

HENROTIN (F.) & HERZOG (M.)

VERY EARLY RUPTURE IN AN  
ECTOPIC GESTATION IN A  
TUBAL DIVERTICULUM.

BY

FERNAND HENROTIN, M. D.,  
Professor of Gynecology in the Chicago Polyclinic,

AND

MAXIMILIAN HERZOG, M. D.,  
Professor of Pathology in the Chicago Polyclinic.

REPRINTED FROM THE

New York Medical Journal  
*for October 21, 1899.*

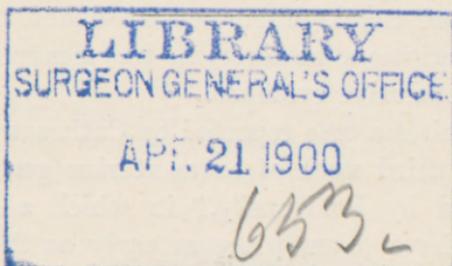
LIBRARY  
SURGEON GENERAL'S OFFICE

APR 21 1900

653 -



Reprinted from the *New York Medical Journal*  
for October 21, 1899.



VERY EARLY RUPTURE  
IN AN ECTOPIC GESTATION IN A  
TUBAL DIVERTICULUM.

BY FERNAND HENROTIN, M. D.,  
PROFESSOR OF GYNÆCOLOGY IN THE CHICAGO POLYCLINIC,

AND

MAXIMILIAN HERZOG, M. D.,  
PROFESSOR OF PATHOLOGY IN THE CHICAGO POLYCLINIC.

As is well known, rupture in tubal pregnancy, occurring during the first month, is comparatively rare. The infrequency of the condition is, of course, proportionate to the time which has elapsed since the implantation of the ovum into the tubal mucous membrane.

Cowles \* has recently reported a case of rupture of a tubal pregnancy, probably in the fourth week. This has caused Lamb † to communicate a report of a post-mortem in which rupture was claimed to have occurred

\* Cowles. An Unusual Case of Tubal Pregnancy. *Journal of the American Medical Association*, 1898, p. 641.

† Lamb. Tubal Pregnancy at about Two Weeks. *Journal of the American Medical Association*, 1898, p. 867.

in a case of tubal pregnancy at about two weeks. Lamb's description, however, is too meagre to be accepted as conclusive evidence.

Parry \* cites a case reported by Cathcart † of a rupture in the third week of extra-uterine gestation, and one reported by Rokitansky, ‡ in which a rupture is claimed to have taken place as early as the first two weeks of ectopic gestation.

The case about to be reported is undoubtedly one of very early rupture in an ectopic gestation, and is the more interesting as it evidently had its seat in a diverticulum of the main tubal canal. This location of an ectopic gestation has been observed in very few cases; one example of this variety was observed and reported by the authors a short time ago.\* The microscopic examination clearly demonstrates that the early rupture must have been directly due to the fact that gestation occurred at a point in the Falloppian tube which from the first had an extremely thin wall on one side.

CASE.—Mrs. M. A., forty years old, Swedish, house-keeper. Parents alive and well. One sister died of heart disease, otherwise the family history is negative. Patient first menstruated at the age of thirteen; menstruation was regular and normal in all respects. In 1889 she was married, and two years later her first child was born. Pregnancy and labor were normal, but the child was small and poorly nourished, and was sickly until its third year. The patient again became preg-

\* Parry. *Extra-uterine Pregnancy*, Philadelphia, 1876, p. 151.

† Cathcart. *Philadelphia Medical Times*, December 27, 1873.

‡ Rokitansky. *Manual of Pathological Anatomy*, Philadelphia, 1855.

