

the abdominal wall. It is not constant that an inflammatory process takes place between the sac and the abdominal wall. But there is almost universally increase of prominence at some part of the abdomen. If air get into the sac from the abdomen, and I suspect sometimes without, decomposition proceeds rapidly, putrefactive gases distend the tumor, suppuration proceeds; and we then get resonance over the projecting part of the tumor, and fluctuation at other parts. Probably pus may be discharged by the bowel. With these local symptoms there will be hectic marked by rigors, sweats, diarrhoea, perhaps vomiting, a quick weak pulse. When this concurrence of symptoms is found, there can be no doubt as to the expediency of trying to relieve the patient. Extraction of the foetus and giving issue to the offensive contents of the sac may save her life. There are many instances where this course has been successfully pursued.

Mr. Hutchinson<sup>1</sup> is of opinion that what may be called the *primary operation by abdominal section* should not be performed, but that the *secondary abdominal section, i. e.*, at a time remote from the death of the foetus, when inflammation of the sac has occurred, is strongly indicated. Campbell, who collected eighty-five cases of extra-uterine gestation, showed that sixty-two recovered, whilst twenty-three died as a direct consequence of the abnormal pregnancy. Of the sixty-two in which recovery took place, in twenty-one the foetus remained quiescent through life for periods varying from four to fifty-six years, and in the rest its removal had been effected by ulceration. In a not inconsiderable number of the latter, the natural processes had been materially assisted by the surgeon, as by extracting bones, enlarging the opening, and so forth.

At the same time it does not seem desirable absolutely to condemn the primary operation; still less the operation at a time remote from the death of the foetus, even when no inflammatory or eliminative effort has presented itself. I do not think the risk of danger from subsequent uterine pregnancy is sufficiently weighed. At all events the subject of an extra-uterine gestation should be emphatically cautioned not to incur the risk of another pregnancy. In the event of this complication occurring, the case should be treated on the same principles as those laid down when discussing the treatment of ovarian tumors complicated with pregnancy.

Very eminent men have advised the primary operation. Thus Levret, Gardien, Velpeau, and Kiwisch urged it, and that at a time when abdominal surgery was imperfectly understood, when its dangers were really greater than now, and when they were thought to be even greater still. In recent times, Koeberlé, whose authority is especially to be valued on account of his great experience and success in ovariectomy and in laparotomy for extra-uterine gestation, pronounces himself decidedly in favor of the proceeding. Keller, after carefully weighing the arguments, for and against, decides in favor. He calls to mind that dangerous accidents may ensue quickly upon the child's death; that the cyst has on several occasions burst during the early days of false labor; and that hemorrhage and peritonitis may quickly prove fatal.

On the other hand, it must, I think, be admitted that the risks attend-

<sup>1</sup> Medical Times and Gazette, 1860.

ing the primary operation are greater than those attending the secondary operation. Whilst the child is alive, the cyst and placenta are in the full vigor of vascular communication; the cyst has probably no contractile property; the placenta is likely to be widely diffused, its attachments projecting amongst intestines, perhaps deep in the pelvis; or it may, as occurred in a case operated upon by Koeberlé, grow to the anterior wall of the abdomen, so that it must necessarily be cut through by the incision made to open the cyst. The cyst itself has probably not formed extensive adhesions to the abdominal wall, so that incision will be likely to open the peritoneum. There will thus be greater danger of secondary hemorrhage, of suppuration, of septicæmia, and of peritonitis. The question would be fairly stated as follows: Are the dangers of the primary operation greater than those of the secondary operation, plus the dangers immediately and soon following the neglect to perform the primary operation? It is clear that the catastrophes, as rupture of the cyst, hemorrhage, and peritonitis attending false labor, must be taken into account, and added to the dangers of the secondary operation. It is also right to throw into the same scale at least a certain proportion of the more remote dangers, as peritonitis, exhaustion from suppression, subsequent uterine pregnancy, and so on, to which the woman is exposed.

