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## From the Editor's Desk

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## From the Editor's Desk



### *Fetal Transplantation and In Vitro Fertilization*

In an article published in *Science*, a patient is described who benefitted from the transplantation of fetal tissue.<sup>1</sup> The summary of the article gives the details as follows:

Neural transplantation can restore dopaminergic neurotransmission in animal models of Parkinson's disease. It has now been shown that mesencephalic dopamine neurons, obtained from human fetuses of 8 to 9 weeks gestational age, can survive in the human brain and produce marked and sustained symptomatic relief in a patient severely affected with idiopathic Parkinson's disease. The grafts, which were implanted unilaterally into the putamen by stereotactic surgery, restored dopamine synthesis and storage in the grafted area, as assessed by positron emission tomography with 6-L-[<sup>18</sup>F]fluorodopa. This neurochemical change was accompanied by a therapeutically significant reduction in the patient's severe rigidity and bradykinesia and a marked diminution of the fluctuations in the patient's condition during optimum medication (the "on-off" phenomenon). The clinical improvement was most marked on the side contralateral to the transplant.

The methodology of this transplantation is described as follows:

Tissue was procured from four fetuses obtained at routine suction abortions, with informed consent from the women and with approval by the Research Ethical Committee at the University of Lund. The women were negative for HIV and hepatitis B. The fetuses were 8 to 9 weeks postmenstrual age (crown-to-rump

lengths measured with ultrasound were 20 to 25 mm.) The fetal tissue fragments were rinsed (5) and stored in buffered Hanks balanced salt solution (HBSS; pH 7.4) for 1 to 3 hours at room temperature. The ventral mesencephalon was dissected from each fetus and cut into six to ten pieces which were incubated in trypsin for 20 minutes (5) and then rinsed repeatedly with HBSS. The pieces were partially dissociated (5) in HBSS just before the first implantation in a final volume of approximately 80 ul. The time between abortion and initiation of implantation surgery was 2.5 to 4 hours. Implantation was performed at three sites in the left putamen with a stereotactic technique.

The success of this transplantation of fetal tissue speaks for itself. The demand for this type of therapy in the United States will undoubtedly be great if this type of experimental surgery is confirmed. Many commentators see the transplantation of fetal tissue as a promising avenue for treatment of juvenile diabetes and degenerative diseases like Parkinson's, Alzheimer's and Huntington's.

However the morality of the transplantation of fetal tissue is actively being debated at the present time. You will remember that the Department of Health and Human Services decided to continue its moratorium on federal funding of research involving fetal tissue transplants in March, 1988 and reiterated this ban recently. James O. Mason, M.D., Assistant Secretary for Health, stated that "Such research pits the rights of fetuses against patients who would be helped by it", and that in such a conflict, he felt "obliged to rule on the side of the fetuses".

This ban on funding does not include private research on fetal transplantation. During the debate at N.I.H., a distinction was made between abortion of the fetus and the research done with the fetus's remains. In other words, was it permissible to use the aborted fetus's remains for research even though abortion was immoral? This where the debate centers at this moment. Shall the remains of the fetus be treated in the same fashion as the cadavers of persons who have died? Cadavers are allowed to be experimented upon to benefit mankind, presuming proper permission has been obtained. Is it permissible to experiment with recently aborted fetuses in the same fashion? Does the consent of the parent to experimentation with her fetus appear to be a valid type of consent when one considers the mother who authorized the fetus's destruction? Many scientists ignore this sequence of events and concentrate on the benefits to be derived from this experimentation for the benefit of mankind? What is the basic moral guideline to follow when faced with this quandary?

What are the implications for mankind if this type of research continues on its present course? In this utilitarian age, where the sacredness and dignity of the individual are sacrificed for the "good" of the community, one must look forward with apprehension to the future.

The same apprehension applies to the current debate going on in regard to embryonic research and in vitro fertilization. The House of Lords in London recently voted overwhelmingly to continue embryonic research in Great Britain. In a series of articles in the London-based *Tablet*.

(February-March, 1990), various commentators bring out the pros and cons in this debate. One must ask where this research is leading and what are the ethical and moral implications. Again, one must admit that the utilitarian view seems to be prevailing to the detriment of the individual.

It is incumbent upon society to study and reflect upon the direction of medical research and its consequences. As has been mentioned about war, it is too important to be left up to the generals. The same could be said about medical research. It is too important to mankind to be left up to the medical scientists. However, when the body politic was involved in this debate (House of Lords), humanity did not fare too well. The House of Lords made its decision based on utilitarian principles. Whither will the United States go in this debate? At present, the prospect for the individual's sacred rights and innate dignity, given by God, is in serious JEOPARDY.

— John P. Mullooly, M.D.

#### Reference

1. *Science*, Vol. 247, pp. 574-577 (2 Feb., 1990), Lundvall et al, entitled "Graft of Fetal Dopamine Neurons Survive and Improve Motor Function in Parkinson's Disease", a patient is described who benefitted from the transplantation of fetal tissue.

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