

rank in the profession in the countries which they represented gave great interest to their papers and discussions, were Drs. Martin, of Berlin, Grailly Hewitt, of London, Reed, of Glasgow, Apostoli, of Paris, and Cordes, of Geneva, with many others of first rank in this and other countries. With this array of talent so well organized, the meetings were interesting and profitable. Among the subjects discussed which have been considered by our Society with interest during the past year, was that of uterine myoma. Its treatment, in suitable cases, by ergot, was ably presented, as also by electricity, which called forth much discussion. Dr. Apostoli's method of using electricity in gynecology was fully explained and discussed. Dr. Martin's operation for vaginal total extirpation of the uterus for carcinoma, which several of you gentlemen had the pleasure of witnessing while he was in Boston, was elaborately explained and illustrated; but space will not permit me to give even a synopsis of what was presented of interest to our Society.

The Gynæcological Society of Boston can and ought to do efficient service in its important and honorable field of labor. Its talents are versatile, its spirit both progressive and conservative. It has in its membership ardent and enthusiastic investigators, men who do not feel obliged to stop where their predecessors did, or to take as proved all they have been taught, but who, with clear heads and steady nerves, are carefully exploring in untrodden paths by the light of advanced scientific thought and with all the appliances of modern art. It has also men with the experience of years upon them, men who have had grand success with old theories, and who have a right, by reason of their past success, to be conservative and hold fixed opinions. Some who have spent much time in the hospitals and laboratories studying their specialties with the best advantages and under the great masters of our art, and some who, although less favored, perhaps, in these respects, have been taught independence and self-reliance from necessity while treating all "the ills which flesh is heir to" in country practice where they were obliged to act with the best light they had and watch the results with no one to counsel them or share the great responsibilities, and some who have just entered upon the responsible duties for which they have been for years preparing themselves, full of enthusiasm and hope. Our Society is also honored by having in its membership, ladies, possessing not only the education and experience of the sterner sex, but also a keener sense of the wants and of the peculiar nature of the disease of which our specialty calls upon us to treat.

In our list of corresponding members may be found the names of gentlemen who are known the world over, and who are acknowledged as leaders in gynecological studies and practice. With this array of talent working harmoniously together, the possibilities of our Society for good to each member and the communities in which we live, are very great.

ORIGINAL ARTICLES.

UTERINE MOLES.

Read before the German Medical Society of Philadelphia, February 13, 1888.

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The most important of the internal organs of generation is the uterus. Its structure, anatomical character, physiological attributes and pathological changes have received the most attention from the zealous investigation not only of the obstetrician and gynecologist, but of the physiologist; and last, but not least, the pathologist. The peculiar and especial office that places it in the foremost rank of the anatomical structures in the woman is that of reproduction. After copulation, should fecundation take place, it then becomes the nest upon which the fecundated ovum rests, grows, matures, during that period which we term gestation, and at the expiration of this nearly uniform period it expels its contents: labor; and then resumes again its normal size and functions. These changes comprise a normal pregnancy, so familiar to you all.

But this evening I will speak of the pathology of pregnancy; that is, of one of the functional derangements that occur in the pregnant woman, in which there may be an accidental lesion of the ovum, spontaneous to the ovum, which always ends in death, and which we will designate as Molar Pregnancies.

I must, however, preface my remarks with this observation: that whilst there are certain forms of moles termed the false or spurious moles, which have nothing at all to do with conception and which, for the proper understanding of our subject, must be spoken of and described, I may be open to your criticism by speaking of these affections under the term pregnancy; but as I before observed that the uterus expels its contents by what we term labor, and as labor is the ultimate result of pregnancy, the expulsion of a spurious mole has the same physiological action as that of the true mole, probably and properly termed a spurious pregnancy; at any rate, the women suffer pain quite equal, and a virgin will remain a virgin, a mole notwithstanding.

Historical Sketch.—Moles were known to the earliest writers. This can be attested by the fact that Hippocrates, Aristoteles and Galenus had been acquainted with them; speaking of them and understanding them to be degenerated ova, which we to-day know as vesicular or fleshy moles. The Arabians gave a greater field to their designation of moles. They understood a mole to be not only the uterine contents, but also any tumor which might lay in the cavity or in its walls. Then again, at a later period, a difference was shown in moles, and then was spoken of true and false moles; the product of conception and not of conception.

Schenk v. Grafenberg, in 1565, was the first to describe the vesicular or hydatidiform mole (Blasenmole). The nature of this product was for the great-

est period obscure. From the end of the last century even until a recent period this was looked upon as true vesicular worms. Whilst already Ruysch (who was still uncertain whether they were a pathological product of pregnancy), looked upon these cysts as an alteration of the villi. Velpeau and Johan Müller disputed that the vesicles were true cysts. The problem: from whence originated this growth? was unsatisfactorily answered by different theories. Gierse and Meckel seek the origin of the product to be a hypertrophy of the villi (zotten); whilst H. Müller the exochorion, and Mettenheimer the cellular tissue. Virchow finally cleared away the obscurity and brought light on this subject. He proved that vesicular or hydatidiform moles (described also by Hildebrandt as "fibrous myxomata" of the placenta) were a hyperplasia of the mucous membrane—the elementary bases of the finer tufts of the chorion (Chorionzotten). Schroeder quotes cases of "diffuse myxoma" of the placenta, by Breslau and Eberth, and Spaeth and Wedl.