The latest writer on this subject, Dr. J. S. Parry, after a careful analysis of the fact, condemns the primary operation. He shows that of 62 cases of abdominal section tabulated, 20 were performed at or before the end of the ninth month. Of these 14 died. Of 188 cases left to nature 99 died, or 17.35 per cent. less than if they had been subjected to laparotomy with the hope of saving the child. "In other words, nearly one out of every four mothers operated upon with the hope of saving her extra-uterine infant, dies, not from the terrible accident of which she is the victim, but from the knife of the surgeon, who is deluded into the idea that art is safer than nature." Add to this that the saving of the child, which must according to the imperative law be held a secondary duty to that of saving the mother, is at best problematical. Twelve children out of the 20 only survived, and some of these only for a brief period. Thus a main argument for the primary operation breaks down. The question may be summed up as follows: Absolute, universal truth does not rest with either side. Statistical evidence must not be accepted with unlimited confidence. Cases may arise in which the primary operation may be justified; others in which it may be wiser to temporize, to perform the secondary operation, or no operation at all. The second course will certainly apply to the majority of cases.

*The operation of laparotomy to remove an extra-uterine foetus.*—The general preparations are the same as for the Cæsarian section; but there are important modifications in the execution.

The seat of the incision will generally be in the linea alba. It is, however, determined somewhat by the point of greatest prominence of the tumor, or by the position of the foetus. A smaller incision is commonly necessary than for the Cæsarian section. The central point of pain and prominence is the most likely to be the centre of the adhesions formed between the sac and the abdominal wall. A longitudinal incision not exceeding two inches in length in the first instance, is then carried



carefully through the abdominal wall, and a small opening is made in the sac. The finger is passed through this to feel for the limit of the adhesion, and guide the further extent and direction of the incision. This should be just large enough to permit the extraction of the foetus; and it is better, if there be any difficulty in extracting the foetus whole, to bring it away piecemeal, than to extend the opening much, lest we open the peritoneal cavity. If the cyst have not contracted adhesions with the abdominal wall, care will be necessary to prevent the protrusion of intestines and the escape of blood and other offending matters into the peritoneal cavity. To obviate this, the cyst, at the point where it opens into the peritoneum, should be stitched to the edges of the abdominal wound. Sometimes there is no proper cyst. The foetus and placenta occupy a cavity made by displacement of the intestines. The extraction of the foetus requires some obstetric skill to do it without unnecessarily increasing the opening or disturbing the sac. I have seen a surgeon pull at an arm as soon as the foetus came in sight, and thus, not reflecting that he was really making a transverse presentation, fail to extract the foetus through a liberal opening. It was delivered with perfect ease by Dr. Ramsbotham, who seized the feet, performing the equivalent of version.

The same consummate obstetricist, who had had considerable experience in cases of extra-uterine gestation, insisted upon the rule now generally adopted, of *not removing the placenta*, if it in any degree adhere. It is advisable to tie the funis, and let its end hang out of the wound. If omentum interfere, the obtruding bit may be cut off and the vessels tied, or the bit may be removed by cautery-clamp. Refrain from all curiosity as to the attachment of the placenta and other matters, if it cannot be indulged without disturbing the parts or extending the opening. If the placenta do not come away on gentle traction, leave it. In some cases it will already have melted down, and its remains will come away with the pus and other discharges. In other cases it softens and breaks down within a few days after the operation, and will come away in lumps or small *débris*. In other cases its attachments have yielded in a few days as the sac shrank, and it has come away entire. Marked improvement commonly follows the discharge of the placenta.

Where attempts have been made to remove the placenta or the cyst, the result has generally been disastrous, and that, whether the case were primary or secondary, whether the child were alive or dead. Mr. Clay, however, tells me that in a case in which he left the placenta, fatal hemorrhage ensued.

