

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.

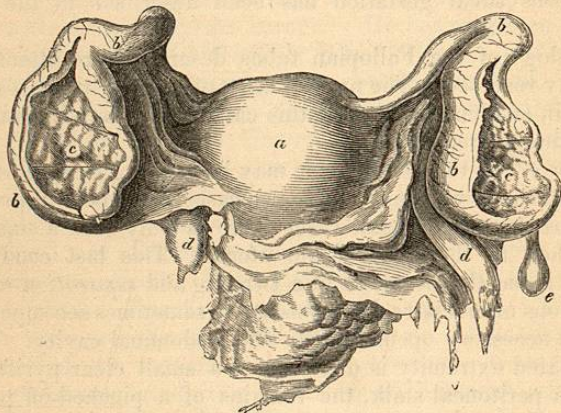
The tube is liable to *inflammation—salpingitis*—and suppuration, independently of childbed. This may extend from the uterine cavity; and this, according to Scanzoni, is its common origin. But it may arise in, and be confined to, the tube. Aran relates a case of suppuration of both ovaries and tubes, 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

comes the special danger attending distension. The tube may burst, or be perforated, and offending matter, in sufficient quantity to irritate the peritoneum, suddenly escapes into the abdominal cavity. Peritonitis may result from salpingitis in three ways: 1, by extension of inflammation through the fimbriated end; 2, through perforation of the tube; 3, through pouring of pus through the open end.

The physical signs will be the same as those of dropsy of the tube. There will be similar fluctuating, bent, cylindrical rolls felt behind Poupert's ligament, and in the vaginal roof. The diagnosis is very important, because this condition must fall under the same rule of treatment by puncture as other affections of the tube, namely, tubal gestation and dropsy.

Fig. 85, after Hooper, is a good illustration of inflammation of both tubes. It shows the immediate effects of acute inflammation of the mu-

FIG. 85.



Inflammation of the Fallopian Tubes (after Hooper). (Half size.)

a. Uterus.      b b. Tubes.      c c. Saccular dilatations laid open.  
d d. Round ligaments.      e. A terminal vesicle.

cous membrane. The peritoneal investment is very vascular. The substance of the tube is much thickened and softened, and dilated into a sac, the mucous surface is covered with a flocculent albuminous layer. A quantity of fluid albumen escaped when the sac was opened. The fimbriae are destroyed; and the openings into the cavity of the abdomen are obliterated.

*Tubal catarrh* is probably most commonly the result of extension of inflammatory action from the uterine cavity. This may be acute or chronic. The acute form may be due to blennorrhœa. The chronic form may result from the acute, or it may, *ab origine*, have been of a subacute kind. Catarrhal inflammation of the uterus and tubes entails, for one of its effects, a degree of laxity of tissue and dilatation of cavity, as the mucus formed in the tube will naturally tend to discharge itself into the uterine cavity, and commonly this action is favored by the dila-

tation of the *ostium uterinum*. If escape by the *ostium abdominale* were common, catarrh would be a very dangerous affection. As it is, accumulations in the tube rarely take this route. It is only when the fluids secreted are large in quantity, formed rapidly, as in blennorrhœa or some puerperal inflammations, that the risk of retrograde overflow is serious. But when the openings of the tubes are obstructed, the fluids accumulate and distend them, and, by-and-by, perforation or bursting takes place. This closure is easily produced. At the outer end, catarrhal inflammation often leads to adhesions of the fimbriae; and, at the inner end, the swelling of the tube contorting it, forms angular spurs or valve-like bendings, which shut off the communication with the uterus.

Assuming that the lining membrane of the tubes is liable to inflammation which may lead to suppuration, it must be remembered, that in the tubes, as well as in the uterus and vagina, fluids may accumulate which the naked eye could not distinguish from pus, and which, on microscopical analysis, is resolved into epithelium-scales floating in plasma. This was the case in a young woman who died of chorea in St. George's Hospital. The vesicles of the ovaries contained coagula. The Fallopian tubes were full of milky fluid, like pus, which proved to consist of columnar epithelium.<sup>1</sup> This fact must be borne in mind in estimating the significance of puriform matter in the tubes.