Moles and their Synonyms.—Obstetricians divide moles into two great classes: *a*, the false; *b*, the true moles.

True moles are subdivided, as regards their physical character, into fleshy and vesicular or hydatidiform. The fleshy are again divided into fatty, carneous (steinmole), etc. Moles have been designated by different names: moon-calf (Mondkalb); devil's brood (Teufelsbrut); wind-egg (Windei); sun child (Sonnenkind); Neirenkind, Kielpopf, Missgeburt, etc. By the professional they are designated by their contents: blood mole (Blutmolen); water mole (Wassermolen); air moles (Luftmolen); hair mole (Haarmolen); cartilaginous mole (Flechsensmolen); bone mole (Knochenmolen); and calcareous mole (Kalkmolen).

A. Spurious Moles.—I shall speak rather briefly of this portion of my paper. As an independent affection, existing uncomplicated, I believe it to be impossible. Its mention here is to open the way for the discussion of the more important variety.

Mauriceau believes that moles could not exist without impregnation; that it was always the offspring of intercourse. In his 105th aphorism (*Traité des Maladies des Femmes Grosses*) he says: "Les femmes n'engendrent jamais des moles, si elles n'ont usé du coit." This Alexander Milne, of Edinburgh, cannot subscribe to, believing that cases occur; nay, more, having met with them, where fleshy masses have been expelled from the uteri of women who certainly never had connection. If virgins expel such things, then, they are not to be impeached; to do so would be unjust.

Various substances, organized or unorganized, may be discharged from the uterus of the virgin; such substances as clots of blood, membranous shreds, or even whole membranes, as well as fibrinous materials. These may even have the shape of the uterine cavity, and may come away naturally or must be removed; and which have nothing whatever to do with fecundation, and are termed spurious moles.

Their significance is of some importance from a medico-legal view, and the utmost care should be

exercised in differentiating these false moles from true ones. Difficulty may arise when the discharged tissue is the membranes of membranous dysmenorrhœa, where this tissue may be mistaken for true decidua membranes. The circumstances attending each case should receive the earnest scrutiny of the attending physician. All circumstantial and direct evidence should be gathered: were there any previous attacks? note the absence of the signs or symptoms of pregnancy, and so on. Examine the discharged mass; should this happen to be complete, we may find the opening of the Fallopian tubes and that of the cervix, which is never observed in true decidua. The microscope, however, will determine the presence or absence of the fecundated ovum. Blood clots, polypi, and small fibroids or portions of large ones should not be difficult of recognition by naked eye or microscopic examination.

B. True Moles.—True moles are always the result of impregnation. The villi of the chorion may become distended with fluid collecting within them, causing them to swell and assume the form of rounded vesicles comparable to gooseberries or grapes, resembling hydatid vesicles, and on account of this analogy they were for a long time supposed to be true hydatids. Or an extravasation of blood may take place between the maternal and foetal structure of the fecundated ovum or into the tissue of the latter, producing a fleshy mole. The embryo may become mummified, or may speedily disappear in the early stages, and then we meet only with the membranes or appendages.

Two chief varieties of true moles are at present recognized, namely: 1, the fleshy; and 2, the vesicular or hydatidiform mole.

1. Fleshy Moles.—These I believe to be the most frequent. My colleagues who are acquainted with this formation and myself have met with these cases more frequently than the hydatidiform. I shall present the histories of a number of cases which I have met in practice and in that of my colleague, Dr. L. Wolff, which may describe the conditions met with:

Case 1.—Dr. Wolff's case. History incomplete. The doctor was called to a woman in absence of her regular medical attendant. She was suffering from uterine hæmorrhage. Besides this, she had painful uterine contractions. The flooding was very profuse. On examination a roundish mass was discovered engaged in the os tensi. Tamponnage and internal administration of ergot failed to remove this, although it gave rise to violent contractions. Expulsive efforts were much marked, but with no result. Dr. A., for whom Dr. Wolff was attending, returned in a few days, and afterwards informed him that the case was one of a fleshy mole, firmly adherent to the uterine fundus, which he had to detach with a blunt hook and curette.

Case 2.—Dr. Wolff's case. A German woman. History of general good health; no syphilitic or other taint. Previously treated by my preceptor, Dr. Julius Kaemmerer, who treated her for several of the kind before. They were spontaneously detached after much hæmorrhage. Dr. Wolff treated the same case with precisely the same symptoms:

previous suppression of the menstruation of two or three months, beginning hæmorrhage and pain, becoming worse as the case continued; the mass coming away naturally.

Case 3.—Dr. Wolff's case. A German woman, strong and healthy appearance, æt. 30 years. Had been complaining of uterine pains, bearing-down pains, for some time, with slight hæmorrhage which became very profuse, for which Dr. Wolff was sent for. The uterine contractions were much greater than he had previously met with. Digital examination revealed a round, soft body engaged in the os tæni; it was firmly adherent and could not be removed between the fingers. Tampon and ergot had no effect, though frequently repeated. As the hæmorrhage continued so profusely as to endanger life, removal was proposed and consented to. This was accomplished by means of the Beecher placenta forceps after considerable difficulty, the adhesions being so firm, and effected only after twisting or rotating the mass. The adherent or pedicular portions were found quite distinct, and had undergone partially but distinct fatty degeneration.