The wound may be closed with two or three sutures, leaving a sufficient opening for the funis and ligatures, if any vessels had been tied. If discharge continues, the sac may be lightly washed out now and then with a solution of permanganate of potash or carbolic acid. In such a case, when the sac adheres throughout the extent of the opening, the operation is, as Mr. Hutchinson remarks, scarcely more serious than opening an abscess.

In the case of a *uterine gestation complicating an extra-uterine gestation*, at the time of labor, attempt first should be made to push aside the extra-uterine sac so as to permit the uterine child to pass through the pelvis. Should this manœuvre not be possible, we should not hesitate to

remove the extra-uterine foetus by laparotomy, and thus to allow delivery of the uterine foetus *per vias naturales*.

*Primary opening of the sac by caustics.*—A case is related<sup>1</sup> of a woman who had carried an extra-uterine foetus ten months. Blachet opened into the sac by five applications of caustic. No blood was lost; and the foetus was extracted. The patient nearly lost her life from the bleeding which ensued on removing the placenta.

INTERSTITIAL OR INTRAMURAL GESTATION, GESTATION IN ONE HORN OF A TWO-HORNED UTERUS, AND GESTATION IN THE HORN OF A SINGLE-HORNED UTERUS.

It is convenient to discuss these conditions together. They approach each other so nearly in locality and other characters, that they hardly admit of distinct clinical demonstration. The seat of these varieties, lying between those of tubal gestation and uterine gestation, must also occasionally give rise to difficulty in discriminating them from the latter. I entertain little doubt that some cases of presumed "missed uterine labor," a part of whose history is the subsequent discharge of foetal bones by the os uteri and vagina, were cases of interstitial gestation, or of gestation in one horn of a two-horned uterus. Ulrich<sup>2</sup> relates a case, which may admit of a double interpretation. The foetus died at five months; discharge of placenta in pieces took place by vagina four months later, and then bones came by the same passage. A year after this, all escape of bones by vagina having ceased, bones passed *per anum*. The patient died exhausted. The uterus was found adherent to intestine; some bones were encapsuled in the wall of the intestine; a direct communication existed between uterus and intestine. The cavity of the uterus was empty. It was concluded that the pregnancy was uterine, and that the discharge of bones into the intestine was the result of a fistulous opening established from the uterus. The most unequivocal case of a dead foetus long retained in utero is one that came under my care. A lady was sent to me from India with a presumed uterine tumor. At the term of a reputed ordinary pregnancy, labor set in and passed off without result. A year after this, assisted by Dr. Fancourt Barnes, I removed a foetus piecemeal and placenta from the cavity of the uterus, by hand working in the cavity. The uterus slowly underwent involution, and the patient recovered.

Ramsbotham prefers the term "parietal" to "interstitial." It is remarkable, that when gestation takes place in the uterine portion of the tube, the dilatation, as a rule, affects solely the space between the inner and outer openings. The reason, Kiwisch suggests, may lie in the circular disposition of the muscular fibres around these openings. The sac enlarges most freely in an outward direction, and forms a prominence with a broad basis on the side of the body of the uterus. It is surrounded by the uterine substance, which at first undergoes an eccentric hypertrophy, and later, as the sac grows rapidly, is stretched, thinned at its

<sup>1</sup> Gazette des Hôpitaux, 1856.

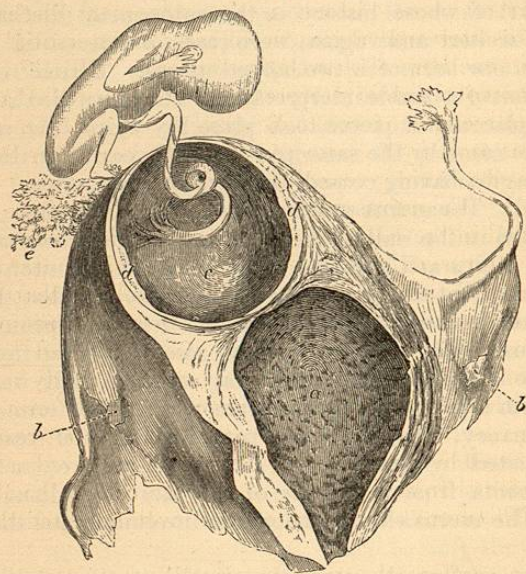
<sup>2</sup> Monatsschrift für Geburtskunde, 1857.



