# EXPERIENCES WITH INTRAUTERINE VAPORIZATION.

BY

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(With one illustration.)

In the *New York Medical Journal*, May 13, 1899, I published a paper on the above subject and included a brief account of 21 cases. I have since then been able to add 20 other cases, making a total of 41. The treatment has been applied by means of the apparatus of Ludwig Pincus.

I have resorted to vapo-cauterization in only 4 of these cases. Its application implies the use of dry heat to the entire uterine mucosa, and the only fatal case on record (Treub's) was due to perforative peritonitis after its use. In the remaining 37 cases I have relied upon the effect of superheated steam, the fenestrated catheter being introduced just beyond the internal os.

Two of my patients were virgins and the treatment was applied under anesthesia. The ages of the 41 women ranged between 19 and 44 years.

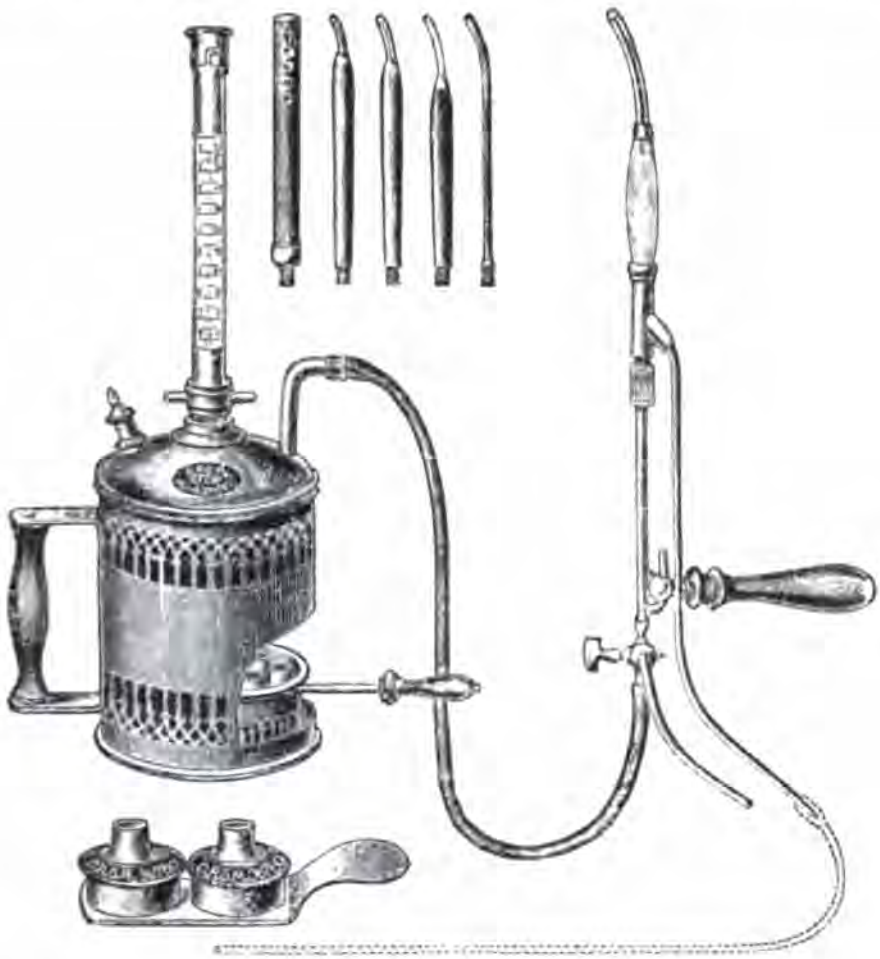
The indication in 5 cases was profuse uterine leucorrheal discharge. From 2 cases I have no subsequent report. One case (of gonorrheal origin) was partly benefited. Two cases were distinct failures. My experience, then, in this direction has been very discouraging.

Eleven women had been curetted once or several times for persistent or irregular uterine hemorrhages without benefit. It is with pleasure that I note that, after periods of time vary-

ing between two and twelve months, 6 were permanently cured, 2 were failures, and 2 were not heard from.

