ders have not fully apprehended the drift and purpose of the argument developed in the preceding pages, in consequence of not having seen the series of papers on the same subject, which I published in the *Lancet* in 1856-58-59, it may be well to state that in that series will be found data which, to myself, appear to establish by the most strict and severe induction from incontrovertible facts, the following conclusions.

1. That typhoid or intestinal fever is essentially contagious.

2. That the living body of the infected man is the soil in which the poison breeds and multiplies.

3. That the reproduction of the poison in the infected body, and the disturbance attaching to it, constitute the fever.

4. That this reproduction is the same in kind as that of which we have, in small-pox, ocular demonstration.

5. That the intestinal affection is the specific eruption of the fever, and is related to it in the same way in which the pustules on the skin in small-pox are related to that disease.

6. That the exuviae from the surface which is the seat of this eruption contain, as we should have expected, the most virulent part of the contagious principle.

7. That, as a necessary result, sewers, and the cloacæ which fill the office of sewer, are the principal media for the transmission of the contagion; and, consequently, that in many instances the infected sewer, and not the infected man, appears as if it were the primary source of the specific poison.

8. That, once cast off by the intestine, the contagious matter may communicate the fever to other persons in two principal ways: either by contaminating the drinking water; or, which is by far the more common case, by infecting the air.

In a future paper, I hope to complete the proof, by adducing evidence to show that by treating the intestinal discharges by proper disinfectants, the spread of the fever may be greatly limited, and, in most instances, altogether prevented.

APOTHECARIES' HALL. The next Examination in Arts previous to registration as a student under the new regulations will be held on Friday, the 24th, and Saturday, the 25th January. The examination will be partly written and partly *viva voce*. The subjects of examination will be:—1. English history (more particularly of the Tudor period), and the structure and grammar of the English language. 2. Mathematics (viz, the ordinary rules of arithmetic, vulgar and decimal fractions, addition, subtraction, multiplication, and division of algebraical quantities, simple equations, and the first book of Euclid); and natural philosophy. 3. The Latin language (Cæsar, *De Bello Gallico*, Books I and II). Thus far the examination is compulsory; but the candidates may, at their own option, be examined also in (4) the Greek language (Xenophon, *Memorabilia*, and grammatical questions); and, (5) Logic (the introduction, the first book, and to the end of chapter iii in the second book, of Whately's *Elements of Logic*). Proficiency in the whole of the five branches will entitle the candidate to a certificate of special proficiency.

LEGACIES. The late Lord Herbert, of Lea, has left £300 to the Salisbury Infirmary. The late Mr. Capel Hanbury Leigh, of Pontypool Park, has bequeathed to the Swansea Infirmary £500; to the Bristol Royal Infirmary £500; and to the Bristol Eye Infirmary £200.

Lectures

ON THE

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN.

DELIVERED AT ST. MARY'S HOSPITAL MEDICAL SCHOOL.

BY

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SUBSTANCES EXPELLED FROM THE GENERATIVE PASSAGES: THEIR NATURE AND DIAGNOSTIC SIGNIFICANCE.

GENTLEMEN,—The class of "data for diagnosis" to which I now direct your attention are derived from the inspection of those bodies, solid or otherwise, submitted or obtained for examination, and reported to have been expelled or removed from the female generative passages. Questions regarding the presence of pregnancy, as to the possibility of impregnation having occurred, as to whether the patient has been recently delivered, etc., may have to be answered; the data for forming a conclusion thereon being those only derivable from inspection of certain substances submitted to us. Uncertain as our diagnosis too frequently is from want of reliable information, it is extremely important when, as in the case before us, we have *substantial* data to go upon, that we should be able to make the most of those data. An accurate conclusion respecting the nature of these bodies is often very necessary; for upon it depend very frequently determinations as to the condition of the patient, and as to the nature of the affection present, of the most momentous character. An erroneous and hasty opinion as to the nature of a particular body submitted for examination may involve loss of reputation to the patient, and no less loss of confidence in the practitioner.

One preliminary caution. An "off-hand" opinion ought never to be given respecting the nature of any substance said to have been expelled from the generative passages. A careful examination of the case should always precede a conclusion as to its nature. It need hardly be observed that an intimate practical knowledge of the normal *anatomy* of the ovum, and a familiarity with its outward appearance, are absolutely essential.

