method is to remove as much of the diseased mass as is deemed prudent, with either the *scraper* or the curette, or both combined, and then to apply either the liquor ferri perchloridi fortior, the persulphate of iron, or the actual cautery.

Much may be done in these distressing cases to postpone the evil day, and lessen the amount of suffering consequent upon the exhaustion from repeated hæmorrhages, by timely assistance. It is no reason why the patient should be left to die miserably, unrelieved by art, because the nature of the malady has been recognised to be one which at present baffles our efforts to cure it, unless complete extirpation of the uterus, by abdominal or vaginal incision, can be regarded as a cure.

Mr. MORRIS and Dr. THOMAS DUTTON (Sidlesham) remarked on the possibility of vaginal examinations in the unmarried becoming too frequent, and spoke of the difficulties that stood in the way of younger practitioners in dealing with uterine cases.

Dr. ROUTH (London) thought that perhaps country practitioners were too chary of examining their cases. Of course, promiscuous examination was wrong. But, in his experience, many ladies, married and unmarried, came to town with uterine disease, declaring that they had suffered for years, and had found their medical attendants unwilling to make an examination. He had not unfrequently met with polypus or epithelioma, which might have been prevented or cured had an earlier examination been made.

Dr. WALLACE (Liverpool) said his experience was not in accordance with Dr. Routh's. The patients who consulted him (Dr. Wallace) had almost invariably been examined, and their cases diagnosed, by their own medical attendants. He considered that, when an examination was called for, it was by no means a good plan to ask permission; permission should be taken for granted.

Dr. EDIS, in reply, stated that, practically, it would be found that very few cases of severe menorrhagia occurred in young girls, and therefore the question of submitting them to examination was seldom presented; but, where menorrhagia persisted, in spite of all ordinary remedies, the fact of a patient being single should not deter us from ascertaining the nature of the disorder. If menorrhagia were regarded, not as a disease, but as merely a symptom, and the exciting cause of this were carefully investigated, we should more frequently succeed in arresting hæmorrhage.

ON THE ETIOLOGY AND TREATMENT OF A CERTAIN FORM OF ENDOMETRITIS,

ACCOMPANIED WITH VERY TENACIOUS LEUCORRHOEA.

Read in the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Worcester, August, 1882.

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THERE is a variety of dysmenorrhœa which we occasionally meet with, and which is very difficult of cure. I allude to that form where, in addition to the pains about the uterine organs, to be hereafter more fully defined, there is a thick muco-purulent discharge, so sticky, that it is often wellnigh impossible to remove it.

The general symptoms of this affection resemble in many respects those I detailed in a paper read before the Obstetrical Society of London (*Transactions*, vol. xii, 136), on Fundal Endometritis, and vary according to the part of the uterus affected. To recapitulate a few particulars. First, the pain felt varies greatly; it is sometimes trifling, general uneasiness being the chief complaint, with the knowledge of the daily passage of more or less leucorrhœal discharge, which becomes yellow on the linen. More frequently, however, there is a marked feeling of weight in the uterus with bearing down; and the symptoms are greatly aggravated at the menstrual period, when colicky uterine pains are superadded. These, beginning in the back, run downwards towards the region of the round ligaments, and outside one, generally the left, or both thighs, coming on in paroxysms more or less severe. It has been stated that in such cases there is no rise of temperature, even although the pain has been excruciating, leaving no trace when once the cause has been removed. This, I am satisfied, is an error. If the temperature be taken in the axilla, it is true there is seldom any rise of temperature. If, however, it be taken in the vagina, it will be found raised sometimes to 103°. This, however, is by no means an exceptional case. In most, if not all, women during menstruation the temperature rises in the vagina.

To what is this particular discharge due? First, I believe, in most cases, it is essentially the result of gonorrhœa communicated during

the first few days of married life, whether by a gonorrhœa proper or a gleet. At least, in questioning many women, they always referred its occurrence to marriage; and in not a few of these cases, when I have been able to examine the husband also, I have found gleet. Yet, even here, I have observed what appears to contradict this view. I have found gleet present in a husband, and no sticky discharge in the wife.