Salpingitis being so frequently a part of an inflammatory process, the chief seat of which is the cavity of the uterus, the treatment merges in that which is indicated for the principal affection. If it lead to the escape of irritating matters or blood into the peritoneum by rupture, perforation or overflow, the case must be treated on the principles laid down when discussing the subjects of Menstrual Retention and Tubal Gestation.

The *dilatation* or enlargement of the calibre of the tubes is a subject of great importance in its relation to the practice of injecting fluids into the uterus. It so happens that some of the morbid processes which give indications for injecting styptic or astringent fluids into the uterus, also entail undue patency of the uterine mouths of the tubes and of the tubes themselves. The mechanism by which this patency is produced, as well as the morbid processes which bring this mechanism into action, are therefore of special interest. We may take as a type a case of dysmenorrhœa from obstruction at some point of the uterine canal, as at the os internum by flexion. In such a case there is, as I have explained under "Atresia," a degree of retention of menstrual fluid, aggravated by formation of clots. The retained matters irritate the uterus, excite reflex action, and thus cause uterine colics or expulsive pains; that is, the body of the uterus contracts, trying to expel its contents. There is obstruction at the natural outlet; hence, following the general dilatation of the uterine cavity, there is retrograde dilatation of the uterine mouths of the tubes. All this is seen in a marked degree in cases of complete retention; but I believe it is rarely absent in a minor degree in cases of partial retention. The pathological and therapeutical consequences of this state are: secretions of blood, mucus, or pus formed in the uterus may be driven backwards by the contraction of the uterus along the

<sup>1</sup> See Catalogue, St. George's Museum, XIV., No. 5.

tubes, distending the tubes, exciting inflammation in them, and perhaps leading to discharge into the peritoneal cavity. In a similar manner fluids injected into the uterus excite contraction, and this contraction drives the fluid along the tubes, if its exit be impeded at the neck, either by flexion, or by the canal being filled too closely by the injecting-tube.

This accident may be avoided by the use of remedies in a solid form or as ointments, or of fluids carried on a swab.

The tubes may be distended by accumulations of blood. One cause of this is *menorrhagia*. Usually, the uterine opening gives it passage; but sometimes, if this opening be obstructed, as by a clot, the blood continuing to be poured out by the tubal mucous membrane may overflow by the abdominal end, and give rise to retro-uterine hæmatocele. The like event may occur in the *hemorrhage of abortion*. Another form of blood-accumulation, and one especially dangerous, is that which results from *atresia, or closure of the uterus, vagina, or vulva*, leading to retention of the menstrual fluid. The Fallopian tubes in these cases commonly undergo extreme dilatation, and are liable to bursting or perforation. This subject is discussed more fully under "Atresia."

In other cases the obstruction takes place at the ostium uterinum. When this occurs it does not follow that the tubes will give up their part in the function of menstruation; blood will be poured out into the tubes, and, if it do not escape by the ostium abdominale, must accumulate as *tubal retention*. When we look at the contorted shape of the tube, it is not difficult to conceive how easily, under distension of one part of the tube, further contortion, producing angular flexion, may occur, so as to shut in the contents. The closure at the extremities of the tubes, especially of the abdominal extremity, is further very likely to be effected by inflammation of the tube and peritoneal investment. This inflammation may be caused by a minute perforation under an ulcerative process, permitting a little of the retained fluid to escape into the peritoneum; or it is, I believe—although there is no distinct clinical proof of this—more likely to happen through transudation, or oozing through the walls of the tube under the combined pressure of accumulation and the excited contractile efforts of the walls of the tube. The contact of the unhealthy moisture thus bedewing the peritoneum would be pretty sure to set up inflammation in this susceptible membrane.