Case 4.—Dr. Wolff's case. Mrs. C., an Italian woman with a history of a number of miscarriages. Was attended by Dr. H., who called Dr. Wolff in consultation. The doctor found the patient almost pulseless. Dr. H. was not there when the doctor arrived. He had, however, succeeded in controlling the hæmorrhage by means of the tampon and ergot. Stimulants were administered and twenty-four hours subsequently the tampon was removed by Dr. H., who insisted that the case was one of miscarriage only, and predicted that the placental residue would be found in the vagina after removal. As no foetus had been expelled, and no history of fecundation, Dr. Wolff claimed the probability of its being a mole. Tampons failed to dislodge it, both in the first attempt or any repetition, therefore removal was consented to, and with the Beecher forceps a fleshy mole was removed, part of which had been previously broken up and removed by Dr. H. After removing all particles with the blunt hook and curette and irrigation with hot water, the hæmorrhage ceased, the uterus contracted, and a slow convalescence ensued from the extreme anæmic condition.

Case 5.—Mrs. N., æt. 35, had never borne children. Was called to see her for intense uterine pains with slight hæmorrhage. She had suppression of the menses of ten weeks' duration. Morphia was administered hypodermatically. On the third day hæmorrhage became more profuse, tamponage and ergot were resorted to, which caused the expulsion of a fleshy mole the size of an orange, round and somewhat firm, presenting an irregular surface covered with coagulated blood. When incised, the texture was somewhat compact, and in the centre was found a small cavity, lined by a serous membrane and containing a small quantity of fluid. Not a vestige of either the foetus or cord remaining. She made a rapid recovery.

Case 6.—I was called by a midwife to see a Hungarian woman who was supposed to be laboring under a beginning miscarriage. She appeared to be about

40 years of age, well nourished and fleshy. She had been in labor about twenty-four hours, and the midwife was at a loss what was presenting, which was shared by myself. There was a slight hæmorrhage, with uterine contractions. The uterus was open about the size of a dollar, soft and pliable, and a tendency to dilate. In several hours a large fleshy mass was discharged, about the size of a foetal head, which presented the same physical characteristics as the previous case, except in the walls of the mole, which were probably 3 inches in thickness; small cavities were found filled with blood. In its centre the same cavity as in the previous case was found (which, in regard to proportion to the entire mass, might be placed as 1 to 20), lined with serous membrane and containing some fluid and nothing more.

Case 7.—A Polish woman, Mrs. H., æt. 38, mother of five children, the youngest 3 years. Had had three miscarriages, but none since the last birth. Had suppression of the menses for over a year and supposed herself to be passing the menopause. For four months has had constant dribbling of blood from the uterus with intermittent pain. I was called to see her, and on examination could easily pass my finger into the uterus. Presenting at the os, and movable, I found a mass of tissue. This I attempted to remove with curette and blunt hook, but without success. By means of this placental forceps I was enabled to remove the mass, previously crushing it so as to remove it. It was a mole, probably one of those termed the carneous, of very dense fibrous tissue, with here and there small pellicles of calcareous deposits. The woman made an excellent recovery.

Case 8.—B. F., an English woman, æt. 33 years; well nourished; family history good. Has had four miscarriages, and then one pair twins; one year after gave premature birth to twins, both dead, probably seven month foetuses. A year after this I was in attendance and she was safely delivered of a full term child, and with the afterbirth, seeming to be adherent, was discharged a large fleshy mass, having all the characteristics of a fleshy mole. Its size was that of an adult head; it was pliable, easily moulded, and was brought away without any difficulty. I mistook it at first for a monstrosity, but it had no resemblance in any of its features. I incised it and found a small cavity containing a small amount of fluid. This case was unique, and I might have doubted that the mass as a fleshy mole could exist with the living foetus, but since then I have read in an excellent monograph by Alfred Wiltshire, Physician-Accoucheur to St. Mary's Hospital, London, that such a state of things was said to have occurred on the occasion of the birth of the celebrated anatomist Beclard. That, in fact, twin pregnancies may occur where degeneration affects the membrane of but one ovum.

ETIOLOGY.—As before mentioned, extravasation of the blood between the maternal and foetal structures of the fecundated ovum, or into the tissues of the latter, appears to be the active agent in the production of the fleshy mole, though it is difficult to determine the agencies whereby this condition is brought about. Diseased state of the decidua may doubtless result when pregnancy supervenes upon chronic en-

dometritis. In a case I treated wherein pregnancy supervened, a miscarriage resulted. I did not examine then, which probably I would do now, the products of this miscarriage. It is said that an effusion of blood into the maternal structures may occur from cardiac disease; though my experience teaches me that women suffering from cardiac diseases very rarely become pregnant.