apex, and then bursts. Interstitial gestation may, says Rokitansky, in rare instances like tubal gestation, merge into abdominal gestation. As in gestation in a rudimentary horn, it is often impossible to trace an opening from the tube into the sac. This becomes obliterated on either side as the sac is developed. But a peculiar modification at times occurs. The uterine mouth of the pregnant portion of tube may be dilated, so that the sac expands into the uterine cavity, constituting *tubo-uterine gestation*; or the tubal mouth dilating, the sac enlarges in the direction of the tube, constituting *interstitial tubal gestation*. The first variety may end in a normal labor, whilst the latter is likely to burst into the abdominal cavity.

The illustration of tubo-uterine or interstitial gestation, Fig. 84, is taken from Dr. Poppel.<sup>1</sup> A pluripara died suddenly under symptoms of abdominal collapse and internal bleeding. She had been unaware of her pregnancy. The uterus measured from fundus to os 18 centim., at its greatest width 13 centim. The right side of the fundus was more protuberant than the left, and showed at its hinder part two rents, through

FIG. 84.



Tubo uterine Gestation—(After Poppel). *a*, Cavity of uterus clothed with decidua. *b*, Broad ligament. *c*, Tubo-uterine sac which contained fetus. *d, d*, Thicker part of walls of cyst. *e*, Placenta. (One-third size.)

which were seen portions of placenta and a foetus. The uterus opened longitudinally along its fore aspect, showing two cavities. The lower one (*a* in the Fig.) was clothed with a thick decidua. This was the proper uterine cavity. The upper cavity (*c*) was divided from the lower by a septum of muscular structure, all but a small opening of communication. It contained a fresh foetus, which corresponded to the fifth month of

<sup>1</sup> Monatschrift für Geburtskunde, 1868.

gestation. At the point of rupture the wall of the sac was very attenuated, but at *d d* it was  $1\frac{1}{2}$  centim. thick.

Poppel discusses the difficulty of distinguishing the cases from gestation in a rudimentary horn. Baart de la Faille, who has written a careful memoir on the subject,<sup>1</sup> insists also on this difficulty. He says the characteristic distinction lies in this, that in the case of gestation in the rudimentary horn there is a muscular band of union between the uterus proper and the fruit-sac (compare Fig. 84 with Luschka's Fig. 83, p. 306), whilst in interstitial gestation there exists almost always a membranous septum with a larger or smaller communication, which is the original opening of the tube.

*Course and Termination of Interstitial Gestation.*—It is probably even more dangerous than the tubal form. Hecker collected twenty-six cases. The duration of gestation was generally less than three months. All terminated fatally. The ovum arrested in the uterine portion of the tube is developed there, forming its sac in the proper wall of the uterus; hence it is called *graviditas in uteri substantiâ*. It is just conceivable that an ovum so placed might grow, inducing a corresponding growth of the muscular wall which surrounds it, mutual adaptation proceeding, as in the case of an intramural fibroid tumor. A fibroid rarely bursts its investment as an ovum does, although Larcher relates a case in which the uterus ruptured with a fibroid tumor. This greater bursting force of the ovum is due to its quicker rate of growth, its greater vascularity, and its liability to sudden great accumulations of blood.

Cruveilhier, with that sagacity which enabled him to foreshadow if not to forestall so many discoveries made by more recent writers, carefully pointed out the distinction between these cases of bilocular uterus (*utérus cloisonné*) and the bifid uterus, and especially draws attention to pregnancy in these uteri in comparison with cases of extra-uterine pregnancy.