From a variety of circumstances, the substances in question are frequently difficult of recognition; and it is always expedient to place them in water for twenty-four hours, or even longer, at the end of which time they may be in a much more satisfactory state for examination. The importance of adopting this precaution in the examination of cases of suspected abortion it is impossible to over-estimate. What appears on a cursory inspection to be a homogeneous fleshy mass may, after having been soaked for some hours in water, present a most elaborate structure. Great care must be exercised in receiving the statements of patients as to the nature of any particular substance which may have been expelled. Many are desirous of receiving and

giving erroneous impressions; but a much larger class are incapable of describing accurately what they do see. Ocular inspection of the specimen by the practitioner himself, and under the favourable circumstances just alluded to, is absolutely necessary, if the diagnosis is to be anything beyond conjecture.

In the very practical and valuable work of Dr. Montgomery, the substances which may be expelled from the generative passages are enumerated as follows:—"1, an early ovum; 2, a mole; 3, uterine hydatids; 4, the membrane produced in dysmenorrhœa or other conditions of uterine derangement; 5, membranous formations from the vagina." This does not, however, include all the substances which may present themselves to be examined and reported on; and the arrangement here adopted will be somewhat different from that of the author just alluded to.

A. In the first place, we shall consider those substances expelled or removed from the generative passages more or less resembling *flesh* in their outward form and appearance. By the term "flesh", or "fleshy" masses, they would be popularly designated; and it is therefore useful practically to group them together.

Now the "fleshy" substances may be found, on examination, to be composed of—1, an ovum cast off at an early period of its growth, or arrested in its development, and retained in the uterus, constituting what is popularly known as a *mole*; 2, the placenta, or a portion thereof, retained for a time, and subsequently expelled; 3, polypus of the uterus spontaneously detached and expelled; 4, fibrous tumours of the uterus similarly separated; or, 5, coagula of blood.

1. Is the substance examined an *early ovum*? In order to answer this question satisfactorily, the observer must be acquainted with the structure of the ovum at an early period, and be able to recognise its several parts. If any part of the body or members of the fœtus be found in the mass expelled, there can, of course, be no doubt in the matter; we have to do with an abortion. When no part or parts of an embryo are to be found, we are obliged to search for other marks by which we may recognise the product in question as the result of conception. We proceed to search for one of the following structures: the decidua materna, or external envelope of the ovum; the decidua reflexa, internal to the latter; the chorionic villi; the umbilical cord; etc.

After soaking the specimen in water, it should be carefully examined in that fluid, a blunt probe and forceps only being at first used in manipulating. In ova which come away *en masse* (a rather rare occurrence) during the first three months or so of pregnancy, the external covering will be the *decidua materna*; and this membrane is recognised by its ragged, uneven appearance under water, by the presence of those bodies described first by Dr. Montgomery as "decidual cotyledons" on the external surface, by its pyriform shape, and by the fact that there are three openings—two superiorly, corresponding to the Fallopian tubes; and one inferiorly (which latter may, however, be closed), corresponding with the neck of the uterus. The decidua is further characterised by the smooth and velvety appearance of that surface of it which is internal; and by the fact that on this surface many minute openings are

visible, giving the membranes a cribriform look. After the fourth month, this decidua is found thinner, and some of the characters just alluded to less marked. This decidua may come away by itself, torn or separated from the ovum, or filled with the degenerated structures of the ovum.

The *decidua reflexa* is a fibrous membrane, thinner than the decidua materna; and it encloses the ovum proper in great part. The most characteristic structure of the ovum is, however, the *chorion membrane*, and the *villi* which proceed from its external surface. The early ovum, separated from the decidual coverings, is a closed bag covered by little delicate processes, the villi of the chorion, giving to it a shaggy appearance. In a very early ovum, the villi are small and simple; but in a more advanced ovum—of two months, for example—each original villus has given off branches arranged on it somewhat like the roots of a tree. Later still, these villi are longer, and they are then found on *one side only* of the ovum; those on the other side, not participating in the development described, shrink and disappear for the most part. The presence of chorion villi may be considered quite conclusive as to the fact of impregnation and previous conception, whether the embryo be found or not; but it is a question whether the same degree of diagnostic value attaches to the presence of the decidua materna; for it is an established fact that a *membrane* may be expelled from the uterus quite independently of conception, and possessing many of the characters of the decidua as above described. The difference between the two is that, in the decidua resulting from pregnancy, the decidual cotyledons are present; but not in the other. Such, at least, is the distinction at present recognised.