If we closely question the wife, however, in these cases, we often are enabled to learn that soon after marriage, indeed within the first week, some acute symptoms supervened; abdominal pain low down, over both ovaries, especially the left, and in the groin, with more or less feverish excitement. In one case, I believe, peritonitis was the immediate result, which proved rapidly fatal. In another case, the peritonitis was more limited, and recovery occurred. Now, in both these cases the wives were believed in the first instance to be healthy; but both husbands were affected with acute gonorrhœa. The opinions of Noeggerath, and his belief that catarrh of the Fallopian tubes plays a part in the occurrence of perimetritis, and even peritonitis, have been widely made known. By most gynecologists, they have been said to be extravagant. Attention has also been called lately to this etiology by Dr. Edis. I must say, for myself, that, while I cannot go quite to the length of Noeggerath's opinions, I am quite sure that the chronic form of tenacious uterine leucorrhœa with dysmenorrhœa, of which I am now speaking, is due to gonorrhœa in most cases. In a few more cases, it is due to intense vaginitis in the virgin, which acts precisely in the same way in producing tenacious uterine leucorrhœa; a vaginitis capable of producing a gonorrhœa in the male, or rather an urethritis, which cannot be distinguished from gonorrhœa.

Whatever be the cause, however, in nearly all the cases where the discharge existing is thus tenacious, I assert distinctly also that, so far as my experience goes, sterility is the constant result. The affection is, moreover, in many cases, perhaps the majority, exceedingly difficult of cure, and for this simple reason: it is not only the uterine cervical and superior cavity which is affected, but the tubes likewise. A temporary cure by local applications to the uterus may be effected in the cavity, and for a few days a practitioner may believe he has cured the patient. Perhaps, a fortnight later, he is mortified in finding his patient as bad as ever. There has been no cure of the catarrh of the Fallopian tube, and, through the continuity of surface, the uterine mucous membrane has been affected.

I believe one of the reasons why peritonitis is not more common in these cases is, that the expulsive or downward action of the cilia of the tube directs the unhealthy secretion into the cavity of the uterus rather than into the peritoneum.

I think it will facilitate the description of the points I wish to bring especially before your notice, if I speak of this disease under three varieties, although they are but stages of the same disease: namely, (1) where it is confined to the cervix; (2) where it extends to the superior cavity of the uterus; (3) where it reaches the Fallopian tubes and peritoneum.

1. Let us speak first of the cervical variety. On examining a woman affected with this form of tenacious leucorrhœa, we generally find an accumulation of muco-pus around the cervix. This is generally removed with difficulty, but even then a more or less thick cord of the same secretion projects as a piece of string from the os, and cannot be detached. Even if a piece of thick wire, or a sound, around which some medicated cotton has been wound, be introduced into the uterus, it cannot be so removed; more and more seems to have accumulated above, and the mucus is as tenacious as ever. It is rare, however, that in such cases the operation can be done without exciting pain, just as you pass the internal os, and sometimes higher up. The severity of this pain varies. In more chronic cases, it may be slight; in others, and in these generally the dysmenorrhœa is very troublesome also, it amounts to an agony, which lasts for hours afterwards. I may here state, however, as useful, not only in these cases, but in others, where the passage of the sound is attended with pain, that the injection, *per vaginam*, of water as hot as the patient can properly bear it, is the most effective way of checking or relieving it. The moment the internal os is passed, the exact pains which the patient is accustomed to have during a period are reproduced. The patient, indeed, will spontaneously exclaim, "Oh, you are bringing on all my poorly pains." The point of starting the pain is therefore probably at the internal os. I have also noticed that, in a large proportion of cases, uterine version or flexion exists, especially anteversion; but there can be no doubt that the internal os, by reason of the pain, is the seat of spasm, which, for a time at least, precludes the passage of the cervical fluid into the superior uterine cavity. This spasm, as well as the version where it exists, is in a measure a preservative action, and often prevents the development of the second stage.

If we now look to the mechanism of the production of this affection, we may trace some of the concomitants which render it so permanent, especially with married women, or women having relations with men; and which make it so obnoxious to treatment. These are mainly two: 1. Direct suction upwards of the diseased fluid by the uterus; 2. The natural pressure downwards, and partial opening of the os during copulation.