*Gestation may take place in one half of an equally developed two-horned uterus.* In this case things usually go on in the ordinary way, and labor is accomplished as in a normal uterus. Great perplexity may, however, arise during pregnancy and labor in determining the exact seat of the gestation. If the vagina is double, the exploring finger may pass up the empty side, and fail to touch the ovum. The same accident may happen when the septum dividing the two uteri extends to the roof of the vagina. Hemorrhagic or catarrhal discharges may take place from the empty uterus, which may be erroneously referred to the pregnant one. Cruveilhier figures (Plate v., livraison xiii.), in his immortal work, a double uterus removed from a woman who died of puerperal fever. A septum divides the body from fundus to cervix into two cavities. Gestation had been carried on to term in one side. The empty side had grown to keep pace with the pregnant side.

*Gestation in the Rudimentary Horn of a One-horned Uterus.*—But, in not a few cases the horns of the uterus are unequally developed. One remains rudimentary. Pregnancy may take place in either. When it takes place in the larger horn, which represents the uterus proper, all may proceed as in the ordinary uterus. But it will be widely different

<sup>1</sup> Verhandeling over Graviditas tubo-uterina. Groningen, 1867.



if the rudimentary horn becomes the seat of gestation. The structure of this part is not adapted to accommodate the growing ovum.

Gestation may proceed to term in a one-horned uterus, as in the normal uterus. A most interesting case of this kind is recorded in the *Philosophical Transactions*, 1818. A woman had ten ordinary labors, and died after labor of twins. The preparation is figured by Granville. The right side of the uterus only was developed; the left side was wanting; the left ovary was very feebly developed; the left kidney was absent. Rokitansky relates two cases, and Chiari one of a similar kind. It is not improbable, however, that in the greater number of instances of development of one-half of the uterus only, there is sterility, whilst in others, pregnancy is ended by abortion.

Kussmaul has subjected this form of gestation to minute critical and anatomical analysis, and proves that it has often been mistaken for tubal gestation. He describes in detail twelve cases of this kind. The first is invested with unusual interest. It is taken from Dionis (1681). The subject was a lady attached to the court of Maria Theresa, who ordered Dionis to perform the autopsy, and made him show her the preparation. The lady died under signs of internal rupture when presumed to be five months pregnant. Kussmaul reproduces the figure given by Dionis. It represents very clearly a right-sided uterus unimpregnated, and a rudimentary left horn containing the fruit-sac, which had burst.

Other cases which Kussmaul's analysis restores to their proper significance are taken from Canestrini, Pfeffinger and Fritze, Tiedemann and Czihak, Joerg and Güntz, Drejer, Ingleby, Heyfelder, Rokitansky, Scanzoni, Behse, Ramsbotham, and one from the *Buffalo Medical Journal*, 1846. That of Luschka is the one I select for illustration (see Fig. 83, p. 306). Another preparation is preserved in the Heidelberg Museum, to which it was sent by Naegele. A woman, aged thirty-six, had borne four healthy children after easy labors. Pregnant the fifth time she suffered none of the symptoms she had experienced in former pregnancies, as nausea, vertigo, and so on; when, at the end of the fourteenth week, she was taken suddenly ill with acute pains in the lower abdomen, collapse, vomiting, expulsive efforts, and died in seven hours and a half. The right side of the abdomen was more enlarged than the left. The autopsy revealed a large quantity of blood in the abdomen; in the midst of it was found the embryo in its envelopes, and liquor amnii. The right horn of the uterus was the one that was developed, forming a *uterus unicornis dexter*; its cavity was lined with decidua; a distinct vaginal-portion could hardly be said to exist. From the left side of this right uterus, and close above the cervix, sprang a flat thick muscular band running to the left into a pear-shaped fruit-sac as big as a goose's egg. From the under circumference of this horn sprang close together the left round ligament, and the left Fallopian tube just beneath the seat of rupture of the sac. The left tube was quite pervious to a bristle throughout its course to its point of entry into the left horn, where it opened funnel-wise. It was as long as the right tube. The right tube was also pervious. The muscular wall of the sac was almost one inch thick at its connection with the uterus, but became much thinner near the seat of rupture. The structure of the sac was that of a gravid uterus. Numer-

ous wide vessels ran through the muscular wall, increasing in number and size as they approached the inner surface. The placenta clothed the entire cavity. The cord was attached near the rupture. The band which joined the left horn with the right one was muscular. The foetus was well formed, female, about four ounces and three-quarters in weight, shrunken, and for the most part deprived of epidermis.