If a small sac were found, having attached at a point of its internal surface the remains of the umbilical cord, this would be conclusive on the question of impregnation. In the case of early ova expelled from the uterus, one of several results may be observed. The ovum enveloped in the decidua may come away entire; the decidua may remain behind for a time; and the chorion membrane, covered by its villi, and enclosing the embryo, be expelled by itself. The chorion and amnion may remain *in utero*, as well as the decidua; the embryo escaping from the uterus. In such a case, the membranes, fœtal and maternal, would be subsequently expelled.

Moles. The various substances known under the designation of moles, and which are the products of conception,* are for the most part the result of arrest of development, which may coexist with continuance of growth, of some portion of the ovum. The "fleshy mole", as it is termed, consists of an ovum between the membranes of which blood has been effused. The blood effused has coagulated, and the result is a mass, the parts of which are glued together and separated with difficulty. The villi of the chorion must be carefully sought for; and they ought in all cases to be found where there is no reason for suspecting that the ovum, with its chorionic investment, has previously escaped. The presence of organised membranes and chorion villi distinguishes the "fleshy mole" from simple clots of blood, and from other substances to be presently

* It seems proper to confine the use of the term "mole" to the products of conception alone.

alluded to more particularly. It must be recollected that the chorion villi do not become developed so as to constitute what may be called the placenta, until about the fourth month of gestation. It is difficult to imagine that a fetus which has lived until the placenta has been formed could undergo a process of complete absorption; but there are very numerous cases on record to show that degrees of development of the chorion villi short of the production of a placenta frequently coexist with entire absence of the embryo, which in such cases perishes at so early a period that its size is very inconsiderable, and it escapes detection.

There is another kind of true mole, the "hydatidiform" or "vesicular" mole, the description of which will come presently.

2. *The Placenta.* The fleshy mass expelled may be a part or the whole of a "placenta". When a woman has been delivered at or near the full time, and no placenta has come away, a fleshy-looking mass expelled a week or two after would in all probability be the placenta; and in such a case the signs of previous delivery would be present, the history of pregnancy, etc. The size, shape, etc., of the mass, and the presence of the umbilical cord, would externally indicate it to be the placenta. The expulsion of a retained placenta is, at least when the retention has existed for some time, usually preceded by an offensive discharge; but the placenta has occasionally been discharged apparently fresh, and without signs of decomposition.

Such cases are rarely open to much chance of misconception; but the nature of the case is not so obvious when the fetus has been expelled at an earlier period of gestation. In cases of abortion at the fourth or fifth month, the placenta may be retained for some time, its removal having been neglected or escaped attention at first. Cases are on record which show that the placenta may be retained within the uterus after abortion, for months and even years. An instance in point is quoted by Montgomery from Morgagni. (See Montgomery, *op. cit.*, p. 259.) More than one case of the kind has indeed come under my own observation. Meanwhile, its presence in the uterus has occasioned generally severe hæmorrhages. An early placenta would be of about the size of a pigeon's egg; later, it would be larger. If recognised as a placenta, it would indicate a previous conception. The substances which might be mistaken for a placenta are, a fibrous tumour spontaneously expelled, or a fibrous polypus similarly removed; and in both cases the symptoms, hæmorrhages, etc., might be somewhat alike. The structure of the fleshy mass must then be carefully examined, to settle the point, if evidence as to previous pregnancy be wanting, or if that which is obtainable be open to suspicion. An early placenta is rounded, curved on one side, and smooth on the other. The presence of the umbilical cord attached to one side of it would be conclusive; but this might be worn away or torn off close to the placenta. A section of the mass would, however, show vessels arranged in a peculiar manner, radiating from the centre of one surface.

