

ARTIFICIAL INSEMINATION

The Jewish view regarding artificial insemination has been analyzed elsewhere;¹ the applicable Jewish principles are thus briefly summarized. Using the semen of a donor other than the husband to artificially inseminate a wife is considered by most rabbinic opinion to be an abomination and is strictly prohibited. The reasons advanced include the possibility of incest, the lack of genealogy, and the problems of inheritance. Some authorities regard such insemination as adultery, requiring the husband to divorce his wife. The wife also forfeits her marriage settlement (*ketubah*). Even the physician and the donor are culpable. There are rabbinic opinions, however, that hold that if there is no sexual act involved, the woman is not guilty of adultery.

Regarding the status of the child, rabbinic opinion is divided. Most consider the offspring to be legitimate as was Ben Sira, the product of conception *sine concubito*. A small minority consider the child illegitimate; two authorities take a middle view. Whether the child is considered legitimate or illegitimate, most rabbinic authorities deem the child as that of the donor in all respects such as inheritance, support, custody, incest, and Levirate marriage. Some regard the child to be the donor's child only in some respects but not others; whereas some rabbis declare that although the child is considered the donor's child in all respects, the donor has not fulfilled the commandment of procreation. A minority of rabbinic opinion asserts that the child is not considered the donor's son at all.

The rabbis are almost unanimous in permitting using semen from a husband if no other method is possible for a wife to become pregnant and if certain other conditions are met. For example, there must be a reasonable period of waiting after the marriage vows or proof of infertility and, according to many authorities, the insemination may not be performed during a wife's period of ritual impurity.

Most rabbis permit obtaining sperm from a husband both for analysis and for insemination. They differ, however, concerning the method used to obtain it. According to the rabbi masturbation should be avoided, if possible. *Coitus interruptus*, retrieval of sperm from the vagina, or the use of a condom, are the preferred methods.

TEST TUBE BABIES

Test tube fertilization with the husband's sperm of a human egg removed from a woman's ovary and the reimplantation of the tiny embryo into the same woman's womb with the subsequent birth of a

healthy baby, already accomplished in England, has received qualified approval by the Sephardic Chief Rabbi of Israel, Ovadiah Yosef. The Ashkenazic Chief Rabbi, Shlomo Goren, asserted that although conception in this manner is morally repugnant it is halakhically unobjectionable.

Test-tube fertilization is not considered adultery since the husband's sperm is used. Sperm and egg procurement for this procedure are permissible because the aim is to fulfill the biblical commandment of procreation. The offspring is legitimate and the parents fulfill their obligation of having children. Of course, if the sperm used is not that of the husband, then halakhic objections exist. Halakhic problems also arise if one obtains several eggs from the mother's ovary at one time and fertilizes all of them in order to select the best embryo for reimplantation. Is one permitted to destroy the remaining fertilized eggs? Do they not constitute human seed and therefore should not be "cast away for naught"? Is one permitted to perform medical research on the unused fertilized eggs? Is the test tube fertilized egg considered as a fetus? Since the egg harvesting from the mother entails a small but definite risk is the mother permitted to assume this risk?

It may soon be possible to separate male from female-producing sperm and predetermine the sex of one's baby, either by artificial insemination of male or female-producing sperm or the use of the appropriate sperm to fertilize an egg in the test tube for reimplantation into the mother. Is such sex predetermination permissible?² Is it permissible to freeze human sperm and eggs for later use? This question has not been addressed by Jewish authorities.

HOST MOTHERS

The case of host motherhood in Jewish law has been considered in some detail in at least two publications.³ Rosenfeld discusses the permissibility of transplantation of a fetus from one mother to another and the legal parenthood of the child. Is the biological mother allowed to give up her child for transplantation into another "womb"? Is the host mother allowed to accept the child?

Rosenfeld declares that if a married woman has become a host mother, she would probably have to abstain from sexual relations with her husband for ninety days. This is to insure that the child is not his, that is she did not miscarry the implanted fetus and become pregnant by her husband.

In order to apply the laws pertaining to the first-born, it is important to know whether the biological or host mother is regarded as

having given birth to the infant. Based on several Jewish sources (*Bekhorot* 46a; *Niddah* 30a), Rosenfeld concludes that if fetal transplantation is performed after forty days post conception, the child is considered to be the legal offspring of its biological parents since the child became "completed" while still in the biological mother's body. Therefore she is regarded as having given birth to it (*Berakhot* 60a; *Yerushalmi Yevamot* 11:2).

Jewish law views differently the situation of a fetal transplant occurring within forty days after conception. Bleich⁴ addresses this question by drawing on halakhic sources discussing ovarian transplants. A case is described where the ovary of a fertile woman was transplanted into the body of a previously barren woman to enable her to become pregnant (Kamelhar Y.A. *Ha Talmud u'Mada'ei ha-Tevel* pp. 44-45). The recipient is not considered an adulteress even if the donor was married. A transplanted organ is deemed to become an integral part of the body of the recipient. For this reason, the recipient of an ovarian transplant must also be considered the legal mother of any child subsequently conceived and born.