Frequency.—From the number of cases presented this evening it may appear that moles of the fleshy variety are not infrequent. I am led to think that they are more frequent than one supposes. The lack of knowledge, coupled with the ridiculous faith placed in the assertions of the women who have them, leads the attendant astray. Again, their appearance, likened to that of placental tissue, especially when blood is effused into it, besides where the mummified foetus is still in existence, or the remains of the foetus, of the cord, etc., leads the physician to a diagnosis of a simple miscarriage and not that of a molar pregnancy. Fleshy moles are by far more frequent than the vesicular or hydatidiform variety, and are not an uncommon concomitant to frequent pregnancies or miscarriages.

SYMPTOMS.—The immediate symptoms are those of a threatening miscarriage. The premonitory symptoms are likened to those of the very earliest months of pregnancy. Absence of the placental souffle and the positive signs of pregnancy, with suppression of the menses, are among the signs. I and my colleague were only called at the threatening abortion. I do not believe that any positive symptoms exist by which accurate diagnosis can be made previous to its expulsion.

Course.—The course of the molar pregnancy of the fleshy variety is variable. Generally at three months nature seeks to throw off the mass. Hæmorrhage comes on about this period, and then it is simply a question of time when the uterus expels its contents.

DIAGNOSIS.—The diagnosis of the fleshy mole I should deem impossible. Suspicion may arise when the patient has had one before, but as regards positiveness, I think it out of question. It can only be made when you have the tumor in your hand.

PROGNOSIS.—All the cases here quoted ended favorably. Prompt treatment should be the rule. Should danger arise from the excessive hæmorrhage, the tampon is always a safe and efficient remedy. Some cases of extra-uterine moles which authorities quote, that have been met with in the ovary and abdomen, and the cyst given way, causing death, are of course unfavorable. Sometimes these cysts have opened into the bladder or bowels; the result being the same. Still, the same chances which extra-uterine pregnancies have in antiseptic surgery extra-uterine moles may have; and the prognosis modified. These cases are, happily, most rare. Wilton (*Lancet*, February, 1840) relates one case. Peritonitis may result from the misuse of instruments, causing death. Hæmorrhage might, and pyæmia and septicæmia, etc., may cause death.

PATHOLOGY.—The pathology of fleshy moles is still shrouded in obscurity. Heart disease, causing an

effusion of blood; again, syphilis and other blood dyscrasie, appear to exert an influence, and perhaps the same may be said of acute specific diseases where they fail to excite abortion. Whatever may be the exciting cause, when once blood has been effused into or between the foetal and maternal structures, the vitality of the embryo is speedily compromised. The common result is abortion; but, should not the whole be thrown off, growth may take place in the remaining tissue; while the effused blood becomes organized and gives bulk to the mole. In a case of cancer of the ovary, posted by a friend, I removed some time previous what I termed a retained placenta, which was in the uterus of that unfortunate woman five months.

The maternal placenta is formed by the decidua serotina. The foetal placenta is formed by the villi of the chorion, which, having originally covered the entire surface of the ovum, atrophy over the major part of the surface, while they ramify and develop, *ad infinitum*, at the point corresponding to the serotina, where they become imbedded and constitute the vascular mass known as the placenta. To study changes in the chorion amounts to studying the lesions of the placenta, and the reverse. Now, these changes may relate to each of the placental elements, *i. e.*, the vessels and the villi.

Not infrequently a considerable effusion of blood takes place immediately beneath the amnion, encroaching greatly upon and sometimes rupturing the amniotic sac, and Cazeau (1876, page 578) gives his description of a fleshy mole as follows: "It may further happen that the placenta, maintaining its vascular adhesion with the internal surface of the organ, continues to develop after the child's death, the cord and foetus becoming atrophied, and then completely destroyed; or, indeed, the ovum may rupture, and the little product escape, leaving the membranes behind. These envelopes may undergo various modifications, but the most common is the morbid product known as a fleshy mole." The inner aspect of the cavity then presents an irregular nodular appearance, and is of deep red, almost black color. When the nodules are incised they are seen to be composed of firm blood clot. The foetal surface contains numerous blood cysts. The tissue microscopically I present here.

If not immediately thrown off, growth may continue in the tissues, and a bulky fleshy mole results. The connection between the ovum and the womb being most intimate at the placental site, changes go on most actively at that spot, and when blood is largely effused here it constitutes what is called apoplexy of the ovum. Examination of the carneous moles shows the decidua vera to be the chief seat of degenerative changes; but in all cases chorion villi may be found, though much altered by fatty and molecular matter. Fatty degeneration may be extremely marked, and in rare cases calcareous degeneration may be met with, forming what the Germans term the Steinmole; but such degeneration of other uterine bodies may occur, as fibroids, etc., and therefore clear evidence of conception should exist before it is looked upon as a true mole. Blood polypi are

occasionally met with, arising after miscarriage or delivery at full term, in which, organization having taken place and communication being established between the clot and the uterus, degenerative changes go on to the extent of calcification, whereby the so-called Steinmole may be produced.

2. *Vesicular Mole*.—The vesicular, hydatid or hydatidiform mole is the better understood, if not the more important variety of the true mole, and has received the most attention of the pathologist. I have seen it but three times, twice in one person. I will relate the cases here.

