Embryonic Transfer Encyclopedia Article

Embryonic Transfer

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Embryonic Transfer

Embryonic transfer is the transfer of an embryo from the uterus of one female to the uterus of another. English doctor Walter Heape first performed successful embryo transfer in 1890 when he removed embryos from a female rabbit and placed them into a female hare which subsequently gave birth. Further animal experiments were carried out on 15 different species. Embryo transfer became a valuable technique in the cattle industry; superior animals could produce large numbers of embryos, which could then be carried by less valuable cows.

Human embryo transfer got its start in 1972 when a Chilean team led by Horacio Croxatto described their technique for flushing an unimplanted, unfertilized egg out of the uterus. Brothers Randolph Seed, a surgeon, and Richard Seed, head of a cattle-breeding company, emulated Croxatto's technique in 1980 to recover a fertilized egg. They founded a company called "Fertility and Genetics Research," which funded a medical team at Harbor-UCLA Medical Center in Torrance, California, headed by John E. Buster and Maria Bustillo, which began treating a group of infertile women and advertised for egg donors. Healthy donors were matched with recipient couples for blood type, Rh, and hair and eye color. As each donor reached readiness for ovulation, she was inseminated with sperm from the recipient's husband. Since a fertilized egg does not implant in the uterus immediately, uterine lavage (washing) was performed on each donor five days after insemination. Recovered embryos, or blastocysts, were then transferred to the uterus of the recipient. Two transfers performed by the Bustillo-Buster team in 1983 resulted in the birth of two babies early in 1984.

Embryo transfer is a valuable technique for overcoming infertility in women who are unable to produce viable eggs or who are at risk for transmitting genetic disease. It carries risks of infection for both donor and recipient and of unwanted pregnancy for the donor if the embryo implants in the uterine wall before washing occurs. Legal and ethical issues are involved, since the embryo recipient--the woman who carries and gives birth to the child--is not the child's genetic mother. Medical ethics also became involved when Fertility and Genetics Research tried to patent the transfer technique for profit.