But retention of blood or mucus in dilatations of the tubes may terminate in another way. Peritonitis may or may not supervene; after a time there is no further increment of blood or mucus; the watery part of that already in the tube may be absorbed, and the tube not recovering its pristine form, may assume the condition of cysts.

There is a good illustration of cystiform dilatation of both tubes from tubal menstrual retention in the *Obstetrical Transactions*, vol. viii., described by Dr. Meadows. The subject had had fifteen pregnancies, but only one had gone on to term; menstruation had generally been profuse, and latterly became clotty and painful. She died of extensive peritoneal inflammation, involving the uterus and tubes. The tubes presented cystiform dilatations; no communication was found between these dilatations and the fimbriated extremities, and on the left side the ostium uterinum was quite closed. The dilatations were "all filled with a dark, thick,

grumous fluid of a prune-juice color." This resembles the retained menstrual blood in the uterus, and was no doubt of like origin.

Wagner<sup>1</sup> describes a case of hæmatoma of the Fallopian tube. There was also an old blood-mass in the pelvis, found after death. The tube was dilated only at the seat of the hæmatoma. There was nothing abnormal in the ovary or uterus.

It seems probable that the closure of the tube at the uterine end or at the fimbriæ is one of the dangers of gonorrhœa, or of those attacks of metritis or peritonitis to which prostitutes are so subject. These attacks, which give rise to the symptoms known as *colica scortorum*, commonly involve the tubes as well as the ovaries. Closure of the tubes almost necessarily is the first condition of retention, and thence of hemorrhagic and dropsical accumulations.

*Dropsy of the tube* is probably a secondary phenomenon of various affections, as of inflammation or effusion of blood. Effusions cause distension; these being preceded or followed by closure of the extremities of the tubes, saccular dilatations readily form, and the outlets being closed, sacs of considerable size may form. Baillie describes "dropsy" of the tube, and quotes Portal as having referred to it. Baillie says the tube terminated in a cul-de-sac. Hooper gives an excellent engraving of a case which exhibits very clearly the characteristic contortions and dilatations of the tubes, the maximum of dilatation being on both sides at the abdominal end. Both tubes are generally symmetrically affected. The cyst is not necessarily single, but may be subdivided by tight fibrinous bands, the product of peritonitis, encircling and constricting the tube at various points. The muscular wall is thickened. The mucous membrane is changed from its natural appearance; it becomes smooth or roughened by papillary vegetations from the submucous connective tissue.

In many of these cases the disease is only recognized by dissection, death being, in some instances, brought about by other causes.

The contents of the tube may be mucous, purulent, watery, sanguineous like serum, or thick. Boinet says he found in a Fallopian tube thirteen pounds of water mixed with pus. Simpson, recalling the intimacy and extent of the adhesions often formed with the ovary, and the ease with which the diseases of the tube may thus be confounded with those of the ovary, doubts the accuracy of Boinet's conclusion.

The quantity of fluid which constitutes the *hydrops tubæ* is not usually very great, but Dr. Peaslee<sup>2</sup> relates a case in which the patient had been tapped twice for ovarian dropsy, in whom there was found on the right a true ovarian cyst, and on the left a tumor of the Fallopian tube of very large size. The tube had become occluded at the very commencement of the uterus; accumulation took place beyond, until the tube was distended into a sac with the capacity of eighteen pounds. The whole was adherent to everything in its neighborhood.

Sometimes dropsy of the tubes is associated with, probably dependent upon, general dropsy, as in a case, No. 2254<sup>30</sup>, in Guy's Museum. This specimen shows the uterus and appendages. The right Fallopian tube is

<sup>1</sup> Monatsschrift für Geburtskunde, 1869.

<sup>2</sup> New York Medical Journal, 1870.

greatly dilated. It came from a woman, aged forty-five, admitted for renal dropsy.

