Albert Döderlein, "On Artificial Insemination" (1912)

Abstract

Gynecologist Albert Döderlein (1860–1941) conducted research on infertility, which he perceived as a widespread phenomenon among married couples. In order to overcome the "disease" of sterility, Döderlein recommended artificial insemination, which had been successfully employed in fish farming since the eighteenth century. At the end of the article, Döderlein describes the method that he used in his only successful artificial insemination to date.

Source

On Artificial Insemination[1]
by Prof. A. Döderlein, Munich

Gentlemen! The desire to know that one's own self has been propagated through progeny is so deeply rooted in the human race that, within those marriages where this has failed, the void is usually felt most painfully.

The frequency of sterile marriages is estimated at about 10% by Rohleder.[2] Under certain conditions, this figure doubles. Göhlert found a 23.7% sterility rate within a certain ancestral dynasty and a 20.5% sterility rate among 600 married couples from German noble families. Duncan confirmed that among 4,447 marriages in the official registries of Edinburgh and Glasgow, 725 were sterile, that is, approximately 16%; Simpson found 146 cases among 1,252 marriages, that is 8.5%, and Prochownik found a rate of approximately 9.1% among a group of 2,500 married couples.

Given the extent of these figures, and given the fact that most married people regard sterility as a disease, it is not surprising that sterile couples have always been subject to treatment by the medical profession, and that gynecologists, in particular, have been intensively engaged with the issue. Unfortunately, our efforts in this area have often been unsuccessful.

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The artificial insemination of fish is the oldest and most developed practice in this field. Here, the first attempts were made by Jacobi in the year 1763. Because insemination in fish takes place extracorporeally, there was a clear opportunity for artificial intervention from the start. The female lays her eggs in the water, and the male fish releases his milt flow when he brushes over them. This is indeed a chemotactic process, whereby the spermatozoa traverse space to find the eggs. By stroking the fish, it is easy to cause them to freely emit their seed, and thus only slight assistance is needed for artificial insemination. The artificial fish farms that operate successfully everywhere attest to the high esteem enjoyed by artificial insemination.

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Among the six cases, in which I attempted artificial insemination with sterile couples, only one succeeded thus far.

The technique that I employ follows:

I obtain the sperm via Coitus condomatosus. The condom containing the ejaculate is transferred to a sterile bowl,

and the woman is brought to the examination table in the operating room immediately thereafter. The sperm is taken directly from the condom, collected in a sterile Braun syringe, and injected into the uterine cavity. It goes without saying that the necessary precautionary aseptic measures are taken. It is obvious that one cannot expect a completely germ-free environment, since it is not entirely possible to sterilize the man's penis, and since the removal of the condom and the usual manipulation must be carried out by the man himself, so as to avoid making the procedure so uncomfortable that it would be impossible.

One may object to the fact that, under these circumstances, infections may be induced, and, in the literature, there is one case in which gonorrhea resulted in this way, as observed by Fritsch. While admitting the possibility of such a case, I believe that it represents such a great exception that it should not be given undue consideration in light of the general possibility of infection within such a marriage. Obviously, the presence of manifest gonorrhea will contraindicate artificial insemination. The instruments to be used on the woman (the specula, forceps, and possibly dilators and syringes) are of course to be sterilized in accordance with the latest professional procedures. It is my experience, however, that boiling instruments in a soda solution, in the Braun syringe, leaves residue that endangers the life of the spermatozoa. Therefore, I boil the instruments in a physiological saline solution and sterilize the syringe afterwards when dry, so as to avoid introducing materials (other than the sperm taken from the condom) into the injection.

However, I even consider semen a fluid foreign to the inner genitalia. Under natural conditions, it only reaches the vagina, and it is only the spermatozoa that move upwards through the cervical mucous. When we introduce sperm into the uterine cavity itself, we must realize that toxic matter may in fact be imported, and this is not entirely harmless. It was my experience that, in a number of cases, the women not only complained about pain after the injection, but also about changes in the volume and duration of their menstruation, which suggests a certain irritation of the mucous membrane of the uterus.

I would be remiss if I did not warn particularly against the injection of too much seminal fluid, because this may possibly enter the [fallopian] tubes and even the abdominal cavity. An experiment in which I used injections of colored solutions into the uterus showed that a dosage of only 1 cubic cm of fluid could easily enter the tubes and even the abdominal cavity through the Morsus diabli; these investigations were confirmed through queries, quantities, etc.[3] Awareness of this danger is all that is required to avoid it. It is necessary to ensure that only the smallest quantity, perhaps no more than two drops of seminal fluid, reaches the uterine cavity. Anyone who has ever registered the abundance of spermatozoa in normal sperm through microscopic investigation knows that a drop contains countless masses and that, with these drops, many more spermatozoa would likely be introduced into the uterine cavity than would find their way through spontaneous emigration.

Allow me to conclude by expressing my wish that, in the future, the artificial insemination of humans, which has been relatively neglected [thus far], be given the full attention that it clearly deserves within the field of sterility treatment.

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NOTES

[1] Based on a lecture given at the Doctors' Association in Munich on November 28, 1912.
[2] H. Rohleder, *Die künstliche Zeugung beim Menschen. Eine medizinisch-juristische Studie aus der Praxis*. Leipzig: 1911, O. Thieme.
[3] Döderlein, *Experimentelle Untersuchungen über Intrauterininjektionen*. Verhandl. d. deutsch. Gesellsch. f.

Gyn. 1897 Leipzig.

Source: Albert Döderlein, “Über künstliche Befruchtung,” *Muenchener Medizinische Wochenschrift*, vol. 59, no. 20, May 14, 1912, pp. 1081–84.

Translation: David Haney