Case 1.—Mrs. S., an American lady, æt. 28 years, brunette, a little above the middle size; well nourished; had one child, æt. 5 years; and two miscarriages, one of which was twins, I attended her in both. I was engaged to attend her for what we both thought a normal pregnancy. She could not tell me how long she had been pregnant, but from indication I judged her to be about six months. Her family history is good. I have some doubts as regards her husband's morals though I have never treated him. She sent for me on account of a show. I made no examination, but treated accordingly. She increased rapidly in size, at the same time the dribbling of blood continued, and she says, she felt not at all like carrying her first child, and therefore feared that all was not right. She was confined to her bed and probably a month later I was again sent for; she having at my former visit requested me to wait until I was sent for. I saw her very anæmic, having constantly lost blood and small masses, which she told me were blood clots. Examining the abdomen by inspection and palpation revealed a boggy sensation, the abdomen had the same appearance as in dropsy; the uterus was not at all conical but seemed transversely more wide.

Digital examination revealed a protruding mass through the os, and withdrawal brought away numerous vesicles. The diagnosis of vesicular mole being explained, permission was freely granted to remove the mass, which was with some difficulty accomplished. The patient making a very slow and tedious convalescence.

Case 2.—Mrs. L., present age 42 years; at my attendance six years ago 36 years. A Russian woman, well nourished; at the present time she has given birth to thirteen living children, the oldest 23 years, the youngest 18 months; eight are still alive. She has had two living children since my attendance in 1882. She was married at the age of 15. Her husband has perfect health as regards specific diseases. When I attended her in 1882, I was called for a hæmorrhage from the uterus. This was very profuse. On examination I found a large mass filling up the whole vagina and protruding externally, which I at first mistook for a blood-clot. The tissues of the mass were easily torn in attempting removal, which was accomplished with great difficulty. The mass I removed by scooping out the tissues with my fingers, and a large quantity was thus removed. I irrigated the uterus and vagina with vinegar and water injections. Three or four days after my patient mysteriously disappeared, having forgotten to pay me, and I never saw her again until three months ago, when she

brought her youngest child to the Jefferson Hospital for treatment and our recognition was mutual. She complained of some uterine trouble, and I referred her to the Women's department. Five days afterwards I was sent for.

She was in bed; complained of slight pain and hæmorrhage, and I gleaned the following history: Since I removed the previous mole in 1882, she had been in good health, and had given birth to two living children, the youngest was 16 months old. Since then her health has been variable, and for the last five months she had constantly a uterine hæmorrhage, intermittent in character. For this she sought treatment at the hospital, and since then has had pain of variable intensity whilst the slight hæmorrhage ceased, to give place to more copious hæmorrhage for which I was sent for. On examination I found the vagina filled with a mass of tissue and blood-clots, part of which I removed at once and have here in this jar. The next day removal of other portions was undertaken, but with great difficulty; the parts being torn in the attempt. Ergot and tamponnage with irrigations and curetting, enabled me in about ten days to remove the whole of the uterine contents.

My patient is making a very slow and tedious recovery and is still under treatment for symptoms of sub-involution.

ETIOLOGY.—Like fleshy moles, the etiology has not been fully explained. We are still not assured whether the cause of this variety is primarily in the ovum, or in the diseased deciduæ, or if it originates from the maternal cause—the blood of the mother. Ruysch, Scanzoni, and Graily Hewitt, find it in the death of the foetus; but moles have been found with living children. It is not the death of the ovum alone that can be directly the cause even if a neoplasm should ensue after such a death. That the cause may lie with the mother we have such cases on record in which the deciduæ is diseased, or other pathological affections of the uterus exist, and where moles are found more than once in the same woman. Virchow attributes it to endometritis, and this is the generally received opinion in Germany to-day. Virchow, Mayer, Depaul, Harkin, Puech and Hecker think that in the formation of the allantois is the origin of the anomaly, as we find cystic or vesicular or hydatidiform formation in the placenta or in the villi of the chorion. This may be reasonable to suppose the reason that one ovum may degenerate into a mole whilst the other may be perfectly normal. Charpentier, (Vol. V. p. 253, *Ency. Obstet. and Gynæcol.*) says: "It is probable that the myxomatous lesions begin in the abundant mucoid tissue of the villosities, and that this tissue becomes infiltrated with fluid."

FREQUENCY.—Vesicular moles are rare, though partial degeneration of placental tissue may make it more frequent. It is found oftenest in multipara of 25 to 40 years. A molar pregnancy is apparently, to a certain extent, a predisposing cause. In some instances vesicular moles repeat themselves more than once in the same woman, sometimes after pregnancies, sometimes during pregnancies. Meyer (Virchow's Archiv. 1870, Bd. 41, p. 461) relates a case where a woman eleven times carried a mole

and at the same time a full-term child. Depaul—in the same journal—relates a case wherein a woman had a mole three successive times. Bloch (Jas. Blasenmole, Freiburg, 1869) says: "Women of advanced age show a greater tendency or disposition to moles. First pregnancies are rarely so affected. One pregnancy quickly following another point to a predisposing cause to molar pregnancies."