I have elsewhere shown that, by means of a very simple instrument, we may prove that there exists a power of suction upwards by the vagina and uterus during expiration, which is entirely due to atmospheric pressure. Take an ordinary speculum; close the uterine end by a thin membrane, and the other end by a cork through which a glass tube bent at right angles passes, and which is of some length; if this speculum be filled with water, which is allowed to extend also up the tube, at each inspiration the patient makes the water will rise in the tube, while with each expiration it will fall—i.e., there is a fall of the water in the tube. The mechanism of this change is too obvious to require comment. In some women, owing possibly to some peculiar folds of the mucous membrane of the vagina, which acts in a valvular manner, air is being continually sucked up, and at last fills the vagina till it provokes an expulsive effort, and the air is forcibly propelled outwards, and sometimes with a noise similar to flatus expelled *per anum*. I believe it is an operation very analogous to this which takes place *in utero*, through some condition, also of a valvular character, in the external os which causes vaginal fluids to enter into the uterus during expiration. It is, perhaps, for this very reason that, at the critical moment of the orgasm induced by sexual intercourse, repeated and sudden expirations occur, which facilitate the upward passage of the semen into the uterine cavity.

Dr. Matthews Duncan has referred this suction upwards of vaginal fluids *in utero* rather to a reverted action of the muscular fibres of the uterus; and in this manner he explains the occasional drawing upwards of intra-uterine pessaries and their enlarged dics at their distal end right up into the uterus, which often taxes disagreeably the practitioner's ingenuity to get them out again. I have also had some of these unpleasant accidents to meet. Nor is this confined to the uterus. In cases where an artificial anus has been made, I have seen large pieces of lint and cotton sucked up and disappear altogether, and never found again. Nay, more; when an anus was made in the groin, and an ivory tube with a large cap placed in it, this has also been sucked up and disappeared. In one case where this occurred, the patient is still living. Here, perhaps, there may be some reversed peristaltic action to account for it. Still it seems more rational to attribute, at least in the uterus, these effects rather to propulsion upwards by atmospheric pressure during expiration; first, because it necessitates the dilatation of the external os, which would imply an aterine contraction, which, we should suppose, would expel the contained intra-uterine pessary; and, secondly, because the uterine cilia have also an action in the expulsion of contained fluids. The moment, however, we explain it by atmospheric pressure forcing fluids upwards during expiration, and some accidental valvular action of the mucous membrane at the os uteri, the result is obvious. That such valvular action of folds of the mucous membrane does take place, is often made sufficiently palpable; but, conversely, when we try to introduce a sound, in some cases, we are prevented altogether by some fold of mucous membrane, and also by the result often noticed, and well instanced by Dr. Barnes, that, when the external os is cut, a large quantity of mucus, previously retained, obtains at once a free exit.

There is another cause also operative in such cases; the fact that, during intercourse, the uterus is forced downwards to meet the male organ, and probably the os undergoes a sort of dilatation at the same moment, both of which circumstances mechanically facilitate passage of acrid fluid upwards in the uterus. The way in which gonorrhoeal fluid may thus pass into the uterine organ is sufficiently obvious.

Be it, however, gonorrhoeal or other acrid vaginal fluid, it is equally obvious how, once in the cervical cavity, it will act as an irritant. It is well known that the vaginal secretion is acid, sometimes intensely so, whereas the uterine secretion is alkaline and markedly so. When an excess of acid fluid is thus sucked up *in utero*, of itself it will produce irritation leading to inflammation of the mucous membrane; and secondly, the contents of the uterus, now being acid, will kill any spermatozoa which are present, and so sterility follows as a matter of certainty. In these cases, the dysmenorrhoea is mainly due to obstruction at the external os, and the pain is chiefly referred to the lowest parts of the pelvis.

It was the examination of many of these cases that led me to conclude that, in a large proportion, the fluid sucked up did not pass the internal os, but was by constriction there prevented from going beyond. I have been met by the statement that there are no special circular

fibres here forcibly to close the opening. All we notice are merely a few fibres which here decussate. I do not in any measure question the anatomical fact. But I am certain it is not a pathological fact. Like muscle everywhere when frequently taxed, it becomes hypertrophied, and then it acts distinctly as a sphincter. I have verified this over and over by the use and retention of caoutchouc intra-uterine pessaries, where at this point there has been left a very distinct circular impression. And more than this, such constrictions may under disease take place elsewhere within the uterine cavity, especially in certain forms of version or flexion, as these tubes prove. This is possibly sometimes the seat of local ulceration, a state of things being here produced which is analogous to fissure of the rectum; as, when touched with the sound, not only is the pain intense, but blood follows it use.