The thirteen cases collected by Kussmaul all terminated by rupture of the fruit-sac and death. The period of rupture varied from the fourth to the sixth month, the greater number bursting in the fifth month. One case, related by Rosenmüller,<sup>1</sup> burst at the end of five months. It thus appears that the rudimentary horn can carry on gestation somewhat longer than the Fallopian tube. The only instance of rupture so early as the tenth week that I know is Luschka's. It is remarkable that in several of these cases the subjects had borne children at term. It may be conjectured that the developed horn of the uterus was the seat of the successful gestations.

Kussmaul cites in detail a case described by Fritze (1779) in which gestation was carried on in the rudimentary horn of a uterus, which did not, as is usual, end by bursting of the fruit-sac. The embryo died in the fifth month, and dried up; the fruit-sac became confounded with the embryonic investments, and partly calcified. The contents underwent suppuration after thirty-one years, a result occasioned probably by the sharper projections of the bones produced by the progressive shrinking of the foetus.

It is remarked as a curious fact that, in most of these cases, the sac formed in the rudimentary horn is found shut off from communication with the tube on the one side, and with the uterus proper on the other. At the same time the corpus luteum is found on the same side as the gestation, the tube being pervious until it approaches the sac. The ovum, therefore, descended along its proper tube into the rudimentary horn. But how did the spermatozoa get to it? It has been conjectured that they travelled round by the opposite Fallopian tube through the intervening peritoneal space, and in at the abdominal end of the tube which admitted the ovum. I think it more likely that the spermatozoa do not pursue this vagrant circuitous route. At the time of impregnation I believe the passage from the developed uterus through the rudimentary horn is still open, permitting the meeting of the two elements in the usual way, and that the obliteration of the openings takes place during the development of the sac. There is confirmation of this view in the fact that in one case the passage was found pervious.

The accuracy of Kussmaul's interpretation of the specimens he has examined is, I think, beyond dispute. He proves that the fruit-sac in these cases is formed out of uterine structure; that the Fallopian tube has no share in it. One point only strikes me as being defectively described, that is, the constitution of the placenta, which is distinctly different in uterine and in tubal gestation. In the first, the decidual element is characteristic; whereas in the latter it is often scarcely to be distinguished. In future investigations this test should not escape attention.

<sup>1</sup> Monatschrift für Geburtskunde, 1862.



Virchow supplies another test.<sup>1</sup> A woman died under symptoms of rupture. The preparation was at first taken for one of tubal gestation, until closer analysis was made. He proposed as a criterion between tubal gestation and gestation in a rudimentary horn the point of insertion of the round ligament. In the normal uterus this lies at the place where the Fallopian tube opens into the uterus. Now, if an ovum becomes developed near this place, the round ligament will be pushed either inwards or outwards; and thus we may know whether we have to deal with a tubal or a uterine gestation. If the round ligament is inserted on the inner side, the new cavity must be regarded as the tube; if it lie on the outside, the cavity must be uterine or a rudimentary horn. Tried by this test, it would appear that two cases figured by Kussmaul, as gestation in a rudimentary horn, are tubal (Cases IV. and VIII.). But, in reality, the gestation may have begun on the inside of the insertion of the round ligament, and in course of development have proceeded beyond this point.

The investigations of Kussmaul have been extended by the minute and accurate researches of Professor Turner.<sup>2</sup> He has subjected to dissection two specimens submitted to him by Sir James Simpson. In both of these, one horn was in a rudimentary condition, but impregnated.