In a considerable number of cases, obstruction at the uterine orifice of the tube, as by a fibroid tumor, seems to have been the cause of accumulation of fluid in the tubes. This is seen in specimens Nos. 866, University College, and 2643, Royal College of Surgeons. No. 2261<sup>30</sup> in Guy's Museum shows "a fibrous tumor of the uterus. Dr. Oldham dilated the os (uteri) to get at the tumor. Whilst under treatment, the patient was seized with acute peritonitis, and died. An abscess in the left tube, in which the ovary was involved, had burst."

The symptoms produced by dropsy of the tube resemble those arising from other enlargements of the tube or ovary up to a certain point. There is, says Simpson, an uneasy sense of weight in the side affected, and a feeling of pressure in the limb; usually the limb is rendered more or less numb from the pressure of the tumor on the nerves passing through the pelvis, and this may even extend to lameness, as in pelvic cellulitis. In some cases the swelling acts chiefly on the bowels, keeping them loaded. More rarely there is a certain degree of dysuria. Intercurrent at some period of the history, signs of local peritonitis will probably appear.

*Diagnosis.*—Dilatation of the Fallopian tube may be diagnosed from small cystic enlargement of the ovary by the *shape* of the tumor, its *position*, and by its *relation to the uterus*.

It is of essential importance to clear the way by emptying the bladder, and by determining the exact position of the uterus by the sound.

A small cyst of the ovary gets behind, and a little to one side of the uterus, pushing the uterus forwards against the symphysis, producing probably irritation of the bladder or retention of urine; there is only slight obliquity imparted to the uterus. The shape of the tumor is more or less spherical. It is felt better by the rectum than in the roof of the vagina.

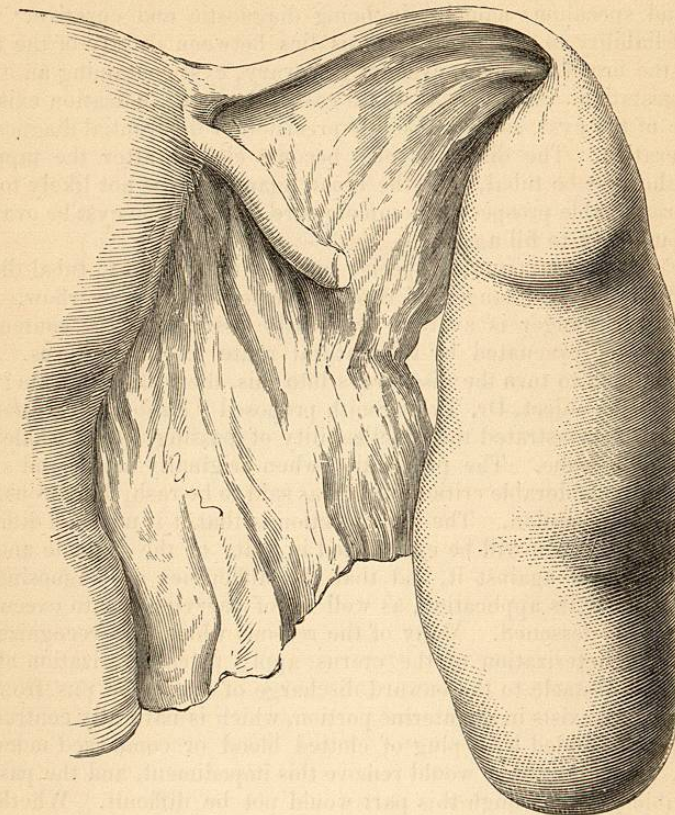
Fluid distension of the tube produces an elongated, contorted, cylindrical swelling. Its position is more forward than that of the ovary; it does not, therefore, push the uterus forward, but pushes the fundus towards the opposite side; there is greater obliquity of the uterus. The swelling also may commonly be felt behind Poupart's ligament, and can be defined between the hand outside and the finger in the vagina. Vaginal touch will enable the observer to detect the swelling on one side of the cervix uteri.

Except in the case of tubal gestation, affections of the tube are commonly symmetrical, that is, both tubes are alike distended. This condition itself would be greatly diagnostic from ovarian disease, which is not nearly so often double, and very rarely, indeed, symmetrical; one ovary, where both are affected, being more advanced in disease than the other. When both tubes are involved, they will keep the uterus straight between them, and a cylindrical contorted roll will be felt on either side.