3 and 4. *Fibrous polypi* of the uterus and *fibroid tumours* are sometimes expelled spontaneously from the uterus. Externally, these bodies might be easily confounded with a placenta, the more especially as the preceding hæmorrhages might be considered evi-

dence of abortion having occurred. Polypus of the uterus and fibroid tumours frequently produce abortion; and in certain cases abortion may occur in the first place, and the expulsion of the polypus which gave rise to the abortion in the second. This sequence happened, as I had reason to know, in a case under the care of a gentleman in the country; and the polypus which came away was considered, until after it had been more carefully examined, to be the placenta. The structure of a polypus or of a fibrous tumour differs widely from that of the placenta, the former presenting a fibrous texture, generally dense, and sometimes very firm; but now and then, in the case of a polypus, more spongy and loose. The insertion of the umbilical cord would be, of course, wanting. Fibrous tumours of the uterus spontaneously expelled may be found to have become altered, degenerated into a *fatty mass*, as in a case related by myself in the *Transactions* of the Pathological Society, vol. xi, p. 173; or solidified by *calcareous matter*. Generally we find a previous history of "frequent and severe hæmorrhages" when these uterine outgrowths have been expelled. The spontaneous expulsion here alluded to is not a frequent termination of their history.

5. *Coagula of blood* (blood-polypi, Kiwisch) retained within the uterus for some time, and expelled subsequently in a more or less firm condition, require to be discriminated from the bodies hitherto alluded to. Coagula may form within the uterine cavity in connexion with uterine hæmorrhage of all kinds; after labour, in consequence of the presence of polypi, cancer of the uterus, profuse menstruation, etc. The uterine cavity is not, as a rule, very tolerant of the presence of clots; and for this reason they do not generally remain there sufficiently long to have become firm and dense. They are frequently, as Scanzoni remarks, connected with previous abortions. When the coagula are tolerably recent, they are easily broken down under pressure, or after soaking in water. Fibrous organised bodies are not to be broken up in this manner. When polypi of the uterus are present, coagula sometimes come away having a circular form like segments of rings. The polypus at the same time excites hæmorrhage, and prevents the escape of the blood; and the rings in question are thus formed. Coagula not recent may present a tolerably firm, dense, greyish, fibrinous-looking surface. The want of organisation in the mass, the presence of blood-corpuscles, would assist in the diagnosis of the nature of the substance. The centre of the mass, moreover, generally exhibits a clot of a darker colour, comparatively unaltered, which was the original nucleus of the formation.

B. *Bodies more or less resembling "skin"* may be conveniently considered together under the designation of *membranous formations*. The skin-like substances in question may have their origin in the vagina or in the uterus.

1. *Exfoliations from the Vagina.* Under certain circumstances, the lining membrane of the vagina separates in the form of thin translucent flakes, which sometimes come away in great quantities. Dr. Tyler Smith designates that condition of the vagina present in such cases as "epithelial vaginitis". The flakes in question are composed of the scaly epithelium of the vagina, and under the microscope exhibit the well-known appearances of this form of epithelium. It is necessary to place them in water,

in order to render obvious the characters of these exfoliated products.

2. The *dysmenorrhœal membrane*, as it has been called, but concerning the real nature of which the amount of our present knowledge is by no means satisfactory, is described as an exfoliation of the lining membrane of uterus—a sort of skin occasionally expelled from the uterus, independently of conception, after a catamenial period, exhibiting a certain degree of resemblance to the decidua lining the uterus during pregnancy. The best observers for the most part agree in stating that this membrane is neither more nor less than the mucous membrane of the uterine cavity, hypertrophied and cast off. The formation of the membrane is supposed to be connected with the catamenial nîsus; and it has been called the dysmenorrhœal membrane, on account of its association with those varieties of uterine pain known under the name of dysmenorrhœa. The membrane in question is smooth internally, rough and slightly flocculent externally. When thrown off in a single piece, it presents three apertures corresponding to the apertures communicating with the uterine cavity, and is of a pyramidal shape. It is generally expelled towards the end of the catamenial flow, which, as a rule, is more profuse than usual. It is unlike the products of vaginal exfoliations just alluded to, in being thicker. The distinction of this dysmenorrhœal membrane from the decidua of an early ovum might, under certain circumstances, be difficult, as already stated; viz., when the supposed decidua is unaccompanied by any part of the chorionic structure. The concomitant circumstances will assist in the diagnosis: thus the “dysmenorrhœal membrane” is not expelled at one catamenial period alone, but on successive occasions; whereas, in the case of an abortion, the same thing is not likely to recur, or, at all events, with the same marked periodicity.

