

increased from 400 to 1,010 c.c. in the twenty-four hours with marked relief to the patient. On June 2, theocin was again given the same as previously. The urine increased from 330 to 1,020 c.c. which brought much relief to the patient. By June 18 all edema had disappeared. The heart action was regular and no murmur was audible. There had been no recent attacks of asthma. The urine was scanty, but the patient felt much better and was planning to leave the hospital in a few days. The pulse was 70 and respiration was 18. June 22 only 250 c.c. of urine were passed, hence 0.6 gm. of theocin divided into three powders to be taken at 8, 9 and 10 a. m., was prescribed. Shortly after taking the first powder the patient noticed some cardiac distress which became much worse after taking the second powder. Free diuresis occurred but the pulse became rapid and feeble and the patient died at 2:30 p. m. with dyspnea and great precordial distress. Intensive cardiac stimulation proved to be of only transient value.

Clinical Notes, Suggestions, and New Instruments

A DOUBLE LUMEN IN A HUMAN FALLOPIAN TUBE*

HERBERT EDMOND METCALF, B.S., AGRICULTURAL COLLEGE, N. D.
Instructor in Zoology and Physiology, North Dakota
Agricultural College

The specimen described was given to me by Dr. Will G. Nichols of Fargo, N. D., in response to a request for human material to be used for class work in histology. The tube was serially sectioned, and only on examination of the finished slides was the double nature of the lumen revealed.

The patient from whom this tube was taken was operated on for a dislocated and adherent ovary that had caused severe pain at intervals for several years. A year and a half before the present operation her appendix had been removed by another physician as being the cause of the trouble, but the removal afforded no relief. Dr. Nichols operated to break up the adhesions around the ovary, and it was found that the ovary was large and inflamed, as was also the tube on

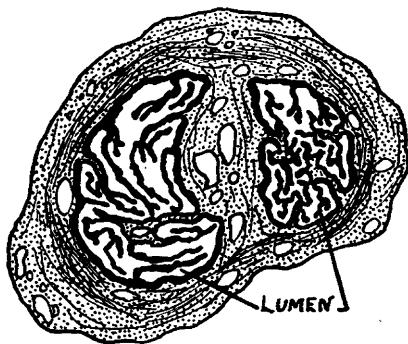


Fig. 1.—Section of fallopian tube midway between uterus and ovary.

that side. The tube had a decidedly tuberculous appearance when examined microscopically, so that both tube and ovary were extirpated, and immediately preserved in liquor formaldehydi. Later tests showed that the tube was not tuberculous.

Serial sections show a very interesting double nature of the lumen. At the proximal or uterine end, the tube seems to be normal; but a swelling starts about half way to the fimbriae, and for the rest of its length it is about twice the normal size. Sections in this enlarged portion show a complete double lumen, each one about the same size (Fig. 1). Toward the uterine end the lumen is single, and gradually changes into two by the formation of a partition as the ovary is approached. This condition persists for a short time, and then one of the

lumina gradually becomes smaller, and as it does so draws away from the other or main opening, and ends in one of the fimbriae some distance away from the main opening of the fallopian tube (Fig. 2).

The explanation of this double character is somewhat difficult. In the middle part of the tube it may be explained by the adhesion of the two sides of the tube from continued traumatism during several years; but this is not quite so clear in the distal portion, where the two openings are rather widely separated. It is quite probable, however, that the continued traumatism due to displacement down behind the uterus for a number of years had caused the union of the two sides of the lumen, and then further pressure caused the

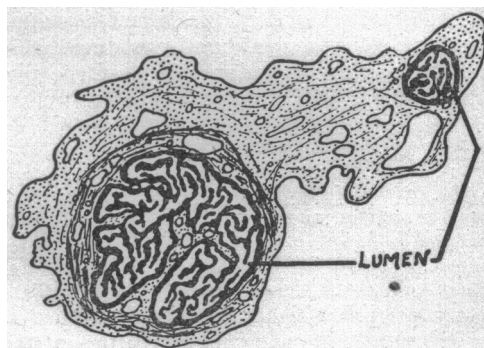


Fig. 2.—Section of fallopian tube near ovary, showing main lumen and smaller one somewhat apart from the main duct.

gradual increase in distance between the two lumina, thus causing them to open at rather widely separated points at the end of the fallopian tube.