Fig. 86 gives an ordinary form of the dropsical tube. It comes from a girl, aged nineteen. Both tubes are tortuous, and each forms an elongated and somewhat conical cyst. The dilatation begins about an inch and a half from the uterus, and gradually increases until it attains a diameter of an inch. The parietes are thinned in proportion to the dilatation. The fimbriated extremities have become adherent to the ovaries

and other parts, and thus have become closed. In the living subject these distended tubes would occupy the iliac fossæ, lying nearly in a right line with the fundus uteri.

FIG. 86.



Dropsy of Fallopian Tube (R. B.). (St. Thomas's Museum, nat. size.)

Another specimen in the same museum, No. FF. 55, shows each tube dilated into a globular cyst. The cyst on the right side was filled with bloody fluid, and some laminated coagula still remain adherent to its upper part. The other cyst is distended with white, fatty matter, contained in numerous cells. The tubes at a short distance from the uterus are completely closed. The uterus is healthy. The specimen was taken from a woman, aged twenty-one, of dissipated habits, who died of phthisis.

An incidental consequence of most morbid conditions of the Fallopian tubes is sterility. There may be mechanical obstruction to the passage of the ovum and spermatozoa; or, if the canal be pervious, the condition of the lining membrane or of the secretions in it may be destructive to the vitality of the male and female elements. Another incidental consequence is the proneness to extra-uterine gestation.

The *treatment* of dropsical distension of the Fallopian tubes consists simply in puncturing the cysts through the vaginal roof. If a tense fluctuating swelling be found in this region attended by local distress, there ought I think to be no hesitation in tapping it by the aspirator-trocar. This instrument combines in a high degree the merits of the sound and speculum, namely, in being diagnostic and curative. The range of liability to error in diagnosis lies between dropsy of the tube, cysts of the broad ligament, cysts of the ovary, cyst containing an extra-uterine gestation. Now, in all these cases, the same indication exists to puncture of the cyst, so that absolute precision of differential diagnosis is not imperative. The diagnosis may become clearer after the tapping. Thus if the cyst be tubal, or in the broad ligament, it is not likely to fill; there is reasonable prospect of complete cure. But if the cyst be ovarian, it is not unlikely to fill again.

There are many points of special interest in relation to tubal distension. We know the danger of rupture, perforation, or overflow. We know that this danger is averted or greatly lessened, if the contents of the tube can be evacuated by the natural route into the uterus. Can nothing be done to turn the discharges into this, their natural drain? To accomplish this object, Dr. Tyler Smith proposed "*Fallopian catheterization*." He demonstrated the practicability of passing a fine whalebone probe into the tube. The proposition when originally made, and since, encountered considerable criticism; it was said to be rash, dangerous, and impossible of execution. The real objection is that it is new and difficult. I think the operation will be established in spite of the ridicule and the arguments aimed against it, and that the difficulties of diagnosing the cases proper for its application, as well as of carrying it into execution, will be greatly lessened. Many of the reasons which are recognized as justifying catheterization of the uterus, apply to catheterization of the tubes. The obstacle to the onward discharge of mucus or pus from the tube commonly exists in the uterine portion, which is naturally contracted, and may be occluded by a plug of clotted blood or condensed mucus or pus. A very slight force would remove this impediment, and the passage of a flexible probe through this part would not be difficult. Whether it would be easy or feasible to pass a probe to any considerable distance along the canal, following its sinuosities, is a matter for experience to determine. It will, I think, rarely be necessary. I can, indeed, imagine that a tubal gestation-sac might be ruptured in this way, and the gestation so brought to an end. But the tapping of the sac may be better accomplished through the roof of the vagina.

It deserves to be borne in mind that the secret of preventing many of the tubal diseases, of curing some and of averting the chief danger of others, consists in securing patency of the uterine ends.