Certain it is, however, that constriction does occur at the internal os, and here we have the explanation of the intense pain sometimes experienced by women. As you pass the sound through the internal os you at once provoke a spasm, which continues for a time, and not unfrequently you find your sound comes out bloody, exactly as it does in some cases of stricture of the male urethra, so forcible has been the local resistance. It may be that there may also exist at such parts slight ulceration.

2. Sometimes there is not such a complete closure or resistance at the internal os, or the cervical cavity is so full, and dilated with muco-pus, that the fluid, not being expelled downwards, is forced up into the upper uterine cavity of the uterus, and we have the second variety of tenacious gonorrhoeal uterine leucorrhoea. Sooner or later this result follows, and gradually but completely the uterine cavity becomes filled with fluid. The symptoms now are altogether different. They are, in a few words, those of greater and higher local uneasiness; sometimes phenomena of spurious pregnancy, followed often by symptoms not unlike those of miscarriage; but I shall again refer to them. Exacerbation of pain recurs not only at the onset of menstruation, but at other times, when the contained fluid, whether catamenial during menstruation, or muco-pus during the interval, is forcibly expelled by a powerful uterine contraction which overcomes all before it, and relief follows. Fortunately, the disease does not always extend beyond. But sometimes it does, and then the case is one of very serious import, at best one of confirmed invalidism. This constitutes the third variety, where the Fallopian tubes become inflamed, and even perimetritis may occur. In the worst cases, we may have those results insisted upon by Noeggerath, when a few drops of the inflammatory secretion of the tube escape, possibly by a contraction of the tube giving rise to perimetritis, and sometimes rapid and fatal acute peritonitis. Fortunately, in this country at least, this unhappy complication is not common. It cannot be said, at least in Great Britain, if it can be elsewhere, that all our young married ladies are diseased by their husbands, so that young ladies are afraid to be married, because they know that all their married acquaintances were made ill directly and never again recovered.

The dysmenorrhoea in these cases is very severe, accompanied with general uterine pain, tenderness reaching high up, and very aggravated.

Let us now distinguish how far from symptoms we may diagnose these three different varieties. I have already spoken generally of the general symptoms. We have considerable assistance, as I have shown in my paper read before the Obstetrical Society (*Transactions*, vol. xii., 136) on Fundal Endometritis, by the special localisation of the pain which is influenced by the nerve-distribution. In the cervical variety, the pain is referred to the lower part of the sacrum, the lower part of the pelvis, where there will be heavy dull pain, sometimes reaching as high as the groins, but not higher. The vagina also, especially at the upper part, feels sore, so that connection becomes sometimes very painful, or, if pressure be made with the finger on the cervix, it gives pain. Once become chronic, however, all these symptoms are greatly diminished in intensity. In the second variety, we have pain extending higher up, more marked just above the pelvis and pubes, markedly in the groins, and extending down the thighs, generally the left. Occasionally it extends, as in ordinary cases of fundal endometritis, up to the waist, in the region of the great $\frac{2}{3}$ milunar ganglion, and over both ovaries, specially the left. In the third variety, the symptoms are those of perimetritis or peritonitis, which need no special description, except that I may remark that I have noticed in several of those milder or more chronic forms, where neither perimetritis or peritonitis existed, that, on pushing the finger high up on either side of the uterus, or with the index finger placed there, making pressure from the abdomen, I produced intense pain and a sickening sensation even in those cases where there was no enlarged ovary, although in some I have noticed these organs also enlarged and very painful.