Bleich also cites the view that the ovary alone is an inert organ and is incapable of reproduction were it not for the physiological contributions of the recipient. Furthermore, in the case of fetal transplantation, the host mother nurtures the embryo and sustains gestation and, perhaps, should be considered the legal mother of the offspring. According to other authorities, the donor-mother alone may be viewed as the mother in the eyes of Jewish law since the prohibition against feticide is applicable from the moment of conception. These authorities deem the fetus to be a human being with identity and parentage from the earliest stages of gestation. Bleich also raises the possibility that two maternal relationships may exist simultaneously, the child having two mothers, the donor or biological mother and the host mother. The question remains unresolved.

The above considerations of ovarian transplants (testicular transplants are not discussed in Jewish sources but similar principles would probably apply), fetal transplants and host mothers relate to a medical situation where the conception and birth of a child is not possible in any other manner. To abort a mother's naturally-fertilized egg and to reimplant it in a host mother for reasons of "convenience for women who seek the gift of a child without the encumbrance and disfigurement of pregnancy" is, according to Britain's Chief Rabbi Immanuel Jakobovits "offensive to moral susceptibilities"⁵. Furthermore, says Jakobovits, "to use another person as an 'incubator' and

then take from her the child she carried and delivered for a fee is revolting degradation of maternity and an affront to human dignity."

GENETIC ENGINEERING

The nucleus of every cell in the human body contains twenty-three pairs of chromosomes. One chromosome of each pair is derived from the maternal egg and the other from the paternal sperm. Each chromosome is composed of thousands of genes which are the functional units of heredity. The science of genetics is the study of heredity or the transmission of genes for particular traits or characteristics from parent to offspring.

Primitive attempts by man to change the genetic makeup of certain lower forms of life involved the removal of the nuclei from frog cells and their transplantation into fertilized frog eggs whose nuclei had been previously removed. Viable tadpoles have developed, all of whom had the precise features of the original frog from whom the nuclei were obtained. This process is called nuclear cloning because a whole clone of genetically identical creatures is produced. The technical problems surrounding nuclear cloning by nuclear transplantation in man have not yet been surmounted.

On a more basic level, the genetic material within the nucleus, DNA, can be enzymatically cut into smaller sequences of genes, and these small segments can be spliced or recombined. This recombinant DNA technology has now made it possible to transfer genes to totally unrelated hosts. A vector (usually a virus) is needed to transfer this DNA material into the animal, plant or bacterial cell of choice. Hereditary material from virtually any plant or animal cell can now be propagated in bacteria, and bacterial genes can be inserted into animal cells. Various terms have been used to describe these revolutionary methods including "gene splicing," "gene grafting," "gene cloning," "gene transplantation," "genetic manipulation," and "genetic meddling." The two most widely accepted terms are "recombinant DNA research" and the broader phrase "genetic engineering." Medical science now has the capacity to rearrange the genetic heritage of thousands of years.

The potential advantages of recombinant DNA research are several. Some genes can now be copied and thus their precise structure can be more easily studied. Bacteria can be directed by the gene transplanted into it to assemble a protein valuable to man. Insulin, antibiotics, antiviral agents and numerous other drugs, chemicals and vaccines might be synthesized in large quantities by the tech-

nology of genetic engineering. Patients with absent or defective genes suffering from such genetic disorders as Tay-Sachs disease, hemophilia, sickle cell anemia and their like, might be given a replacement gene.

On the other hand, huge potential hazards of recombinant DNA research exist. Genes for pathogenic products might be transplanted into bacteria deliberately or inadvertently. Unexpected alterations may occur. The accidental release into the environment of organisms carrying extraneous genetic material or the infection of plant or animal life with these bacteria are both possible. Recombinant DNA may be taken up by human cells in such a way as to produce cancer or other diseases.

The literature on cloning and genetic engineering,⁶ as viewed in Jewish law, is very sparse indeed. Rosenfeld discusses various Jewish legal problems relating to gene surgery, gene modification and gene transplantation.⁷ The medical problems of removing the ovum, modifying some of its genes by microsurgical techniques and replacing the viable ovum in the mother have not yet been surmounted. However, assuming such surgery can be successfully performed, Rosenfeld contends that gene surgery might be permissible in Jewish law because genes are submicroscopic particles and no process invisible to the naked eye could be forbidden in Jewish law (*Responsa Teshuvah Me-Ahavah* No. 53). Prohibited foods, for example, do not apply to microorganisms. The priest only declares ritually unclean that which his eyes can see. On the other hand, a newborn infant with ambiguous genitalia would probably need a chromosome analysis (microscopic examination) to establish genetic sex.

Another argument Rosenfeld advances for permitting gene surgery is that the ovum (or sperm) is not a person since conception has not yet taken place. Thus, gene manipulation would not be considered as tampering with an existing human being but only with a potential one. Some authorities, however, disagree, claiming that the destruction of even a potential human being (either the unborn fetus or the unfertilized human seed) is prohibited.⁸

Rosenfeld considers the following principle indisputable: any surgery performed on a person must certainly be permitted on an ovum (or sperm) before conception. Thus if a surgical cure for hemophilia or Tay-Sachs disease were possible, it would surely be permissible; hence, it would certainly be permissible to cure hemophilia or Tay-Sachs disease by gene surgery.

