

TREATMENT OF CERVICAL FACTOR BY DONOR MUCUS INSEMINATION

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A fairly common cause of infertility is the cervical factor. This may consist of mucus that will not support sperm survival or may be secondary to absent or scant mucus at the time of ovulation. In the latter instance, estrogen therapy can sometimes improve mucus; occasionally, antibiotics and/or cryosurgery may prove helpful. However, there are instances in which therapy is ineffective in improving the amount of mucus. This may be secondary to damaged lower cervical glands or possibly secondary to the use of drugs such as clomiphene citrate.

The three patients presented here represent cases refractory to conventional therapy in which pregnancies were achieved by mixing sperm with donor mucus prior to artificial insemination.

The mucus was collected from volunteers who abstained from intercourse for at least 72 hours. It was stored in a freezer and used within 10 days. Gonorrhea was ruled out by culture and smear.

CASE REPORTS

Case I. N. B. was a 25-year-old female who 4 years previously had had a cervical conization for a suspicious erosion. She had been trying to conceive for 3½ years. Some basal body temperature charts seemed to indicate ovulation; others showed an inadequate corpus luteum. Her menstrual cycles were about 32 or 33 days but, despite several visits at midcycle, no cervical mucus was obtained. Therefore, despite an excellent semen analysis of 55 million sperm/ml with 80% linear progressive motility, a 2.5-ml volume, with 90% normal forms, no sperm could be demonstrated

on postcoital examinations. A hysterosalpingogram revealed bilateral tubal patency.

Treatment with low-dose Premarin from days 5 to 13 of the cycle failed to improve the mucus. Even treatment with 7.5 mg of Premarin for 3 weeks failed to produce mucus. The patient's infertility problem became complicated by anovulatory cycles requiring 150 mg of clomiphene citrate on days 5 through 9. She also was taking 7.5 mg of Premarin on days 9 to 18 of her cycle but still had no mucus production. Insemination with her husband's sperm was carried out for 6 months with no success. We then tried Pergonal but, despite good estrogen effect on vaginal hormonal smear with 750 IU over 5 days, there was no cervical mucus.

We decided to try homologous sperm insemination using donor mucus. Midcycle mucus from volunteers had been stored in a freezer for no more than 10 days. After thawing, 0.5 ml of sperm was mixed with 0.5 ml of mucus, and the 1-ml sample was placed into the external cervical os. The patient failed to conceive during the first cycle but did conceive during the next, while on the same clomiphene and estrogen regimen as before.

Case II. K. P. was a 28-year-old female who was first evaluated for artificial donor insemination. Despite good estrogen effect on vaginal cytology, the patient had absent to scant cervical mucus. Despite low-dose estrogen therapy, the patient's mucus production failed to improve, and she had four unsuccessful inseminations. Premarin, 7.5 mg, was then used in an attempt to produce mucus, but after 3 weeks there was only a scant amount that was cellular and had poor spinnbarkeit. Dilatation and curettage and laparoscopy were performed; the results were normal with the exception of finding four tiny subserosal fibroids. Donor sperm insemination was

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then carried out but the semen was mixed with donor mucus. The patient became pregnant after the first attempt. She did not receive any other therapy.

Case III. S. D. was a 33-year-old woman who had been trying to become pregnant for 3 years. Her husband had marked oligospermia, with counts below 5 million/ml. The patient had an ovulatory defect which required 100 mg of clomiphene citrate on days 5 to 9. She then had consistent ovulations according to basal body temperature charts as confirmed by luteal phase plasma progesterone and urinary pregnanediol determinations. However, on day 14, her probable day of ovulation, her mucus was thick and scant. This was not improved by the addition of Premarin, 3.75 mg, on days 9 to 15 of the cycle.

The patient's husband, in the interim, had been treated with 25 mg of clomiphene for 25 days each month; after 3 months his sperm count improved to 18 million/ml, with 60% linear progressive motility. Artificial insemination homologous was attempted for five cycles, without success.

During the sixth cycle, the patient's mucus was still thick and scant, so donor mucus was added to the homologous insemination sample. A pregnancy was achieved during that cycle. She was also taking 100 mg of clomiphene on days 5 to 9 and 3.75 mg of Premarin on days 10 to 18.

DISCUSSION

Although one cannot say for certain that these three patients might not have conceived without donor mucus, the rapidity with which these patients became pregnant when donor mucus was used—especially in view of their long history of infertility—makes the success of this therapeutic modality seem more than just coincidental. Nevertheless, its efficacy in a much larger group of patients needs to be demonstrated before donor mucus can be accepted as a definite mode of therapy for certain types of cervical factor problems. We think that donor mucus would most benefit those women with scant or absent mucus rather than those with hostile cervical mucus.