So much for the pain. But, in the second variety, it often occurred that sudden relief was obtained, at least for a time, by a forcible ex-

pulsion of the uterine contents by a sort of labour-pain. In these cases, also, except where the disease had lasted many years, and sensation, as if it had worn itself out, was diminished, intense dysmenorrhoea was present, and the pains extended higher in the abdomen, according as cervix, fundus, or tubes were affected. I should remark that the breasts not only swell and become somewhat uncomfortable in these cases, as is commonly observed during menstruation, but become exceedingly painful, constituting mastodynia, which even persists after the period, and occasionally gives rise to hypertrophy of the organ. In these cases, the second variety is always present.

Treatment.—For a long time, I was greatly puzzled with these cases. If I cured them for a time, they were sure to recur. It is so even now with a few cases, and especially with those which include the third variety. The principles of treatment indicated here are threefold; first, local antiphlogistic measures and other general agents to relieve the local congestion or inflammation; second, free exit to all contained irritable fluids, and the prevention of the suction upwards of the same; third, local appliances to correct the diseased action of the mucous membranes, and to keep the cavities patent. It is my conviction that the cases are very few and far between, which will yield unless these three measures be combined; and even in ordinary cases of leucorrhoea of an uterine origin, where the tenacious mucus does not exist, the same treatment is most efficacious.

First, of the local antiphlogistic measures and other general agents to relieve the local congestion or inflammation, blood-letting by means of leeches applied to the cervix uteri is both safe and effective. It is, in fact, a *sine quâ non*, the backbone of success, and much to be preferred, in my estimation, to the lancet. The uterus in these cases is more or less hardened. Fibrinous deposit has, in measure, taken place in its parenchyma, and blood will not flow, though the cervix be pricked heroically and extensively. The hysterotomy, or cutting the os on both sides from within, if a knife were used at all, limiting the cut to the cervical cavity, was the best way of doing it. But leeches are to be preferred. The very suction of the leeches brings down the blood, favours the downward course; and, when they fall off, the oozing of blood continues. In a plethoric woman (six leeches at a time), the leeching may be repeated half a dozen times at least. It is the best preservative against subsequent inflammatory complications. If there be also much abdominal pain, then leeches may also be applied on the abdomen; but here I think blisters, or iodine paint applied to the belly, and frequent saline purgatives with anodynes, and alterative doses of mercury, are the best adjuncts.

The patient thus prepared, we are in a position to put in operation the second mode of treatment, viz., to give a free exit to all contained irritable fluids, and to prevent the further upward suction of the same. This, after all, is one of the first principles of surgery. If matter be cooped up in any cavity, we must let it out. If the external os be small, and its action valvular, as before explained, it must be cut through. Mere dilatation, without a bougie or intra-uterine pessary, at best can only have a temporary effect. Nor have I ever seen the slightest danger occur from cutting the external os in a patient previously prepared by the measures before indicated. A pair of scissors, a bistoury, or Dr. Barnes's instrument, is sufficient. Precisely as when we cut a fissure in the anus, the parts are at rest. No more suction can take place upwards, and a free exit is given to all contents. We have, in fact, one abscess with a free external opening. The cervical cavity can now be locally treated by local agents, and its diseased action cured. A number of these are in daily use. A small stick of nitrate of silver may be advantageously left in the cavity, which will often correct and change the acrid secretion, and recovery may follow. Another agent is pure carbolic acid, placed on a piece of wire previously covered with cotton-wool, and afterwards dipped in crystals of iodoform. This last is very successful, and, moreover, relieves pain. I have sometimes used iodine paint, as advised by Dr. Wynn Williams, made by mixing iodine, iodide of potassium, water, and spirit, in equal parts; but I have not found in my practice anything as a local agent so successful as the iodoform and carbolic acid conjoined.

When, however, we have to treat the second variety of this disease, we tread upon more dangerous ground. It should be stated unequivocally that, if local remedial measures, such as the hysterotomy and intra-uterine pessaries, be employed before full and effective antiphlogistic regimen has been premised, inflammatory complications of serious character, and death by septicæmia, may follow. If this regimen, however, have been observed, it is comparatively safe to cut the internal os by the hysterotomy, or dilate by a sea-tangle or sponge-tent. The morbidly contracting decussator fibres of the internal os must be overcome. If we cut, it is wise to let the patient bleed awhile. If the bleeding seem too profuse, then it is wise to introduce a small piece of sea-tangle; but one important caution should be remembered. It should not

be straight; it should have the exact curve of the uterus. To attempt to put a straight one in mars and injures the cut position, and is favourable to the development not only of severe pain, but of inflammation. For this purpose I invariably use sea-tangle of various curvatures; or if I use a sponge-tent, I pass through it a piece of steel wire, which I then bend to the curve required. Sometimes, by pulling down the uterus a little way, the tangle or tent is more easily introduced. But the uterus should not be pulled down far or violently, for peritonitis may be the result. Be it tangle or tent which is used, another precaution is necessary. Surround either by a little cotton-wool, and dip it in a solution of glycerine and iodine. This is an antiseptic agent which prevents subsequent poisoning.