SYMPTOMS.—In the beginning are rarely marked. The same symptoms as of ordinary pregnancy are those most usually found. The bulk of the uterus increases with great and disproportionate rapidity. There is a tendency to the loss of ovoid form and the assumption of the globular or more transversely wide shape. Generally there is evidence of some derangement, by the appearance of a watery and sanguineous discharge, later on small vesicles come away, and then the diagnosis is clear, but in their absence diagnosis is guarded. According to Percy, there is an alternation of small hæmorrhagic and watery flows, commencing in most women at the second month, and continuing at longer or shorter intervals until parturition. Gardien observes that the expulsion of hydatids is usually accompanied by hæmorrhage and syncope, and Depaul has observed the same peculiarity. This mole can reach the size of a child's head and weigh 1000 to 1500 gms. or more.

Physical examination often yields important information. Palpation may give, as Leishman remarks, a significant sensation of boggy, with absence of the irregular foetal hardness. Hardening under manipulation is very significant of the uterine nature of the tumor. On examination, a doughy sensation may be experienced in the lower segment of the uterus. Should the os be open, vesicles may be felt. To the touch they somewhat resemble recent blood-clots.

Course.—From three to four months uterine contractions set in with pain, discharge of blood, serum, mucus, etc., vesicles come away and the mass is slowly discharged. It is a very tedious process, as it is a rarity for the mass to be discharged *in toto*. Generally it is discharged in pieces and the woman suffers greatly from loss of blood, shock, etc. As a rule, the whole course of this disease is from three to six months (Kleinwächter) though cases are on record where its course was prolonged to nine or ten months, or longer even than normal pregnancy. Underhill (Amer. Jour. of Obstet., 1879, p. 182) relates a case of molar pregnancy which lasted one year. It is a rare thing for a normal and molar pregnancy to take place at the same time. As an exception Caspari relates (in Virchow's Archiv. Abgang der Mole in der 20 Woche und 3 Tage später jener einer 4 monatlichen faulgetödteten Frucht) a case in which a mole was discharged and three days later the foetus in a state of putrefaction.

DIAGNOSIS.—The diagnosis at the beginning of the disease is impossible. If the uterus enlarges too rapidly, that is disproportionate to the time; vesicular moles may be suspected. When mucus, blood, and above all, vesicles are discharged, then the diagnosis is assured. The older authors did not consider the mole as always due to pregnancy, and claimed

that the mammæ did not develop. That is not the case, for Cartereau has demonstrated the abundant presence of milk. They said the mother did not feel life; but there are moles where the child is born living and at term. Finally, the uterus shows the ordinary inequalities, and all the signs of pregnancy: nausea, vomiting, etc., may be present.

PROGNOSIS.—For the mother is always grave. The source of danger is the frequency and intensity of the hæmorrhage. In many cases the mother succumbs, not from development of the mole, but from hæmorrhage. The only instance where death could be attributed directly to the mole is that of rupture of the uterus mentioned by Madame Boivin. The hæmorrhages are usually moderate at first, and usually only become serious towards the end of pregnancy, and at the moment of expulsion. If a physician is in attendance the prognosis is more favorable than when such pregnancies are left to themselves. In some cases the vesicles are retained so closely to the uterine wall that it is with difficulty they can be dislodged, care should be taken in removing them; again, if the tumor be of extraordinary size, the prognosis should be guarded. As a rule, we should look with significance upon the size of the mole, the partial or total extraction, and the intensity of the hæmorrhage, before we give an opinion. In those instances where women have had several vesicular moles, the prognosis is more favorable.

For the child the prognosis is always serious. If the foetus be not liquefied or dead, it is always injured and ailing, and ill-prepared for life.

PATHOLOGY.—It is well to state at the onset that the name "hydatid" mole is erroneous and misleading. There are no true hydatids or echinococci in it; the physical arrangement of the vesicles is different. True hydatids are closed sacs, contained one within another, while the vesicular mole is formed by sacculi growing from one another. It was formerly supposed that they grew from a common stalk, and they were likened to a bunch of grapes or currants; but for the reason given above the simile was imperfect.

The vesicles vary in size from a chestnut to a pin's head or less; usually they are about the size of small currants, and as a few may from time to time escape accompanied by more or less sanguineous discharge, Gooch's simile of "white currants floating in red currant juice," is a very apt one.

Dubois and Desormeaux describe three varieties of hydatidform moles. 1. The embryonal hydatid mole. 2. The hollow hydatid mole. 3. The hydatid mole *en masse*.

The *first* variety consisting of a membrane, vesicular on its outer surface, with an internal cavity containing a foetus or parts of one, and possibly fluid.

The *second* kind is like the first, save that its cavity contains only fluid, and possibly a remnant of the umbilical cord, the foetus having been dissolved.

The *third* variety is distinguished by the enormous development of the hydatid bodies, and the more or less complete effacement of the central cavity formed by the amnion, the place of which is taken by a mass of soft, yellowish, spongy tissue.