3. *The Covering of the Early Ovum.* Portions of the decidua uterina, the decidua reflexa, the chorionic sac, etc., may come away in the form of membranous substances. It is unnecessary here to repeat what has been already stated as to the diagnosis of the nature of these bodies.

C. *Vesicular Bodies.* Little bladder-like substances, single or connected in series like beads, may be expelled from the uterus. These bodies were formerly considered to be hydatids of the uterus. They really result from certain alterations of the chorion villi, and they are always the result of conception. The embryo perishes at an early period, and the chorion villi continuing connected with the uterus maintain a slow growth, the *development* being arrested. The vesicular-like bodies are thus the result of dropsical swelling of the chorion villi. It appears that the period of pregnancy during which the chorion villi may take on this peculiar form of degenerative growth is limited, probably not later than the middle or end of the third month. If the embryo perish after the chorion villi have become pretty intimately connected with the decidua serotina, but before the placenta has become formed, while the villi are allowed still to retain a certain degree of connexion with the uterus, they may continue to grow; but *development* is arrested, and the bladder-like bodies are the result.*

With the presence of the vesicular mole watery discharges are occasionally associated. The hydatidiform mole may attain a considerable size, remain several months in the uterus, a few of the bladders from time to time breaking and discharging fluid from the os uteri; and the mass may come away altogether, or clusters of the vesicles may be expelled at intervals.

Connected with this subject is an important practical question, which I have in another place thus attempted to answer; viz.: “*Can a portion of retained placenta take on the hydatidiform change?*” The placenta belonging to a mature fœtus cannot, if healthy at the period of the birth of the child, become the seat of the hydatidiform change, the chorion villi having long since disappeared and become converted into blood-vessels. The only circumstances under which hydatidiform bodies might be subsequently expelled from the uterus, and give rise to the supposition that they arose from degeneration of a retained placenta, are, as I believe, the following. Firstly, in cases of double conception; when, one embryo having perished at an early period, the membranes thereto belonging have undergone the hydatidiform degeneration, and are not expelled from the uterus, together with the normal placenta. In illustration of this position, a case may be referred to which was published in the *Lancet* for 1846, vol. i, p. 430, in which a hydatidiform mass (in bulk about three pints) was expelled *together with a normal placenta*. In this case, it is most probable that there was a double conception; and if the remains of the diseased ovum had not been expelled *with the normal placenta*, but some weeks or months subsequently, the case would have come under the above category. A second possible case is, that a portion of the chorion villi may become separated organically from the fœtus at an early period, and undergo the hydatidiform degeneration; whilst the remainder grow and nourish the fœtus up to the full time. . . . If the diseased portion were retained in the uterus, the supposition before alluded to might arise.” (*Obs. Trans.*, vol. i, p. 263.)

True hydatids may in very rare instances be expelled from the generative passages. They probably originate in the abdomen, bursting into this cavity from the liver; and they may possibly penetrate through the uterus, or into the vagina. True hydatids are closed sacs one within another; while the vesicular bodies resulting from chorionic transformation are arranged in a series like beads on a string with slender peduncles or intervening connecting portions. The well-known “hooklets” are usually found when the cysts are really of hydatid origin. I have met with a case in which death took place; several hydatid cysts were found in the abdomen, the pelvis, etc.; and, had life been prolonged, some of these might have burst into the vagina or uterus. In the case in question, the patient was a young unmarried woman.

D. *Facitious Bodies.* Lastly, the observer must be cautioned as to the occurrence of cases in which, for a variety of reasons, women exhibit substances which they are desirous of leading the practitioner to believe have been expelled from the vagina. The careful examination of the bodies in question is, or should be, sufficient always to detect the fraud.

* For a more complete account of the arguments which are to be adduced in favour of the explanation of the formation of these vesicular bodies, than is here given, I would refer to my papers on the

subject in vols. i and ii of the *Transactions of the Obstetrical Society of London*.