ABORTION DUE TO SUPERFETATION

A. L. GUSTETTER, M.D., NOGALES, ARIZ.

Acting Assistant Surgeon, United States Public Health Service

There would be no way of controlling or of preventing abortion in the event of the implantation of a second fetus in a uterus already occupied by one in a process of development, even if the condition were known to exist. The case herewith reported is of great interest, nevertheless, as demonstrating that abortion or miscarriage may be produced by superfetation. It might even be a frequent, though often overlooked, cause.

Mrs. M. G., aged 22, of previous healthy condition, menstruated regularly and normally prior to marriage. The first child, born May 7, 1916, and the second child, born April 10, 1917, were delivered normally. Following the birth of the second child, menstruation began during the latter part of May, continued for fifteen days, and was irregular in quantity. During the latter part of July the patient began to menstruate again, and complained of a severe pain over and on both sides of the uterus. The pain was very severe, and lasted fifteen or twenty minutes. She menstruated all that night quite profusely, but menstruation ceased the following day. She menstruated almost continuously thereafter, never stopping for a period of more than twenty-four hours at a time, and the menstruation was rather erratic, sometimes profuse and then again often slight in amount. During all this period, she complained of extreme tenderness on external palpation of the uterus. The blood discharged was fresh and bright red, no clots coming from the uterus.

Sunday, September 16, the patient complained of a peculiar sensation in the region of the lower abdomen which she described as "being similar to the fluttering of a chicken whose head has just been cut off." This lasted only a short time, and no further sensations were felt. This was followed by a slight chill, and the blood discharged now became dark brown, and began to have a slightly abnormal odor.

Tuesday, September 18, as the condition of the patient was becoming gradually worse from the continued loss of blood, Dr. F. M. Sanger of Oklahoma City, who is stationed here as Captain in the Medical Reserve Corps, was called in

* From the Zoological Laboratory of the North Dakota Agricultural College, Proceedings No. 2.

consultation. He concurred in the opinion that, owing to her extremely weakened condition and the fact that all ordinary therapeutic remedies and rest in bed had been applied during the past month, without improvement in the condition of the patient, it was necessary to assist Nature in more rapidly emptying the uterus of its contents. The uterus was packed, and the previous slight labor pains that she had been suffering for the past two days were greatly augmented.

In the afternoon of September 21, the patient delivered a fetus of about four months' development and in appearance indicating that death had taken place at about the time she mentioned having felt the peculiar sensation, the preceding Sunday. The placenta was expelled along with the larger fetus, showing that it had been entirely detached. I introduced the speculum to make a thorough examination after the contents of the uterus had been expelled, and in the mouth of the cervix discovered some white tissue protruding, which I extracted. This proved on examination to be a fetus of about fifty days' development, corresponding closely to the time when menstruation began in the latter part of July.

My theory for the possibility of the second fetus' being the cause of the continued menstruation and abortion is that this fetus developed near the margin of the placenta of the older fetus; in its development it gradually detached more and more of the original placenta from the uterine wall, causing the almost continued bleeding from the uterus; and the profuse hemorrhages came on as the larger vessels were involved. I desire also to call attention to the extreme tenderness and sensitiveness on external palpation of the uterus. This may be a diagnostic symptom in threatened abortion due to superfetation, and is probably explained by the traumatism produced by the gradual detachment of the placenta from the uterine wall.

Had the second fetus been discharged later on, it would probably have been embedded in a blood clot and thrown away without its presence having been discovered. I have no hesitancy in stating that I believe the continued hemorrhage and abortion in this particular case were due entirely to the implantation of the second fetus too close to the site of the original fetus.

Dr. F. M. Sanger, who rendered valuable assistance in the case, having been present with me at the time of the delivery of both the embryo and the fetus, suggested that perhaps many cases of abortion occurring in a similar manner with continued menstruation for some period before the expulsion of the fetus may have been caused by superfetation, the second embryo being undiscovered.

The patient made an uneventful recovery, and her general improvement was very rapid.

ARTIFICIAL RESPIRATOR

FRANK C. DUDLEY, M.D., BROOKLYN

The apparatus consists essentially of an inhaler with inflated mouthpiece, to which a heavy rubber bulb is attached. Air and oxygen are forced into the lungs when the bulb is compressed, and withdrawn by suction when the bulb is released.

