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The Politics of Transplantation of Human Fetal Tissue

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features — a midsystolic click and a late systolic murmur that shift in timing with posture and other maneuvers — are detected. The diagnosis can also be made on the basis of prominent late systolic prolapse on an M-mode echocardiogram or clear-cut billowing of the leaflets in the parasternal long-axis view on a two-dimensional echocardiogram.^{1,3,4,6} Antibiotic prophylaxis for dental or other invasive procedures should be given to patients with mitral-valve prolapse and mitral regurgitation detected by auscultation or Doppler echocardiography and possibly to other high-risk patients with the disease in view of the known intermittency of mitral murmurs in this condition.^{1,6} The presence and severity of associated mitral regurgitation appear to be the best guides to the frequency of clinical and laboratory follow-up of patients with mitral-valve prolapse.⁶ The identification by two-dimensional echocardiography of patients with mitral-valve prolapse and mitral valvular enlargement and thickening confirms the findings of other methods, and may someday supplant them.

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SOUNDING BOARD

THE POLITICS OF TRANSPLANTATION OF HUMAN FETAL TISSUE

RESEARCH involving human fetal tissue has been the subject of intense political debate in this country for almost two decades, and the use of fetal tissues in transplantation continues this controversy in another forum. Since *Roe v. Wade*,¹ the landmark decision on abortion by the U.S. Supreme Court in 1973, the federal government has focused public attention on fetal research by creating panels of experts. For example, in 1974 Congress created the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and made the formulation of regulations on fetal research the first item on its agenda. The resulting regulations were reasonable, but no federally funded research on either fetuses or in vitro fertilization was ever done, primarily because of the Reagan administration's view of the moral status of the human embryo.

Current federal regulations permit the use of tissue from dead fetuses in experimental transplantation when it is conducted in accordance with state law.² All states but eight (Arizona, Arkansas, Illinois, Indiana, Louisiana, New Mexico, Ohio, and Oklahoma) permit such experiments.² Nonetheless, ethical concerns remain, and there has been continued political resistance to funding such research with public money. Ethical issues cannot be resolved by a vote of experts, but they can help to define and clarify issues publicly and to build a consensus. They also serve to take the political heat off elected officials with respect to controversial issues, and this is a relevant factor in whether public funding is approved.

The most recent series of disputes began in October 1987, when the National Institutes of Health (NIH) submitted a request to the assistant secretary for health in which the NIH sought approval to fund the transplantation of human fetal tissue into the brain of a patient with Parkinson's disease. In March 1988, Assistant Secretary Robert Windom asked that the NIH establish a special advisory panel to study 10 questions about fetal-tissue research. And in May a moratorium was announced on the use of fetuses from elective abortions in federally funded research.

The 21-member Human Tissue Fetal Transplant Research Panel subsequently created by the NIH invited more than 50 people, including the representatives of 16 groups, to present their views in public sessions. On December 5, the panel finalized its report,³ and on December 14 the advisory committee to the NIH director adopted it unanimously. Wisely, the panel separated questions concerning the use of fetal tissue from those involving abortion — a legally and ethically appropriate move, but perhaps ultimately a politically untenable one. While the panel was still deliberating, the White House sent draft regulations to the secretary of health and hu-

man services that proposed a prohibition of the use of federal funds in any research involving fetal tissues.⁴ Nonetheless, the new secretary, Louis Sullivan, has told Congress that the issues could be separated, and he will study the panel's report before making a decision.⁵ The final decision will provide an early signal of President Bush's willingness to let the politics of abortion dictate the course of the research that is done by government scientists and funded with federal money.