Sometimes, however, notwithstanding every care, the pain produced is so great, that neither tent or tangle can be borne. We must then proceed another way. If the pain and bleeding persist, inject into the vagina water as hot as the patient can bear. This almost invariably arrests them both. If the bleeding persist, then I plug the vagina only. An anodyne suppository helps the patient, if used in addition. Within forty-eight hours, all plugs being removed, I then insert into the uterus a small taper, such as I show you; it is covered with cotton, shaped to the cavity, dipped then in carbolic acid, introduced, and left *in utero* for about twelve hours. It is seldom that this process need be repeated. The uterine tenderness generally disappears, and a large sound can be introduced without pain. The case may be left then, and will often do well; but I prefer using an intra-uterine pessary, one of the various forms I now show you, and which are for the most part well known to the profession. I have kept in the caoutchouc ones I show you for a year; the combined Hodge's and intra-uterine pessaries which I described at Bath before the Association, for six or eight months. The mucous membrane then assumes a healthy character. The catamenia are copious and painless often from the very first, generally by the third subsequent catamenial period. The dysmenorrhoea and the tenacious uterine leucorrhoea alike disappear.

Lastly, as regards the third variety; in the more acute forms, the antiphlogistic treatment should be fully and heroically carried out at the onset, if we be fortunate to see the case early. Local leeching to the cervix and over the abdomen, followed by blisters, are here indicated; but even general bleeding should not be feared if there be much pain. Calomel and opium in half-grain doses should be given every three hours; and five minims of tincture of aconite, two drachms of liquor ammoniæ acetatis, for every two hours, till temperature and fever abate. This treatment may prove effective. More often, however, the disease assumes a chronic form.

I have noticed that, in cases where the early symptoms have been of this serious import, once the chronic symptoms have occurred, the treatment recommended for the second variety has altogether cured the disease; possibly by ensuring a free exit of the contents, possibly because the intra-uterine pessary, if *in situ*, precluded the influence of atmospheric pressure or suction upwards; possibly because an intra-uterine pessary always favours a copious flow of catamenia, and thus relieves all local congestion. And what is more agreeable to the sufferer, the matrimonial alliance, which had hitherto proved an occasion of sorrow by the disease produced, has passed into one of joy through the birth of a child.

Dr. EDIS (London), whilst admitting that intra-uterine stems were permissible in certain cases of dysmenorrhoea, thought the young practitioner could not be too careful in employing them. The cases needed to be selected, and the patients submitted to preparatory treatment, before the insertion of a stem was thought of. Pelvic peritonitis and pelvic cellulitis not unfrequently resulted from the injudicious employment of stems; and, unless the patients were carefully watched during the time they were wearing them, there was always a certain amount of risk, not to say danger.

Mr. DEWAR (London) had found the pessaries suggested and exhibited by Dr. Routh very useful, but difficult of introduction.

Dr. BANTOCK (London) was of opinion that no one ought to undertake the introduction of an intra-uterine pessary without having, as it were, served an apprenticeship to gynecological manipulations.

Dr. WALLACE (Liverpool) said that, in the great majority of cases, a simple Hodge's pessary was sufficient to keep an intra-uterine stem in position, without special apparatus for fixing the stem. He had tried various means for reducing the tendency to cellulitis, and considered that, on the whole, the hot vaginal douche was the most satisfactory.

Dr. ROUTH, in reply, said he did not underrate either the difficulty of introduction, or the risk, without previous preparation of the patient, of setting up inflammatory mischief. In every case, he considered it his duty to submit the patient to suitable preliminary treatment before adjusting a pessary within the uterus.