In 2 cases of failure I was permitted to use the method a second time, and in both of these cases the second application was successful.

In 22 cases no anesthetic was used, the treatment being carried out at the hospital, in my office, or before the class in



Vaporizer of Ludwig Pincus.

the lecture room. With one exception the patients were able to walk or ride home.

The exceptional case occurred in an anemic, debilitated woman who had suffered more or less continuously during six months from profuse uterine hemorrhages. The first vaporization (105° C. during fifteen seconds) having failed to give any relief after five weeks, I decided on a second application of steam heated to 110° C. and applied during sixty seconds.

Without anesthesia the treatment had been applied for forty seconds, when the patient suddenly became limp and partly unconscious. The pulse became very slow (about 60 per minute) and barely perceptible. The treatment was promptly suspended. After an hour's work with stimulants she failed to rally, so that I had her transferred to the hospital in a carriage. In the course of several hours she gradually came to, but seemed to be so weak that I kept her in the hospital for observation during the next seven days. At the end of this time she was able to get about, but the bleeding persisted. I then proposed a radical operation, to which she refused to submit. After a month the bleeding ceased and has remained away ever since, probably because of complete obliteration of the uterine cavity.

The immediate effects in nearly all of the cases have not been bad. In most of the ambulant cases, in whom no anesthetic was used, there was a surprisingly complete absence of pain during the application of the superheated steam. For several days later many complained of vague pelvic pains, which usually disappeared entirely. In all cases a free leucorrheal discharge, sometimes blood-tinged, made its appearance. This was quite offensive in one case. The fluor, however, usually completely disappeared after a time. Only in the cases vaporized for persistent uterine leucorrheal discharge did the treatment seem to be of little value.

In fact, one young woman, vapo-cauterized over a year ago for a uterine discharge of gonorrheal origin, tells me that the discharge at times is worse than ever. It may be, however, somewhat of a consolation to add that two previous attempts to cure the discharge by means of curettage, as well as any amount and variety of local procedures, have equally proved inefficacious.

In addition to the case of partial collapse during the treatment, previously alluded to. and which ultimately terminated in complete recovery, I am obliged by motives of honesty to record one experience in which the ultimate termination has not been entirely satisfactory.

A young woman of 22 had given birth to a child nineteen months previously. After menstruating regularly for some time she began to see her menses once every three weeks. Finally, during the four weeks preceding her visit she bled continuously and profusely. Without anesthesia, in my office, I applied the superheated steam (110° C.) for about fifteen to

twenty seconds. The cervix was packed as usual with gauze, and the patient, apparently free from evil reaction, sent home. The following day my assistant reported a mild rise of temperature with considerable pelvic pain. She was removed to the hospital, where for four weeks she was treated for a large pelvic exudate (parametritis). The bleeding was immediately controlled by the vaporization. The first succeeding menstrual flow was slightly anticipated and lasted only two days. The subsequent menses have been normal in every respect. Seven months later she still suffered from pain in the left pelvis, which I attribute to the presence of chronic salpingo-oöphoritis. My suggestion to have it operated has thus far been declined.

Although Continental writers constantly refer to the danger of cervical stenosis after the use of vaporization, I have met only one case of distinct obliteration of the external os. This good luck may be due in a measure to the fact that I use three precautions: (1) thorough dilatation of the cervix with my four-branch dilator; (2) limitation of the application to a period of time varying between five and twenty seconds, unless I deliberately decide on obliterating the uterine canal; (3) the introduction of gauze into the uterine interior at the completion of the operation.

The case of obliteration of the external os presents the following history: Mrs. G., 32, married sixteen years, was delivered of six children, the first instrumentally and the others spontaneously. The last was born four years ago. Menses always regular. Five months previous to our first meeting she thought she was two months pregnant. She began to bleed, and this kept on for two months. She was curetted by her family physician, but two months later she was still bleeding. Under anesthesia I vaporized the uterine cavity and repaired a badly lacerated cervix. After three weeks the sutures were removed and the patient discharged from the hospital as cured. Three months later she called on me to learn why her menstrual flow had not returned. I at once suspected a possible obliteration of the uterine canal. On making an examination I readily felt a thin diaphragm at the site of the external os. On forcing an opening with my finger tip there was an immediate large gush of thin, dark-colored, tarry blood. Eleven months later she reported that she was feeling perfectly well and menstruating normally.