The panel's task was somewhat simplified by its decision to limit discussion to the use of tissue from dead fetuses and its rejection of any intrafamilial donations or payment for fetal tissue — rulings consistent with an October 1988 amendment to the National Organ Transplant Act. The panel concluded that although it was of "moral relevance" that the fetal tissue be obtained from an induced abortion (rather than a spontaneous abortion or an interrupted ectopic pregnancy), the use of the tissue in research was "acceptable public policy" because "abortion is legal and . . . the research in question is intended to achieve significant medical goals."³ This conclusion was accepted on a vote of 15 to 2, and included recommendations that the decision to abort be kept independent of the decision to retrieve and use fetal tissue, that recipients be informed of the tissue's fetal origins, and that fetal tissue be accorded the same respect given other cadaveric human tissue.³ In answer to the remaining questions, the panel adopted the following recommendations: the decision to abort must be made before the use of the tissue is discussed; anonymity should be maintained between donor and recipient; the timing and method of the abortion should not be influenced by the potential use of the fetal tissues; and the consent of the pregnant woman is necessary and sufficient for the use of tissue unless the father objects.³ The panel also concluded that "there is sufficient evidence from animal experimentation to justify proceeding with human clinical trials in Parkinson's disease and juvenile diabetes."³

Many of these recommendations were adopted unanimously, and no more than two panel members dissented from any of them. The most illuminating part of the report, however, was not its bland prose, but the dissent and the responses it evoked, because these exchanges encapsulated the national debate.

In their dissent, attorney James Bopp and Professor James Burtchaell argued that research with fetuses aborted electively is "ethically compromised" by the lack of authentic informed consent, the incentives it offers for more abortions, and its complicity with the abortion.³ The consent issue involves the standard argument that a woman who decides to abort her fetus forfeits all rights and interests in the fetus and its remains.^{3,6} The incentive argument posits that many women are ambivalent about abortion, and that such ambivalence may be tipped in favor of abortion if the women are informed that some good may come of it.^{3,7}

The complicity argument, as stated by the dissenters, is primarily an emotional appeal based on an analogy to Nazi experimentation.

Professor John Robertson's response was joined by nine other panel members. He noted that a woman does not lose or forfeit all interest in an aborted fetus simply by choosing abortion. If she did, he said, this "would lead to a policy of using fetal remains without parental consent or to a total ban on fetal transplants."^{2,3} The assertion that the number of abortions will increase is "highly speculative," and Robertson argued that even "some" increase in the number of abortions would not make fetal transplants unacceptable, because such logic would assume "that even a marginal increase in abortion should bar fetal tissue transplant research."^{2,3} Robertson rejected the complicity argument completely, noting first that society's mere willingness to use the organs of persons killed in automobile accidents or murdered does not mean that society or transplant surgeons are accomplices in automobile accidents or murder. Finally, the Nazi analogy fails because those experiments were conducted on live, unconsenting patients, who suffered greatly from them, whereas research on fetal tissue involves only the dead remains of lawfully aborted fetuses, which cannot be harmed, and such research is done only with consent.^{2,3}

The dissenters' primary argument was that federal funding of fetal research would "institutionalize" governmental complicity with the "abortion industry"^{2,3} — a superficially appealing claim, perhaps, except that the federal government already profits directly from those who perform abortions, by taxing their earnings.

Those with serious misgivings about the use of dead fetal tissue are surely correct when they point out that dead fetuses cannot be equated with dead hamsters or human kidneys. Nonetheless, it is difficult to justify the use of the organs and tissues of dead children in transplantation without permitting the transplantation of tissue from dead fetuses. Some who object may be reacting not to the use of the fetus, but to the role of the not-to-be mother, and it can be argued that the panel did not address this role adequately. Kathleen Nolan has argued that the image of the "devouring mother" is an especially powerful and destructive one in our view of women as mothers. In her words,

by allowing tissue retrieval, [these women] seem to "fail to protect" the dead fetus, letting it fall prey to the needs of others. Subliminally this threatens unconscious beliefs about the role of women as mothers. . . . No matter that the fetus is dead — mothers should still fend off the scavengers.⁸