*Fibroid tumors, or myomas*, similar in character to the tumors so named of the uterus, may occur in the Fallopian tubes. Baillie describes "a hard tumor growing from a Fallopian tube, which exhibited precisely the same appearances as the hard tubercle (fibroid) of the uterus." They are developed out of the muscular coat. They attain a considerable size. Professor Simpson describes one as large as a child's head; but

probably this was of exceptional size. They are rare, or, at least, have been rarely identified as distinct from uterine fibroids or solid ovarian tumors. Arising on one side of the uterus, that is, in a situation very close to that of ovarian tumors, and being at first movable, the difficulty of discrimination must be almost insurmountable during life. And even after death there is room for doubt, for a fibroid tumor, taking its origin in the external strata of the uterine wall, may be gradually cast off so completely that the pedicle even becomes atrophied and no longer traceable; the detached tumor then may lie between the folds of the broad ligament in such close proximity with the tube that appearances may support the idea that this was its true origin. They would differ from ovarian tumors in their progression. Comparatively inert, they annoy chiefly by mechanical pressure; they may get jammed in the pelvis, and displace the uterus, and press upon bladder or rectum. If of large size, and situated above the pelvic brim, their bulk and weight would cause inconvenience, perhaps peritonitis. In the event of symptoms severe enough to indicate the expediency of removing the tumors, the operation as for ovariectomy might be performed, with a fair prospect of success. It is also possible that small ones dipping low in the pelvis by the side of the uterus might be removed by the vagina.

*Tubercle* most frequently occurs in association with tuberculous deposit in the uterine cavity; but it may occur in the tubes alone. Such a case is preserved in St. Thomas's Hospital Museum. The tube is there filled with a cheesy, soft mass; the tube is swollen, distended, resembling in outward form the distension from fluids. Generally both tubes are symmetrically affected.

Rokitansky says tubal tuberculosis generally occurs as a primitive affection, and is afterwards complicated with tubercle of the abdominal glands. It is also associated with tubercle of the lungs and mucous membrane of the intestinal canal.

It appears sometimes in childhood, sometimes in the age of decrepitude, but usually in the period of puberty. Often it becomes developed in consequence of childbed. Rarely, the tuberculous mass goes into calcification.

In St. George's Museum are two specimens of "scrofulous disease" affecting the mucous lining of the uterus and tubes. In one, both ovaries were also affected, "containing the remnants of a semi-fluid tubercular matter;" in the other, one ovary was converted into an abscess containing scrofulous pus. Both subjects had tuberculosis of other organs as well.

Two specimens in Guy's Museum (Nos. 2251 and 2251<sup>10</sup>) show tuberculous matter in the tubes of children. One of these died of strumous inflammation of the brain. There were also tubercles in the lung. But it may happen that, although tubercle in the Fallopian tubes is generally of secondary importance as a cause of death, the function of the tube being of little comparative moment, the disease in this part may be the immediate cause of death. Perforation of the tube may outstrip the fatal march of tubercle in the lung. Specimen No. 2251<sup>40</sup> in Guy's Museum exhibits the "tubes and ovaries inverted in adventitious tissue, forming part of a general tubercular peritonitis. The tubes were greatly

distended with thick white grumous matter. The subject, aged twenty-two, died of phthisis and peritonitis.

*Carcinoma* occurs as an extension of the same disease from the uterus or ovaries. Kiwisch saw a case in which the tube burst from distension of the walls with cancerous tissue.

#### THE BROAD LIGAMENTS.

Apart from the puerperal inflammations which are beyond the scope of this work, and the inflammations which arise in connection with uterine and ovarian disease which are more particularly described as a part of the history of these diseases, and under the heads—Pelvic Peritonitis, Cellulitis, Perimetritis, Hæmatocele, the principal affections to arrest attention in this place are *dropsy, cysts, fibrous tumors, and phlebolithes*. Cancer, phlegmasia dolens, and diseases of lymphatics fall better within the history of uterine and ovarian diseases.