Moles of all kinds are covered by a thick membrane, which is in immediate contact with the uterus, and which is nothing but the decidua. It has been carefully investigated by Robin, Barnes, Mettenheimer, Paget, Hewitt and others. According to Cazeau, M. Velpeau was the first to discover that the hydatidiform mole has its origin in the chorion, and the microscopical examinations of Prof. Robin exhibited still more clearly the true nature of the disease by showing that the envelope of the vesicles have all the anatomical characteristics of the walls of the villi of the chorion. They become dropsical, swell up, the pedicle of these dropsical villi is formed of the base of the villus affected. Gooch likened them to currants, Cruveilhier to grapes. These specimens show both. Mettenheimer thinks that on the outer surface of the little cysts, formed by the transformation of the cells of the villi, a new growth of villi arises, and that these again are morbidly altered into similar cysts, and so on. Dr. Graily Hewitt (London Obstet. Soc. Transac., vol. 1, p. 249) says there is no new formation at all.

All authorities agree that the vesicles grow from the chorionic villi. There is no new formation, but excessive and erratic development. Mettenheimer, Paget, Barnes, Virchow and others, concur in this view. Whether the change is the cause or the consequence of the death of the embryo is unsettled. It may be some innate morbid condition of the ovum, or some acquired defect. Dr. Hewitt thinks that the starting point of the abnormality is the death of the foetus rather than this latter is the result of the degeneration.

Leishman points out that the period within which degeneration of the chorion villi may originate does not extend probably beyond the tenth week, that being the period of greatest activity in the growth and multiplication of the villi. Later on when blood vessels have occupied the bulk of the villi this kind of degeneration seems incapable of formation. The probabilities therefore are in favor of the formation taking place in the first chorion or vitelline membrane.

Normally, only those villi that correspond to the placenta develop progressively; but if a pathological condition supervenes very early in pregnancy, they all proliferate and become hyperplastic. Abortion usually follows, but it may happen that the placenta develops normally, only a certain group of villi becoming hydatid. Usually, however, the affection is situated just at the placental site, though only a portion of the cotyledons may be affected.

In any case the affection begins as a multiplication of nuclei and cells.

Whether simple hyperplasia or a hydatid state results, it is very common to find the isolated vesiculated cells which Virchow has designated physaliphores. They are found in the epithelium as well as in the parenchyma of the villi, but they have no relation to the development of the vesicular mole. The morbid process corresponds to that described as the mucoid degeneration of cells. Virchow does not deny that some cells may disappear, or may undergo a fatty change, but they often persist in great num-

bers, and the principal accumulation is relatively large, the tissue becomes cystic in appearance. Where the fibrinous portions are in excess, a simple hyperplasia results.

Thus these tumors are formed. A villus whose normal diameter may be hardly half a line, may be dilated to half an inch or more. The larger they get the more characteristic they become of mucoid tissue. They become clear, transparent, and gelatiniform. They contain a ropy liquid which gives the reactions of mucin.

The vesicular appearance depends upon the delicacy of the liquid-filled tissue.

This development has nothing to do with the vessels, but if it occurs late in pregnancy, the vesicles may become the seat of an extremely rich capillary plexus. But vessels are usually absent, at least in eggs coming from the first month; and dropsy of the amnion and atrophy and death of the foetus occurs in consequence of the disease which cuts off the circulation (Charpentier). Hence, the different descriptions given by authors, and the three kinds of hydatid mole; they are only degrees of one and the same lesion, varying from a simple faulty conformation to complete destruction of the foetus and the cord.

The theories concerning the vesicular mole may be summed up as Duchamp says, in the following propositions: 1. The vesicular mole is entirely independent of pregnancy. 2. The vesicular mole increases under the influence of pregnancy, but is not due to a disease of the egg. 3. The vesicular mole is due to a change in the product of conception, from *a.* alteration of the vascular wall (Cruveilhier); *b.* alteration of the lymphatic vessels; *c.* dropsy of the chorinal villi (Robin, Cayla); *d.* Myxomatous degeneration (Virchow and the Gernans, Ercolani, Damaschino, Cornil, Ranvier, Hirtzmann, 1874, Josephson, 1879). Of these the theory of Virchow is the accepted one, for the following reasons: 1. The normal villus contains mucoid tissue; it is not astonishing that it should hypertrophy. 2. The vesicular fluid contains mucin. According to Gscheidlen, it is composed of chloride of sodium, 3.34, phosphoric acid, 0.74, albumin, 6.12, mucin, 2.94, salts, 6.25.

Cases are on record in which a repetition follow each other in the one case, Dr. McClintock mentioned this several years ago. Again in some cases a cotyledon of the placenta may undergo such a change and the child be born at maturity alive, but generally it is carried until labor and then delivered dead. Such cases are recorded by Hunter (*Lancet*, 1846, p. 434, vol. 1), Krueger, Virchow (*Krankhafte Geschwülste*, Bd. 1, p. 405), Martin, Conche et Totan, Breus, etc. Vesicular mole can also be carried at the same time with a healthy child, as a twin which is born alive (Viadel, Boivin, etc.), and again there may be extra- as well as intra-uterine moles, as well as double extra-uterine molar pregnancy described by Jakobson (U. H. f. G. u. f. Bb 13, p. 122).

Barnes relates a case in which the vesicular mole was so intimately connected with the walls of the uterus that the vesicles penetrated the wall even to the peritoneum.