The images of research physicians as scavengers and of mothers as indifferent to the fate of their deceased children are disturbing to many. But the fetus lacks the status of a child⁹ and, after death, has no protectable interests of its own.² At the same time, like a dead adult, the dead fetus is not abandoned property and should be treated with respect because of what it

is and what it symbolizes. The mother's real role, like that of any surviving relative, is not to "consent" to burial or the use of body parts in transplantation. Rather, as the next of kin, she has the legal authority to dispose of the body in the customary manner (usually burial or cremation) and to object to any use of the body inconsistent with such customs, because of the mental anguish that such untraditional or disrespectful use of the body may cause her.¹⁰ Treating fetal remains with "respect" may mean not putting the fetus on public display, but when the choices include burial, incineration, or use in legitimate research, the third can be as respectful of the remains as the first two.

The report of the Stanford University Medical Center Committee on Ethics, which appears elsewhere in this issue of the *Journal*,¹¹ is fundamentally consistent with the report of the NIH panel. Together, these documents show wide agreement in the medical community on the major issues involved in the use of fetal tissue. One troubling difference must be noted, however. The Stanford report attempts to sidestep the question of elective abortion by recommending that "if tissue from spontaneous abortions can satisfy the medical demands for both quantity and quality of tissue, it would be preferable to avoid the ethical problems of using induced abortions." The use of tissues from fetuses aborted spontaneously is particularly problematic. It is now well established that about half of such fetuses aborted in the first trimester and 20 percent of those aborted in the second trimester are chromosomally abnormal.¹² Moreover, a variety of microorganisms have been associated with spontaneous abortions, including cytomegalovirus, herpes simplex types 1 and 2, rubella, toxoplasma, and *Ureaplasma urealyticum*.¹³ It would be indefensible to transplant abnormal or infected fetal tissue that could increase both the risk of a transplant failure and that of infection in the recipient. Tissue from spontaneously aborted fetuses should not be used for transplantation into a human subject.

The primary objection to the use of fetal tissues from elective abortions appears to be a political one: if it were therapeutically successful, such use would create a new constituency—sick people who would benefit from such transplants, and their families—that would be opposed to the prohibition of elective abortion. Of course, from a scientific and ethical standpoint, the central issue is whether it is reasonable to perform transplant experiments with fetal tissue at this time—a question neither panel attempted to examine in any depth. The politics of abortion have thus led us to focus on the tangential question of the tissue's source rather than the central question of its benefits to sick people. The subjects of the proposed transplant research are not the fetuses (which are dead), but the tissue recipients.

The first transplantations in patients with Parkinson's disease, in which the patient's own adrenal tissue

was used, attracted tremendous press coverage, and approximately 100 such procedures were performed in the United States on the basis of initial reports of success in Mexico.¹⁴ This experience indicates that local institutional review boards provide inadequate protection to the subjects of such research, just as they failed to protect the subjects of recent experiments with artificial hearts and xenografts.¹⁵ Adrenal-tissue transplantations have had very disappointing results,^{16,17} and serious questions have been voiced about the original Mexican cases.¹⁴

Fetal tissue is thought to have unique properties, and its use in patients with Parkinson's disease also subjects the patient to one less surgical procedure. Such transplantation for Parkinson's disease was first performed in Mexico and Sweden, with the Swedish researchers reporting "no improvement of therapeutic value" in their two patients to date.¹⁸ In December 1988 the American Academy of Neurology urged "great caution in expanding the current human experience except as research conducted in highly specialized centers."¹⁹ Nonetheless, at least two U.S. centers went ahead with fetal-tissue transplantation for Parkinson's disease (using private funds) before the NIH panel issued its report. Obviously, national panels of experts can be effective in setting guidelines only if privately funded researchers refrain voluntarily from conducting their own experiments while deliberations are proceeding.