*Extra-ovarian cysts, or cysts of the broad ligament and of the Fallopian tube*, are chiefly of two kinds. One kind is a dilatation of the *terminal bulb* or vesicle of the tube (see Figs. 3, 9). In the form and size figured, they cannot be called pathological. They rarely exceed in size that of a pea or nut, but occasionally are found as large as an egg. They usually have thin walls, are covered by peritoneum, and hang by a long slender pedicle. They may burst; but the small quantity and innocent nature of their contents cause no great irritation in the peritoneal cavity.

The other variety of cyst is found between the folds of the broad ligament, at least in its original stages. It is a development of one of the *tubules of the parovarium* (see Fig. 3). These cysts may attain sizes varying from that of a pea to that of a man's head; but the latter size is probably rare. The walls may become thickened by development of fibrous tissue; but still they remain comparatively thin. They differ from the greater number of ovarian tumors in their sphericity, and in fluctuation being equal in all directions. As these cysts are strictly simple and innocent, and not likely to fill again if emptied, there is no sufficient reason, supposing diagnosis be clear or even presumptive, for subjecting the sufferer to the grave risk of an operation for extirpation, or even to that of injecting tincture of iodine. Simple tapping is often enough for their cure. There can hardly be a doubt that some cases of presumed cure of ovarian cysts by injections of iodine or by vaginal tapping were really cysts of the broad ligament. At least I have no doubt that such was the true nature of some cases which have occurred in my own practice. The possibility of a cystic dropsy being of this kind dictates the expediency of executing a preliminary tapping in cases where the fluctuation is very free and universal. The fluid drawn off may determine the diagnosis. Dr. Bantock examined the contents of a cyst of this kind. The specific gravity was 1003.6. It was a watery, slightly albuminous fluid (*Obstet. Trans.*, 1874).

When smaller than an orange they may be retained in Douglas's pouch. Puncture by an aspirator-needle through the vaginal roof may be enough to cure them.

The features of a cyst of this kind, when greatly enlarged, are illustrated in a case operated upon by Mr. Wells. "A lady, aged twenty, had observed an increase of size for a year. The abdomen was occupied with a fluctuating tumor which extended upwards two or three inches above the umbilicus. The uterus was far backwards, a little to the left, and freely movable; the right side of the vagina was depressed, giving rise to the impression that the connection was with the right side of the uterus and rather close. The disease gave so little uneasiness that all interference was postponed for some months. In the mean time the increase had been rapid. The cyst was then removed, and the adjacent ovary along with it, as it felt hard and appeared larger and more corrugated than is usual in unmarried women; though from its being quite apart from the tumor, it would have been easy to remove the cyst and leave the ovary. The pedicle was not thicker than a finger. Another cyst, the size of a walnut, in the left broad ligament near the ovary, was laid open and emptied. Dr. Wilson Fox reported the removed cyst as when distended about twice the size of an adult head. The Fallopian tube flattened out is seen to course along its external surface. The fimbriæ are, however, non-adherent and distinct. The ovary is found in a fold of the broad ligament distinct from the tumor, and presenting the natural appearance. It contains no cysts. The cyst itself has a smooth external wall. It is lined internally by a flattened polygonal epithelium. No villous or papillary growths can be discovered on its inner surface. This was of a delicate rose color. The vascularity of the cysts was not very great. No other cysts could be found in the broad ligament."

The vessels in the broad ligaments are a favorite seat of *phlebolithes*, or stony transformation of blood-clots. The vessels, slenderly supported by the flaccid tissues through which they run, liable to great variations of fulness and tension, and embraced between layers of peritoneum extremely liable to inflammation, are subject to dilatations and formation of thrombi. These vary in size from that of a pea to nearly that of a cherry. Undergoing hardening they may become calcareous. As in the case figured in Carswell, the ensuing obliteration of the vessels may lead to atrophy of the uterus.

*Hæmatocèles*, or blood-effusions, may form in the broad ligaments. These will be more conveniently discussed under the general head of Hæmatocele.