\* Henrotin et Herzog. Anomalies du canal de Müller comme cause de grossesses ectopiques. *Revue de gynécologie et de chirurgie abdominale*, Paris, 1898, p. 633.

nant about four months ago, and thinks she had a miscarriage at about two or three weeks. At this time she passed clots and a great deal of fluid blood. The flowing continued intermittently for about three weeks. From this time on she menstruated every three weeks. The amount of the menstrual discharge was about the

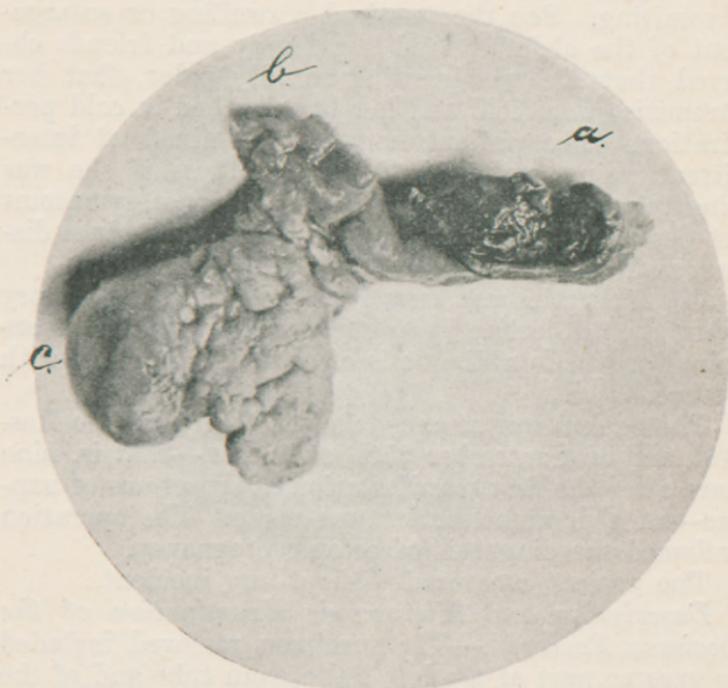


FIG. 1.—Ruptured Fallopian tube (natural size). *a*, site of rupture with blood coagulum; *b*, open fimbriated extremity; *c*, ovary with corpus luteum.

same as that of the menstruations prior to the miscarriage above mentioned, but it was less sanguineous.

On August 12, 1898, the patient menstruated as usual; three weeks later, or about September 2d, she had the usual menstrual phenomena, but no flow appeared. On September 24th, while in a large dry-goods store, she was seized with very severe cramps in the

lower part of the abdomen, more particularly on the right side. Soon after the onset of this attack she vomited, and, after great difficulty, was able to reach her home. By this time the pain was not quite so severe, but was still present.

Despite the fact that the pain was less intense, the patient grew rapidly weaker and had repeated attacks of vomiting. She then noticed a swelling or enlargement of the abdomen and her family and friends observed that she was growing rapidly paler, that her extremities were cold and her body bathed in cold perspiration. The patient herself complained of intermittent pains, and said that she felt as if she was going to have a baby. During the train of symptoms just described there had, however, been no vaginal discharge of any kind.

Dr. Henrotin was sent for, and, from the history given, the subjective symptoms, and the physical examination, made a diagnosis of ectopic pregnancy with rupture.

The patient was at once taken to the Polyclinic Hospital, and on September 25th, at 1 A. M.—that is, nine hours after the first manifestation of symptoms of rupture—an abdominal section was made. The operation confirmed the diagnosis of ectopic pregnancy.

The patient recovered without any incident.

*Description and Microscopic Examination of the Specimen Removed.*—The specimen removed included the greater part of the left Fallopian tube and of the ovary of the same side. The tube as a whole appears to be somewhat, but not materially, thickened. The length of the removed portion is six centimetres; its thickness, nine millimetres; the fimbriated extremity is comparatively small, but its plicæ are well developed. A small pediculated hydatid of Morgagni,  $6 \times 3 \times 2$  millimetres, is seen on the anterior surface of the ampulla. The tube wall is ruptured at a point 2.5 centimetres from the outer margin of the fimbriated extremity. The opening is elliptical in general outline, and is

two centimetres in its greatest diameter, which is parallel to the long axis of the tube. The margins of the rent are as thin as fine paper and are curled and rolled outward upon themselves. A blood coagulum  $8 \times 7 \times 6$  millimetres in extent protrude out of the tear in the tube wall and is firmly adherent to the latter. The fimbri-