In gene transplants involving the transplantation of genes from one person into the ovum or sperm of another, the following Jewish legal questions arise: Are gene transplants considered to be a type of

perverted sex act between the gene donor and the recipient? Would such transplants be forbidden, in particular, if donor and recipient were close relatives? Would a child conceived from such a manipulated ovum or sperm be regarded as related to the gene donor? Rosenfeld draws parallels from the rabbinic responsa dealing with ovarian transplants (Schwartz, Y. *Va-Yelaket Yosef* Vol. 10:3,4,6, & 9 [5668]). He concludes that since no sex act is involved in a gene transplant, the recipient is not forbidden to marry the donor's relatives and the child conceived and born following a gene transplant is not related to the gene donor.⁹

CONCLUSION

Increased medical knowledge and technological advances in the past decade have made organ transplants, genetic engineering, cloning, artificial fertilization and host mothers a reality. The potential risks, potential benefits and ethical considerations of such research and its applications must be carefully considered. Tampering with the very essence of life and encroaching upon the Creator's domain are considerations worthy of extensive discussion from the Jewish standpoint. Are we creating artificial human beings bordering on *golems*? The Talmud (*Sanhedrin* 65b) describes an artificial man (*golem*) created by Raba. Is such a *golem* human? The Talmud (*Niddah* 31a) tells us that:

There are three partners in man, the Holy One, blessed be He, his father and his mother. His father supplies the semen of the white substance out of which are formed the child's bones, sinews, nails, the brain in his head and the white in his eye. His mother supplies the semen of the red substance out of which is formed his skin, flesh, hair, blood and the black of his eye. And the Holy One, blessed be He, gives the spirit and the breath, beauty of features, eyesight, the power of hearing and the ability to speak and walk, understanding and discernment.

The spiritual and theological aspects of genetic engineering and DNA recombinant research also require exploration. Rabbis must examine these issues from the Jewish standpoint and offer legal guidance to the medical and lay communities. In the meanwhile, Jakobovits expresses sentiments which we should all take to heart:

It is indefensible to initiate uncontrolled experiments with incalculable effects on the balance of nature and the preservation of man's incomparable spirituality without the most careful evaluation of the likely consequences beforehand . . .

"Spare-part" surgery and "genetic engineering" may open a wonderful chap-

ter in the history of healing. But without prior agreement on restraints and the strictest limitations, such mechanization of human life may also herald irretrievable disaster resulting from man's encroachment upon nature's preserves, from assessing human beings by their potential value as tool-parts, sperm-donors or living incubators, and from replacing the matchless dignity of the human personality by test-tubes, syringes and the soulless artificiality of computerized numbers.

Man, as the delicately balanced fusion of body, mind and soul, can never be the mere product of laboratory conditions and scientific ingenuity. To fulfill his destiny as a creative creature in the image of his Creator, he must be generated and reared out of the intimate love joining husband and wife together, out of identifiable parents who care for the development of their offspring, and out of a home which provides affectionate warmth and compassion.

NOTES

1. Fred Rosner, "Artificial Insemination in Jewish Law," *Judaism*, 19(1970), pp. 452-464; Immanuel Jakobovits, "Artificial Insemination," in *Jewish Medical Ethics* (New York: Bloch, 1975), pp. 244-250.
2. Fred Rosner, *Medicine in the Bible and the Talmud* (New York: Ktav & Yeshiva Univ. Press, 1977), pp. 173-178.
3. Azriel Rosenfeld, "Generation, Gestation and Judaism," *Tradition* 12 (1), (Summer 1971), pp. 78-87.
4. J. David Bleich, "Host Mothers," in *Contemporary Halakhic Problems* (New York: Ktav & Yeshiva Univ. Press, 1977), pp. 106-108.
5. Immanuel Jakobovits, "Eugenics" in *Jewish Medical Ethics*. (New York: Bloch, 1975, pp. 261-266.
6. With regard to genetic screening and amniocentesis see, Fred Rosner, "Tay-Sachs Disease: To Screen or Not to Screen," *Journal of Religion & Health*, 15 (1976), pp. 271-281.
7. Azriel Rosenfeld, "Judaism and Gene Design," *Tradition*, 13 (2), (Fall 1972), pp. 71-80.
8. Fred Rosner, "The Jewish Attitude Toward Abortion," *Tradition*, 10 (2), (Winter 1968), pp. 48-71; J. David Bleich, "Abortion in Halakhic Literature," *Tradition*, 10 (2), (Winter 1968), pp. 72-120.
9. According to Rosenfeld in most organ transplants (kidney, cornea, heart, ovary, "gene") the organ becomes an integral part of the recipient. The only exception, says Rosenfeld, may be the brain since there is evidence to support the position that the legal identity of a person follows the brain. Azriel Rosenfeld, "The Heart, the Head and the Halakhah," *New York State Journal of Medicine*, 70 (1970), pp. 2615-2618.