This apparatus is very simple; there are no valves or complications to get out of order. The valve in the instrument is simply a small hole. When air or oxygen is being forced into the lungs, the finger is placed over the hole and held there until the air is drawn out; then the finger is removed, and the bulb compressed and released, drawing into the bulb a fresh supply of air or oxygen. Then the finger is replaced over the hole, and the air is forced into the lungs and then withdrawn by the suction of the bulb.

The bulb contains the proper amount of air for an adult; but smaller amounts may be given by compressing the bulb less in case of children or in asphyxia neonatorum. The sense of touch shows how much air can be forced safely into the lungs. By connecting the oxygen tube to a generator or tank of oxygen, any desired mixture of air and oxygen may be given to the asphyxiated patient. One person can operate the respirator and hold it tightly to the patient's face at the same time.

The inhaler part when used alone makes a very satisfactory one for ether and chloroform. Gauze is placed in the chamber above the wire screen, and the anesthetic applied to the gauze by the drop method. The opening is large, permitting plenty of air for the open method; and oxygen may be administered simultaneously when desired.

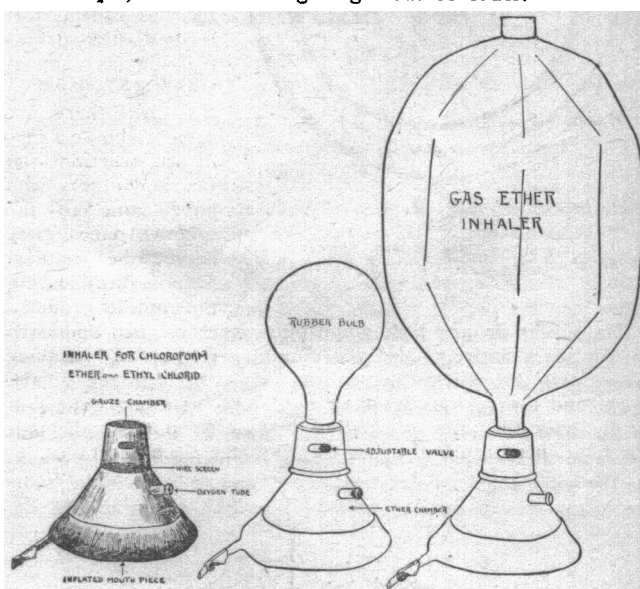
By attaching a gas bag to the inhaler instead of the heavy rubber bulb, one has a gas-ether apparatus that is simple and effective. When the patient is anesthetized with nitrous oxid gas, a twist of the connection opens the valve to any desired size, and ether is dropped on the gauze through the opening. When desired, the gas bag is removed and ether continued by the drop method as usual. Oxygen may be administered with nitrous oxid either through the gas bag or through the oxygen tube in the inhaler.

By using the gas bag alone, one has an ideal closed method inhaler for ethyl chlorid or ether.

The advantages of this new apparatus are:

1. It is an inexpensive apparatus that will perform artificial respiration successfully. The price will not be over \$25 for the complete outfit.

2. It is light and can be carried in the physician's bag. As it is simple, there is nothing to get out of order.



Artificial respirator.

3. The sense of touch, better than mechanical adjustments, shows how much air and oxygen should be forced into the lungs.

4. The one apparatus serves for four instruments: (a) an artificial respirator; (b) an inhaler for ether and chloroform by the open method; (c) an inhaler for ether and ethyl chlorid by the closed or rebreathing method, and (d) a simple gas-ether apparatus that works.

This new instrument, on account of its lightness and combination of uses, should be especially valuable to the general practitioner and the obstetrician. It will prove a great aid in all cases of collapse after anesthesia, poisoning from gases in mines and on the battlefield, shock by electricity, drowning, and asphyxia from any cause.

Tuberculosis and Pregnancy.—The tuberculous married woman should be instructed concerning the danger of pregnancy, as it is an important factor in lighting up a quiescent tuberculosis. Pregnancy should be avoided until the pulmonary lesion has been arrested for several years. When conception has taken place, pregnancy should be terminated before the fifth month in all active cases of early and moderately advanced pulmonary tuberculosis, and in all cases of advanced tuberculosis, when the process is quiescent. It is for the best interest of both mother and child to prohibit the tuberculous mother from nursing her child.—S. A. Douglass and J. E. J. Harris, *Am. Rev. Tuberc.*, 1917, 1, No. 8.