FIG. 2.—Transverse section through the Fallopian tube at the place of rupture. The upper part of the field shows the intact tubal canal with numerous and intact plicæ; the lower part of the field shows decidual tissue and the blood coagulum. Leitz objective No. 1; ocular No. 1.

ated extremity is open, and on making a vertical median incision into the ampulla and the isthmus external to the rent the tubal canal is found to be very tortuous.

The portion of the ovary removed measures  $3.4 \times 2.8 \times 1.6$  centimetres and shows a large typical fresh and still gaping corpus luteum  $1.9 \times 1.8 \times 1.6$  centimetre in measurement. The greater part of the corpus luteum cavity is filled in with yellowish tissue, and the defect is in the form of a shallow depression.

The ovum and embryo were not found at the time of operation, as is so frequently the case in operative procedure for the relief of the conditions following rupture in ectopic gestation.

In estimating the age of an ovum or embryo from the clinical data we must always remember that the product of gestation may have originated either from an ovulation about the time of the last actual menstruation or from the time of the first catamenial period missed. This should always be taken into consideration because, otherwise, we are liable to make serious mistakes.

Judging from the clinical data in our case, the ovum was either two to three weeks or five to six weeks old, providing that ovulation as well as menstruation occurred at intervals of three weeks. When the size of the tube and of the rupture are taken into account we are compelled to infer that the ovum could not have been older than two to three weeks, because an ovum five to six weeks old could not have been accommodated in the tube, as it appeared at the time of removal, nine hours after rupture—that is, before any material changes could have occurred.

As the tube wall at the site of rupture was extremely thin, and could have contained only very minute blood-vessels, which could have given rise to only an insignificant amount of hæmorrhage, the hæmorrhage which caused the urgent symptoms in the case must have come from the tubo-placental sinuses.

Microscopical examination shows that the ovum had made its escape from the tube. The only embryonal structures found are syncytial buds, which are either attached superficially to the tubal decidua or imbedded

in the latter. The syncytial buds, however, do not show any degenerate changes. The tubal decidua shows a fairly well differentiated compact and spongy layer. Canalized fibrin is not found excepting in a very thin, insignificant layer in a few places.

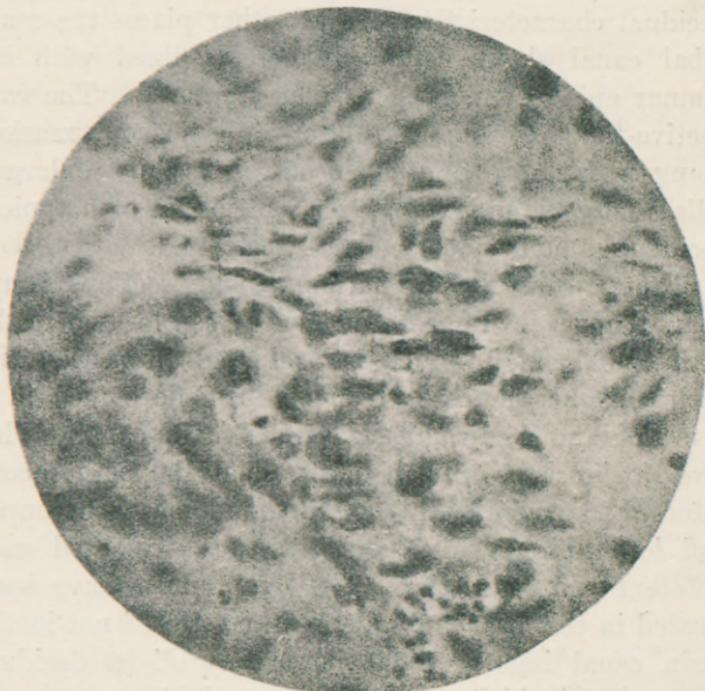


FIG. 3.—Group of decidual cells. Leitz pantachromatic, three millimetres; ocular No. 3.