In quite a number of cases I have vaporized the uterine cavity in conjunction with other operative procedures. Thus

my notes show simultaneous plastic work done on the cervix or perineum, removal of placental or membranous débris after abortion, morcellation and curettage for submucous fibroids, anterior and posterior colpotomy for the breaking up of pelvic adhesions or the removal of diseased appendages or adnexal tumors, vaginal fixation of the round ligaments, and Alexander's operation. In none of these cases did the additional intrauterine vaporization seem to prolong the usual period of convalescence.

For reasons evident to workers in clinics and hospitals many of these cases have been entirely lost sight of. A certain number are of too recent date to be of any value as regards permanent results. So that I command only 14 cases which have been observed over a period of time ranging between two months and a year. Of these, 2 were done for persistent and profuse leucorrheal discharge. The treatment failed in both, although one of them, after seven months, reports herself five months pregnant. The other, after a year's interval, is as bad as ever.

Of the 12 remaining cases, done for uterine hemorrhage, 11 are noted as cured. Two of these, however, required a second vaporization. The case of failure had been previously treated without success by curettage. She could not be induced to submit to a second vaporization.

I am convinced, after a year's conscientious trial, that vaporization (not vapo-cauterization) is a useful addition to our present means of combating uterine hemorrhage. The indications and contraindications still require to be definitely laid out. A careful diagnosis must be made in every case as far as possible. A case of carcinoma uteri must not be allowed to progress while trying to check irregular bleeding with the vaporizer. Similarly must the uterus be thoroughly curetted of placental and membranous débris before the vaporizer is employed.

To illustrate the necessity of thorough removal of placental débris before resorting to vaporization I give the following history: A young woman bled profusely for a month after a miscarriage. Under anesthesia the curette, lightly applied, seemed to prove that the uterus was empty. Vaporization at 110° C. for fifteen seconds was followed by a profuse gushing of blood. A second vaporization was followed by the same result. The finger was now introduced into the uterine cavity and a good-sized piece of placenta was found attached to the fundus of the uterus. Removing this with forceps, using the

finger as a guide, all bleeding was promptly checked. For a third time the uterus was vaporized, and into its interior a strip of gauze was passed. Three weeks later the patient reported that the bleeding was permanently checked. She complained, however, of vague pelvic pains.

With the above and other provisions I believe in the efficacy of superheated steam in controlling uterine bleedings, particularly when due to various forms of endometritis. I have not used the method for endocervicitis alone. In conjunction with curettage and other operative procedures I believe it has its place. Some operators use carbolic acid or tincture of iodine after curettage. Why not vaporization? If, after curetting the uterus after an abortion, we believe in the efficacy of a bichloride douche, why not sterilize the uterine interior instead with superheated steam?

But as a means by itself it is of unquestioned utility in controlling, regulating, or checking certain forms of uterine hemorrhage. Of this I have had a number of convincing examples during the past year. The objection that a certain proportion of these cases require a repetition of the treatment can be fairly met by remembering that the same thing may be true after curettage.

The fatal case of Treub's after puncture of the uterus was unfortunate, and undoubtedly for a time cast a shadow upon this new treatment. But who has not heard of penetration of the uterus after curettage, and in competent hands, too? In the July number of THE AMERICAN JOURNAL OF OBSTETRICS will be found the allusion to a case in which the intestine was dragged into the vagina during a curettage after abortion. The woman died. But would this induce us to discard curettage?

I agree with Dührssen, however, that vaporization should be considered as an operation, which implies proper surroundings, sufficient assistance, and surgical asepsis. I do not believe that the treatment ought to be applied to ambulant patients. Anesthesia may or may not be employed. Personally I prefer to work under anesthesia, but the patient's wishes can be consulted in ordinary cases.

I believe that the profession is in debt to Snegireff for the idea of this treatment, and to Ludwig Pincus, who has persistently devoted himself to the construction of a practicable apparatus and to the tireless dissemination of the proper manner of using it.

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