

## Clinical Lecture

ON THE

## SIGNIFICANCE OF UTERINE AND VAGINAL DISCHARGES.

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We have ranked discharges amongst the most pressing indications for instituting local exploration. In health it may be said that, excepting the monthly discharge of menstruation, there is no escape of fluid from the vagina. It is true that in some women leucorrhœa to a moderate extent precedes and follows the menstrual sanguineous flow; it is also true that, in some, leucorrhœa continues throughout the intermenstrual period without in any obvious way entailing local or constitutional distress. Admitting this, the rational and safe rule in practice still is, to examine in all cases where a discharge at all copious escapes from the vagina attended by pain and signs of constitutional impairment. This may be stated as a general proposition without distinction as to the nature of the discharge. But we will now examine what the discharges are, and what is the special significance of each. And, in *limine*, let us agree upon the meaning to attach to two words which we shall frequently have occasion to use. "Secretion" and "excretion" must be accurately applied. Following continental custom, I shall use the word "secretion" to distinguish the act of separation of the discharge from the free surface of the organs; and the word "excretion" to distinguish the act of voiding from the body altogether. To take an example: the menstrual fluid may be poured out from the mucous surface of the Fallopian tubes and uterus—that is secretion. The escape of the fluid by the vulva is excretion. Excretion is the natural complement of secretion. But the process may stop short at secretion—that is, the secreted fluid may be retained. Thus, if there be occlusion of the genital canal at any point below the os uteri internum, the secreted menstrual fluid will be shut up in the cavity of the uterus and in the Fallopian tubes. There is no excretion, and therefore, apparently, no discharge.

Taking the discharges as they first come under the notice of the clinical observer, that is, after their excretion, they may be roughly classed under the following heads:—1. Sanguineous. 2. Mucous. 3. Purulent. 4. Watery. 5. Membranous. 6. Solid or fleshy. 7. In the case of fistulous openings into the bladder or rectum, urine or feces may escape. 8. Then there are foreign matters, fluid or solid, which find their way into the uterus and vagina from without. Amongst these may be mentioned semen distinguished by spermatozoa.

If we limited our inquiry to the examination of these discharges when excreted, we should hardly attain to any more precise knowledge than is expressed in the general terms by which we have designated them. We cannot arrive at a certain knowledge of their source, or form a trustworthy estimate of their pathological significance, unless we examine minutely the organs from which they are secreted.

I may state another proposition: almost all the diseases of the uterus and vagina are attended by discharges.

Of all the discharges, the only one which can be called strictly normal is blood; and this is only normal within certain conditions of circumstance, time, and quantity. Previous histological study will lend the most material aid to direct observation in determining the sources and significance of discharges. We may start from the proposition that, with one or two rare exceptions, all the discharges we have to deal with come from mucous membrane, or at least from organs normally clothed by mucous membrane. The discharges will generally bring with them some of the distinctive elements of the part of the mucous tract from which they are secreted. Hence microscopical examination of a discharge will almost always reveal epithelium-cells which tell their own tale as to the region they come from. In this way we can distinguish uterine mucus from vaginal.

The whole genital tract secretes mucus. It is only when excessive in quantity, or altered in quality, that the secretion of mucus acquires a pathological significance.

The natural mucous secretions are:—

1. A whitish mucus from the Fallopian tubes and cavity of the uterus proper. This probably comes principally from the uterine glands. It has an alkaline reaction. It is distinguished under the microscope by the presence in it of columnar ciliated epithelium-cells. In health this secretion is moderate in quantity, and attracts no attention. But in the condition known as uterine catarrh, it is very abundant, sometimes, especially in aged women, accumulating in the uterine cavity, and causing colic pains to expel it. The uterine mucous membrane may also be stimulated to excessive secretion by gonorrhœal infection spreading from the vagina.

2. A transparent viscid mucus in the cervix uteri. This is also alkaline. It consists chiefly of mucous corpuscles, caudate corpuscles, minute oil-globules, and occasionally dentated epithelium, all entangled in a thick tenacious plasma. In health this secretion is rarely formed in such excess as to appear externally, but it is almost always found in the cervix filling up the canal. The mucous plug thus formed is washed away at each menstrual flow; it exists generally throughout pregnancy. Its uses are probably to shut off the uterine cavity, so as to protect it from external agencies, and to form a suitable medium for the passage of the spermatozoa. At the beginning of labour this secretion is formed in increased copiousness, and serves to lubricate the passages, and to facilitate their dilatation. In certain morbid conditions the cervical glandular structure also acquires extraordinary activity, and then the proper cervical mucus assumes the character of a discharge. It is poured in large quantity into the vagina, so freely, indeed, as to be a serious drain upon the system, and a source of weakness. It constitutes the most frequent form of so-called "whites" or leucorrhœa. If the speculum be used, it may be seen issuing from the os uteri as a glairy, albuminous fluid, resembling unboiled white of egg. This exaggerated secretion is almost always the consequence of inflammation, more or less acute, of the cervical canal—endocervicitis, or of a condition analogous to catarrh of the bronchial or intestinal mucous membrane.