The sections examined were taken from places opposite to the site of the blood coagulum and rupture, and also from locations external and internal to this point. The tubal canal was found to be preserved throughout its entire extent. In a zone extending through only a small number of sections one side of the

canal still shows simple, flattened, and drawn-out plicæ lined with flattened cuboid epithelium. The connective tissue on this side, while it shows marked changes, does not present any well-marked typical decidual cells. Toward the other side of the tube the epithelium disappears, and is replaced by a tissue which presents decidual characteristics. In all other places the main tubal canal shows complicated folds lined with columnar epithelium, in some places ciliated. The connective-tissue core of the plicæ, while it shows marked changes—namely, dilated blood-vessels and enlarged cells—does not present the characteristics of a typical decidua, as no decidual cells can be found.

From a careful examination of many sections, it appears that the ovum could not have been located in the main tubal canal, which is preserved throughout its entire extent, but that it must have developed in a diverticulum originating from the main canal. This diverticulum was probably located at the point above referred to, where, within a very small space, the upper and lower circumference of the tube presented such different characteristics. The ovum must have been located in this branch of the main canal and not in the main canal itself, which shows only slight decidual changes, and which was not laid open by the rupture.

A few words could be added with reference to the muscle fibres and blood coagulum. The muscle fibres around the main tubal canal are enlarged and hypertrophied. They are, however, rarefied, and open interstices—diastases—are seen between the different bundles of fibres and even between the individual fibres. Opposite the point of rupture, and between it and the tubal canal, the muscle fibres are especially hy-

peritrophied and the rarefaction is particularly prominent.

In the blood coagulum, which is adherent to the tube at the point of rupture, a dense, firm network of fibrin is seen. The red blood-corpuscles are well preserved as regards their shape and color, and hæmatoidin granules and crystals are absent. This demonstrates that the blood coagulum was recent and could only have formed shortly before the operation.

From the history of the case, and after consideration of the macroscopical and microscopical examinations of the specimen obtained by operation, the following conclusions may be drawn:

In this case an ectopic pregnancy occurred, located in a diverticulum of the tubal canal. This diverticulum was short and very probably traversed the fibres of the muscular coat outward in such a manner that it was covered by only a very small amount of tissue. The very thin outer covering of the diverticulum gave way very early in the course of the pregnancy—not later than the third week—under the influence of pressure and pressure atrophy, and a rupture and hæmorrhage from the placental site occurred.

At the time of this occurrence the ovum must have been alive, because there are no signs of previous hæmorrhage or degeneration of the decidua and syncytial buds.

Whether the diverticulum was congenital and due to an embryonic anomaly, or acquired in later life in consequence of a pathological process, is a question which we are unable to answer.







# OPERATIVE GYNECOLOGY.

BY

HOWARD A. KELLY, A. B., M. D.

IN TWO ROYAL OCTAVO VOLUMES.

---

With 24 Plates and about 550 Original Illustrations.

*The Lancet says :*

“The book, which is in two volumes, has now been published, and is undoubtedly the most important work upon this subject which has yet been written in the English language. Not only the great excellence of the letterpress, but also the artistic merit of the very numerous illustrations with which it is furnished, render the work one well worthy of the American school of gynecology and of the high reputation of its author. . . . Of the plates and illustrations it is impossible to speak too highly. Many of them are triumphs of the illustrator’s art, and the author is to be congratulated not only on his artists, but also upon his publishers, who have reproduced the artists’ drawings in such a remarkable manner. . . . The volumes are of the highest merit, will long remain the standard work upon the subject of which they treat, and should be in the hands of all gynecologists and surgeons performing pelvic operations.”

*Sold only by subscription.*

---

D. APPLETON AND COMPANY, NEW YORK.