Schröder refers to a case by Volkmann, and one

by Jarotsky and Waldeyer in which this occurred.

The vesicular mole belongs to a class of pathological products known as myxomata. (Virchow, Cornil, Ranvier, Malassez and de Sinéty, have demonstrated the identity of the vesicular mole with myxomata of other regions.

An analogous degeneration of the placenta has been described by Virchow and Hildebrandt as "fibrous myxoma" of the placenta. Schroeder quotes cases of "diffuse myxoma" of the placenta by Breslau, Eberth, Spaeth and Wedl.

A case of myxoma, or hyperplasia of the chorionic villi, is related by Dr. Sinclair, in Vol. 1, of the Publications of the Massachusetts Medical Society.

Different synonyms are: Hydatid, or vesicular mole; cystic degeneration of the chorion and placenta; dropsy of chorionic villi; myxoma of the placenta.

TIME OF THE FIRST HÆMORRHAGE AND ITS DURATION IN HYDATID GESTATION.

Names of Authors.	Time of 1st Hæmorrhage.	Time of Delivery.	Duration of Flow.
Dumauveau,	45 days	8 months	6½ months.
Mme. Boivin,	45 "	4 "	3½ "
Littre,	2 mos.	6 "	4 "
Crowfort,	3 "	7 "	4 "
Louville,	3 "	7 "	4 "
Percy,	3 "	8 "	5 "
Mme. Boivin,	3½ "	8 "	4½ "
Pichart,	4 "	4 "	
Millot,	4 "	4 "	
Delamotte,	5 "	5½ "	15 days.
Percy,	6 "	9 "	3 months.
Bremser,	7 "	8 "	1 "
Jolly,	8 "	10 "	2 "
Bandelocque,	11 "	11 "	
"	16 "	14 "	
Rosenthal,	6 "	7 "	1 "
"	"	4 "	
"	11 "	16 "	5 "

DURATION OF HYDATID GESTATION. OBSERVATION IN CASES.

Women delivered	at	months,	I case.
"	"	11 "	1 "
"	"	10 "	3 "
"	"	9 "	3 "
"	"	8 "	4 "
"	"	7 " 8 dys.	1 "
"	"	6 "	1 "
"	"	5½ "	5 "
"	"	4 "	2 "
"	"	3 "	3 "
"	"	3 "	4 "

Total, 28 Cases.

TREATMENT.—The treatment of all forms of molar pregnancies consists in the complete removal, whenever practical, of all the diseased tissue. The special treatment is of the hæmorrhage. General measures and expectant treatment if slight; tamponning if it be severe. The expulsion of a few vesicles during the pregnancy does not affect the treatment. It is a common thing to recommend oxytocics, preferably ergot, but if this fails to insure the expulsion of the mass, recourse must be had to other methods. We can scoop out all we can reach with our hands, this implies a dilated or dilatable os, and it will be fortunate if we meet with this. If not, dilatation will

be necessary, either by the finger or by means of tents, or Barnes' bags. A very useful contrivance used in the removal of the fleshy mole is the Beecher forceps, termed by him a "New Abortion and Placenta Forceps." A description can be found in the *Medical News*, 1883, xlii, 259. The advantages are: It is adapted to the removal of the fœtus in abortion, and the placenta, moles, etc., taking hold of a larger portion at a time without in the least imperilling the mother's parts. Besides what may be caught in the jaws, if any portion of the mass extend beyond and between the blades behind the shoulders, they are also held without being crushed through, as would be the case in the Bond instrument, with its closely approximate blades; and greater purchase is given upon the mass. The fenestrum allows a protrusion through it, and prevents the crushing through the placenta without the ability to remove a portion of the mass other than in shreds. It can also be used as a dilator.

In some cases the moles adhere to the uterine wall as firmly as a placenta glued by fibrinous deposits. In such cases a curette is necessary. If the diseased tissues be not removed entirely the portions remaining may give rise to grave and exhausting discharges or the recurrence as before mentioned.

It is also important to remember in this connection that twin pregnancies may occur in which vesicular degeneration affects the membranes of but one ovum. It is well, therefore, to bear in mind the possibility of this, and that the sound ovum may develop to full development.

Even after evacuating the uterus there may be a good deal of hæmorrhage. If so, repeat ergot, use abdominal pressure, and give iced drinks, etc. The slow convalescence may be hastened with iron, nux, quinine, nutritious food, wines, etc., as the case may indicate.

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PEROXIDE OF HYDROGEN AS A REMEDIAL AGENT.

Read before the St. Louis Medical Society, February 4, 1888.

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I am aware that there is a disposition upon the part of some workers in the profession to decry the merits of those whose efforts tend in the direction of therapeutic investigation, and the application of remedies to the relief of disease, the rather appreciating pathological research and the study of the phenomena of disease.

Fully recognizing the importance of closely and carefully scrutinizing the anatomical, physiological and pathological panorama that may be presented to our view, I cannot refrain from suggesting that after all the main object to be attained is the relief of suffering and the prolongation and saving of human life. The most profound pathologist would be powerless for good did he not have as an ally the delver among drugs searching for the means of mastering the microbes which he has discovered, and the studious, thoughtful practical physician, accomplishes