There is no current method of regulating the clinical trials of new surgical procedures (as there is of trials of new drugs) and no effective way to regulate experiments financed privately, but the irresponsible proliferation of fetal-tissue transplantation procedures may persuade the White House and the public that such regulation is needed. It would be most beneficial to science and the public if such experimentation could be confined to a few centers of established excellence, where careful research could be pursued until the safety and efficacy of such transplantations are demonstrated. The NIH panel has given us an excellent beginning. But it is only a beginning, and should not be taken as a signal to proceed with trials that use fetal tissues for transplantation in patients. We have more scientific work to do, including work with animals, to help determine such things as cell survival, growth curves, and graft-host immunology.²⁰

Both panels also skipped lightly over some practical issues, including how the abortion is performed. It is feasible, in fact, to remove the fetus whole with the concurrent use of ultrasound to aid in directing instruments within the uterine cavity. If the use of fetal tissue proves therapeutic, there will be women willing to consent to such a procedure. If the abortion can be performed in a way that enhances the potential usefulness of the fetal tissue, without additional risk to the woman, there will also be tremendous pressure to adopt this technique. More discussion is needed of the

choices a woman should be given with respect to the abortion procedure itself, as well as its timing.

The relationship between the physician performing the abortion and the researcher also requires additional discussion. We believe that the woman should be asked about the use of her fetus as a source of tissue after she has decided to have an abortion but before the abortion has taken place. Afterward, she should be given an opportunity to withdraw her consent. When the physician has performed the standard inspection of the tissue to make sure that the abortion is complete, the tissue should be taken from the operating room and turned over to the researcher. The dissection of the tissues should be performed in a restricted facility designed to optimize the success of the procedure (e.g., a sterile environment and proper dissecting instruments). We would go beyond the recommendations of the Stanford report to suggest that to avoid any conflict of interest there should be no academic incentive (such as coauthorship of publications or grant support) or other incentive for the physician performing the abortion or anyone else involved in the woman's care, to obtain her agreement for the use of fetal tissue.

Transplantation challenges our ethical precepts, and traditionally ethics have taken a back seat to the temptations and incentives to perform transplantations that are the first of their kind. Despite this, the public has generally applauded such transplantation, at least when it is seen as an attempt to save a life that otherwise would certainly have been lost. Transplantation involving fetal tissue is much more problematic, and the public may be less forgiving of ethical shortcuts. Saving a life is usually not at issue, and the source of the tissue, although not illicit, is troublesome to many. The world is watching, and this opportunity to demonstrate good science, good ethics, and compassionate patient care should not be wasted.

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MORALITY FOR THE MEDICAL-INDUSTRIAL COMPLEX

To the Editor: Engelhardt and Rie (Oct. 20 issue)¹ declare that the profit motive in medicine is not itself evil. "Medicine is not an endeavor of amateurs nor usually of mendicant friars." As a member of a mendicant order, the Order of Friars Minor (Franciscans), and a practicing physician, I write to offer a different perspective on the morality of corporate profit-making by the "medical-industrial complex."²

Making a living is certainly not immoral. St. Francis himself, in writing the Rule for his mendicant friars, alluded to Luke 10:7, where it is written, "the worker is worth his wage."³ While it is true that the history of medical ethics is littered with controversies regarding fees and the economic concerns of physicians, these examples do not justify the notion that profit-making is central to medicine. Instead, they serve to warn us that physicians, like all human beings, may succumb to the urge to take more than the wage that is due them.

The covenant between patient and physician is based on the understanding that a sick person is especially vulnerable to such exploitation.⁴ A sick person must trust that the physician's first interest is to serve the needs of the sick, before serving the goal of personal profit. The medical profession must zealously guard that trust. The mass marketing of medicine for profit endangers it.⁵

Flexner included altruism among the characteristics that define a profession.⁶ Can genuine altruism be marketed, as Engelhardt and Rie suggest? They propose a strange sort of altruism, which dumps the poor and is achieved only by an appeal to the profit motive.

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