

the cervical mucus, we could safely say that it will not be necessary to incise the neck of the uterus. But if the sperm do not enter the canal, then the probabilities are in favor of the necessity of some surgical interference. The semen may enter the cervix in great abundance, and we may find the spermatozoa all dead, even but a few minutes after coition. Then, as said before, we must find out the source of the poisonous secretion, and remedy it; for a vitiated secretion shows some organic condition requiring a special treatment.

When I wish to examine the condition of the cervical mucus upon the spermatozoa, I order sexual intercourse in the morning—the dorsal decubitus to be retained for an hour afterward; and I expect a visit from my patient four or five or six hours after coition. Sometimes we find spermatozoa in great abundance in the cervical canal, and not one living. (I have occasionally examined the mucus, six, eight and ten minutes after coition, and found all the spermatozoa dead.) Sometimes we find half of them dead; again, only about a third; again, about two-thirds. Sometimes, in one portion of the mucus, every spermatozoa is dead; while, in another portion of the same sample with fewer epithelial scales, we find them alive. Now and then, after treatment for a month or more, I have found the mucus drawn from the lower segment of the cervical canal full of living spermatozoa, and I have supposed that the case was cured; but when I came to examine that drawn from the upper segment of the canal, near the os internum, they were nearly all dead. This was evidently because the mucous membrane lining the lower segment of the cervix, being more easily reached and more thoroughly treated, had assumed a healthier character, and consequently its secretion was restored to a normal condition; while that higher up, and more difficult to reach, had not been so much improved, and hence its secretion was still abnormal—a condition requiring further treatment.

The vaginal mucus, by its natural acidity, kills very quickly every spermatozoon. I do not now remember ever to have found one alive in the vagina, except when the examination was made very soon after coition; when, indeed, the vagina was full of semen but slightly mixed with other secretions. Examined three or four hours after intercourse, the spermatozoa found in that portion of the mucus of the vagina adhering to its walls are always all dead. Indeed, the normal vaginal secretion seems to be a perfect poison for the superabundant spermatozoa.

When, after a month's treatment, I wish to know whether the case is cured or not—in other words, whether all possible recognized barriers to conception are removed—I order sexual intercourse (just after menstruation) at night, and examine the cervical mucus twelve or fourteen hours afterward. If the majority of the spermatozoa be alive and active, I have great hope of conception. Before dismissing a case as cured, I think it necessary to examine the mucus thirty-six hours after coition; and, if it is then all right, of course I suspend the treatment, and patiently wait the hoped-for result.

So much care is necessary in the removal of the mucus for microscopic examination, that I may be pardoned for referring to it again. The patient is placed in the left lateral semi-prone position, as I

have elsewhere so minutely described, and my speculum is introduced, and some of the vaginal mucus drawn up with a small glass syringe, previously washed out with warm water. This is deposited on the object-glass; the vagina is then cleared of all secretion, whether vaginal or cervical, the whole of the vagina and the os uteri being thoroughly wiped over with a pledget of cotton. This is for the purpose of guarding against the possibility of mixing vaginal with cervical mucus, which would, of course, spoil the whole experiment. The cervix is then brought forward either by the depressor or a tenaculum, if necessary, which enables us to look directly into the cavity of the cervical canal. The syringe is then to be again thoroughly rinsed in warm water; its nozzle is passed into the gaping canal for half an inch, and the cervical mucus in its lower segment is drawn out. The instrument is emptied, washed out again with warm water, and reintroduced up to the os internum, and another portion of mucus is drawn out, provided there is any left after the first effort. Thus we have three specimens of mucus; i. e., one vaginal and two cervical. The cervical secretion should be clear and translucent, and about the consistence of the white of egg. If it contain any little opaque specks of milky whiteness, it invariably poisons the spermatozoa to a greater or less extent. We sometimes find the cervical mucus perfectly clear, and yet poisonous to the spermatozoa. Here we would naturally expect to find excessive alkalinity of the secretion; but I have not been able to detect it. In these cases, it has seemed to me that the spermatozoa were killed—drowned, as it were—by the very abundance of the secretion. I do not here allude to cases of uterine catarrh, where the secretion is very thick and albumino-purulent; for, of course, this is a deadly poison to the living principle of the semen. But I allude wholly to such cases as have been changed by treatment to a condition giving rise to a secretion seemingly normal, so far as an ordinary ocular examination is concerned. Here the microscope is our unerring guide. The mucus may be clear, and perfectly normal in appearance; but, if it kill the spermatozoa, then there is still some point in the canal of the cervix, or in the cavity of the uterus, that gives out a vitiated secretion; and this must be found out and corrected before the case is wholly cured. When we find living, active spermatozoa high up in the cervical canal thirty-six or forty hours after coition, we can pronounce the case cured, so far as it can be by surgical means, and not till then.

It is time for us to pause, and consider if there is not something more to be done for the sterile condition, than to split up the cervix uteri. I look upon this operation as one of great importance, as one of the most valuable in uterine surgery, but I think that we have followed too blindly the example and teachings of its illustrious author, Sir James Y. Simpson. For myself, I am now sure that I have cut open the cervix uteri, perhaps scores of times, when it was both useless and unnecessary; and I know that others have done the same thing. Do not misunderstand me. I speak here solely of the operation with reference to the sterile condition, when it would be wholly useless if the husband happened to be sterile, and certainly unjustifiable unless imperatively called for by considerations of