3. A mucus consisting of plasma, not viscid, but containing multitudes of scaly epithelium-cells. This comes mainly from the external surface of the cervix uteri, labia uteri, and the fundus of the vagina. It is of acid reaction. The proportion of epithelial cells to that of the fluid plasma varies considerably. In some cases the fluid part is so scanty that the secretion adheres to the mucous membrane, covering the os uteri as with flakes, or a layer of opaque yellowish-white friable membranous-looking substance, simulating and suggesting diphtheria. Under the microscope this is found to consist almost entirely of scaly epithelium and oil-globules. In other cases, the plasma being a little more abundant, the secretion looks like cream or pus. But in these cases the microscope reveals the same constituents—namely, scales of epithelium. These forms of secretion depend upon chronic or subacute inflammation of the mucous membrane—vaginitis, not necessarily accompanied with abrasion or ulceration. The puriform mucus, more or less opaque and viscid, varying in tinge from creamy-white to yellowish or light green, is often due to gonorrhœal infection, or to suppuration from surfaces denuded of epithelium and granulating. When due to gonorrhœal infection, the mucous membrane from os uteri to vulva is swollen, angry-red, and painful, and the meatus urinarius partakes of the same character. The creamy form of secretion is frequently found during pregnancy on the vaginal portion of the uterus. It is the result of the active throwing off of squamous epithelium due to hyperæmia.

4. The remaining or lower tract of the vagina secretes an acid mucus. Under morbid states this sometimes contains pus-globules, an infusorium, the *Trichomonas vaginalis* of Donné, and a fungus, the *Leptothryx buccalis* of Robin. But these parasites are really mainly due to neglect of cleanliness. Whitehead suggests that the use of the acid of the vaginal mucus is to prevent the coagulation of the catamenial fluid in the vagina. It certainly seems to possess the property of coagulating the alkaline mucus coming from the cervix. I doubt the correctness of Whitehead's theory. It is important that the blood should



not coagulate in the uterus, because clots there cause severe pain and congestion, and are apt to keep up hæmorrhage; but a clot in the vagina is of little consequence. Pus stops coagulation; so does mucus provided the proportion of blood is small. I believe it is the normal mucus which maintains fluidity. Whenever the proportion of blood is greatly in excess it is apt to coagulate.

5. There is a clear viscid secretion from Bartholini's glands, which is discharged in jets during copulation. It has been seen to escape on irritation, expelled by the action of the muscular fibres in the ducts. It is also poured out freely during labour, serving to lubricate the vulva.

6. The small sebaceous and mucous glands of the vulva and labia majora secrete an oily mucus serving for lubrication. This is sometimes increased in quantity, becoming puriform.

We may here refer very briefly to one or two other points connected with mucous discharges. Donné says when the acidity of the vaginal mucus, or the alkalinity of the uterine secretion, is morbidly exaggerated, the spermatozoa are killed. Hence one explanation of the frequency of sterility when there is inflammatory disease of these parts; and of the recurrence of pregnancy when the disease which gives rise to the morbid secretions is cured.

Many years ago\* I made the observation that acute exanthemata, as small-pox and scarlatina, which we know affect the whole mucous tract as well as the skin, occasionally left, as sequelæ, vaginitis and leucorrhœa even in children. Graves, Scanzoni, and others have confirmed this observation.

There is a form of leucorrhœa not uncommon in scrofulous children. In such subjects all the mucous membranes are apt to be excessively developed and active. The discharge is chiefly, if not entirely, vaginal and vulval. It is important to bear in mind these sources of leucorrhœa in children, lest we fall into unfounded suspicions that may be suggested to us by others.

Many discharges which to the naked eye cannot be distinguished from pus are really mucous. The microscope discriminates them easily. The distinction is important, because it is generally true that the unbroken mucous membrane of the genital tract does not yield pus. When true pus appears, it is therefore mostly an indication of erosion, ulceration, or abscess. As Virchow has pointed out, all mucous membranes with cylinder-epithelium are little disposed to form pus. The matter which is produced is found on accurate examination to be only epithelium, though it may have a thoroughly purulent appearance. The intestinal mucous membrane rarely produces pus without ulceration. The mucous membrane of the uterine tubes, which is often covered with a thick mass of entirely puriform appearance, shows almost always only epithelial elements.

On other mucous membranes—the urethra, for example—we observe copious discharges of pus without the least ulceration.

*The Purulent Discharges.*—We have seen that some purulent-looking discharges are in reality mucous, the appearance being due to epithelium-cells, not to pus-globules. When pus-globules in large proportion are found, they indicate generally a breach of continuity of the mucous surface—that is, a granulating or ulcerated surface. When pus escapes in quantities, suddenly at intervals, and sometimes by continuous draining, the source probably is an abscess whose seat is outside the uterus or vagina, as in what is called pelvic cellulitis, opening into the vagina. In such a case examination by touch internally, and externally in the iliac regions, will reveal the extra-uterine disease. The uterus will be felt set fast by surrounding firm plastic effusion. The os uteri will generally be found in the centre of the pelvis, low down, or inclined to one side, if the pelvic peritonitis is chiefly unilateral. This position of the os uteri distinguishes pelvic peritonitis from retro-uterine hæmatocele, which pushes the os uteri forwards, close behind, and sometimes above, the symphysis pubis, and which may also be attended by suppuration.

I have now under my care a case in which pus is voided by the vagina, the origin of which is an abscess in the left hypochondriac region opening into the intestine, and which at a lower part has formed a fistulous communication with the vagina. You thus see how numerous and strange are

the sources of pus in the vagina, and that a purulent discharge is no sure evidence of disease of the uterus or vagina. Your exploration must extend beyond these organs.

The watery, sanguineous, membranous, "fleshy," and other discharges we shall study on ensuing meetings.

\* Medical Gazette, 1850.