Dr. Aveling calls my attention to the following very interesting case of *hernial gestation*: In 1706, Gouey, of Rouen, saw a young lady for a tumor in the right groin. It grew rapidly, and without pain, and there was felt in it the pulsation of an artery. At the end of two months and a half the tumor was as large as a loaf of a pound weight. He laid it open, and found a hernial protrusion of peritoneum. Clear fluid escaped when this sac was opened. In another bag inside was a fœtus about six inches long, alive. This he removed, tying the cord. Drawing very gently upon the cord, the placenta came away. It was fastened to the circumference of the musculus obliquus externus. Gouey conjectures that the ovum impregnated grew to the round ligament, and came down through the ring in the canal of Nuck, and then grew in the hernial sac. Dr. Aveling supposes the gestation might have been uterine; and that it was an inguinal hernia of the gravid uterus. [From Sloan MSS., 4432, No. 45. "An extract from 5th part of a Book intituled 'La véritable Chirurgie établie sur l'expérience & la raison, par le Sieur Louis Leger de Gouey.' Printed at Roan, 1716, in 8vo., containing the account of a fœtus cut out of the groin, from the French by M.D."]

<sup>1</sup> Monatschrift für Geburtskunde, 1860.

<sup>2</sup> On Malformations of the Organs of Generation. Edinburgh, 1866.

## CHAPTER XIV.

THE FALLOPIAN TUBES: ABSENCE OF; SEPARATION OF; INFLAMMATION (SALPINGIS); CATARRH; HEMORRHAGE; HÆMATOMA; OCCLUSION, CYSTIC DILATATIONS; DROPSY; FIBROID TUMORS; TUBERCLE; CANCER—BROAD LIGAMENTS: CYST; TERMINAL TUBAL; PAROVARIAN; FIBROID TUMORS; PHLEBOLITHES.

THE pathology of the Fallopian tubes and of the broad ligaments has the most intimate clinical connections with the history of ovarian disease. It will therefore be most useful to take it in this place. That part of it which concerns tubal gestation has been described in the preceding chapter.

The pathology of the Fallopian tubes deserves more attention than it has commonly received. The natural issue of some of the diseases of this structure is in sudden death; and this catastrophe may in some cases be averted by timely treatment.

*Absence of*: The tube of one side may be wanting if the corresponding side of the uterus is wanting. In many cases the tube is represented by an impervious string. In some cases there is only seen a small rounded stump attached to the horn of the uterus. This last condition, says Rokitansky, is mostly the result of a twisting and *separation* of the tube.

As conditions of *excessive development*, we sometimes see supernumerary fimbriæ, and accessory openings into the abdominal cavity. Appended to the fimbriated extremity is often found a small clear pyriform vesicle hanging by a peritoneal stalk, the remains of a pinched-off portion of a Wolffian duct.

The tube may undergo *elongation* to a greater or less extent through dragging of the uterus, as in prolapsus; or upwards, as when enlarged by fibroid tumors. But the most marked elongation is produced by the dragging of an ovarian tumor. In this case the whole tube becomes hypertrophied, its canal is widened, especially towards its fimbriated extremity, which sometimes stretches out, grasping a large surface of the tumor. Sometimes the stretching of the tube produces a marked thinning at one part, which undergoes atrophy and even breach of continuity.

The tube is liable to *inflammation—salpingitis*—and suppuration, independently of childbed. This may extend from the uterine cavity; and this, according to Scanzoni, is its common origin. But it may arise in, and be confined to, the tube. Aran relates a case of suppuration of both ovaries and tubes, supervening on menstrual disturbance, without metritis. When suppuration occurs, the collection of pus produces similar effects upon the form of the tube as other fluids. It does not escape readily by either end, but, being retained and accumulating, forms a cylindrical, somewhat tortuous, dilatation of the middle part of the tube. Then