice daily, and ergot was exhibited in small doses. For several days the increased pyrexia continued, but the pulse tended downward. On the tenth day the pain and tenderness were gone; the temperature began to fall, and on the fifteenth day was normal. For five days it remained below 99.0° and the pulse below 100. Then there was a recrudescence of fever, with elevated pulse; and coincidentally there was an increase of pain in the pelvis and right leg. Vaginal examination showed the mass in the left vault much smaller, but a new and similar mass in the right vault. Evidently the thrombo-phlebitis had extended across to the other side. The previous

treatment was renewed, with the addition of hot copious vaginal douches twice daily. This complication also ran an eight-day course, the temperature subsiding by lysis to normal on June 15, four weeks after operation. The patient soon got up and about and on June 23 was transferred to her home, where she completed a trying convalescence, much prostrated by her hazardous surgical adventure, but recuperating with tolerable satisfaction. A moderate degree of ptosis, associated with her muscular weakness, was corrected with a suitable corset. Three weeks after her return from the hospital the pelvis was examined and found free from exudate or tenderness. The uterus was well involuted, retroverted, and apparently adherent.

Reviewing this case, it seems probable that the angioma or varix of the uterus was congenital, essentially neoplastic, in character and origin, and that its engorgement at the time of menstrual congestion was the cause of the dysmenorrhea. During pregnancy, this engorgement increased and gave rise to the monthly attacks of pain of increasing severity. Finally, during such an attack, a knot of the varix ruptured, producing the train of events described.

In the first case, there had evidently been a previous pelvic inflammation, and the hæmorrhage was apparently produced by the tearing of an adhesion behind the expanding uterus, which opened a sinus in the uterine wall. In both cases the consequent signs and symptoms were those of sudden, unaccountable intra-abdominal hæmorrhage complicating normal pregnancy.

Such cases must be regarded as exceedingly rare. Further careful search of the literature has failed to discover any reported case suffi-

ciently similar to either of these two to be properly included in a group with them. Smith² in 1911 reported a fatal case of intra-abdominal hæmorrhage from rupture of an aneurysm of the splenic artery during labor; and Wesenberg³ reported a similar one in 1912. As early as 1866, Simpson⁴ reported three cases of rupture of the hypertrophic spleen during pregnancy, labor, or puerperium; and similar cases have more recently been reported by Hubbard,⁵ Schwing,⁶ Savor,⁷ Le Lorier⁸ and Penkert.⁹ Chavannaz and Loubat,¹⁰ and others, have described cases of sub-peritoneal hematocoele of the broad ligament from rupture of uterine varices during pregnancy and labor, producing signs and symptoms of concealed hæmorrhage. But none of these cases seems sufficiently analogous to the two here reported to be included in the same etiologic category.

In the second case here reported, menstruation recurred a month after the patient's return to her home, and was almost entirely painless. Since this time it has continued regular, somewhat scanty, but still almost wholly without pain. The hopeful explanation of this apparent cure of the previous dysmenorrhea seems probably to be the obliteration of the uterine varix by the infective thrombosis following operation. It is, of course, too soon to be sure that this improvement will be lasting; but if it is, what seemed an unfortunate complication may prove a therapeutic blessing.

At the time of operation, and thereafter, it seemed certain that, if the patient survived, she ought never to run the risk involved in another pregnancy. The possibility, however, that this experience may have in large measure removed that risk, may lead to modification of this opinion. The patient is exceedingly desirous of a child. The nature of her trouble and its possible cure have been explained to her. She and her husband have been advised that, if her freedom from dysmenorrhea continues, her probable risk in another pregnancy is not prohibitive, and that if, after her general health is fully restored, she is willing to run an increased, though not excessive, risk for the sake of a living child, it is in her discretion to do so, provided she will submit to the closest observation during pregnancy and to an elective Cæsarean section prior to full term. Only time and fortune can determine whether this experiment will be tried and what will be its result.

CONCLUSIONS.

1. Intra-abdominal hæmorrhage complicating normal pregnancy is exceedingly rare, but, apart from trauma, may arise from various unusual causes.

2. In the presence of classic signs of internal concealed bleeding during the later months of pregnancy, a diagnosis of such hemorrhage, from unknown cause, should unhesitatingly be made, and appropriate treatment instituted.

3. Among the possible, rare causes of intra-abdominal hæmorrhage complicating normal pregnancy may be congenital angioma or varix of the uterus.

4. The presence of such a varix may be a cause of habitual antecedent dysmenorrhea for which no other evident anatomic or physiologic cause can be found, and which is unaffected by treatment.

5. In the grave exsanguination following intra-abdominal hæmorrhage associated with normal pregnancy, as in the commoner obstetric complications of placenta previa, post-partum hæmorrhage, and ruptured tubal pregnancy, transfusion is a life-saving procedure of proved value and should be promptly employed as soon as the source of bleeding has been checked.

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- ⁸ Le Lorier: Ann. de Gyn. et d'Obst., 1905, p. 75.
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- ¹⁰ Chavannaz and Loubat: Bull. de la Soc. d'Obst. et de Gyn., iii, 428, May, 1914.

Book Reviews.

Studies from the Rockefeller Institute for Medical Research. Volume XIX. New York: The Rockefeller Institute for Medical Research. 1914.

This volume consists of a series of 61 reprints of articles by various workers at the Rockefeller Institute. Notable are the contributions of Flexner on meningitis and poliomyelitis, of Noguchi on syphilis, of Rous on the cultivation of tissues and tumors, of Carrel on visceral organisms and the mechanism of tissue-growth, of Loeb on parthenogenesis, and of Peabody on oxygen content of the blood in pneumonia. The volume is a valuable compilation of original literature of research.

Report of the Bureau of Health for the Philippine Islands. By VICTOR G. HEISER, M.D., Director of Health, United States Public Health Service. Manila: Bureau of Printing. 1914.

Owing to the legislative change identifying the fiscal with the calendar year, this belated report, printed in English and Spanish, covers the transactions of the United States Philippine Health Bureau for only the half-year ended Dec. 31, 1913. There are now over 60,000 fewer deaths per annum in the Philippines than there were in 1905, and the Manila death-rate, in spite