MEDICINE

Intelligent Design

In recent years, the *New England Journal of Medicine* has developed a greater editorial voice, commenting not only on medicine but on cultural and societal trends. In the October 6, 2005, issue, not only did the journal give a perspective on Medicaid funding and global warming, but it took a position on intelligent design. In "Faith Healers and Physicians—Teaching Pseudoscience by Mandate," deputy editor Robert S. Schwartz, M.D., expresses fears that the teaching of intelligent design will reach medical schools. He states that "intelligent design constitutes an insidious menace to medicine" and defines its proponents as teaching pseudoscience. He compares Cardinal Schönborn, the Archbishop of Vienna, to Joseph Stalin, who forbade the public teaching of evolution in the Soviet Union.

It seems that Schwartz has not appreciated the nuanced comments of Cardinal Schönborn, which unambiguously allow acceptance of evolutionary theory in Catholic teaching as long as the creative and generative role of God in history is affirmed. Could it be that Dr. Schwartz has, in fact, himself espoused an ideology restricting the free exchange of thought concerning creation and science? Certainly within the Church that free exchange of ideas continues even at the highest levels of the hierarchy. For the time being, this issue will continue to find its way into both courts of law and public debate.

Public Health Emergencies and the Role of the Physician

In the October 4, 2005, issue of the *Annals of Internal Medicine,* Bernard Lo and Mitchell Katz present an essay titled "Clinical Decision Making during Public Health Emergencies: Ethical Considerations." The authors remind us that the emergence of severe acute respiratory syndrome (SARS) and the vaccine shortages of recent times "dramatize the need for restrictive public health measures such as quarantine, isolation, and rationing." Ethical dilemmas arise in such public health emergencies mainly because personal autonomy conflicts with public health interests, as when patients object to emergency measures. Lo and Katz point out that, historically, a physician's primary responsibility is to the individual patient, but in public

health emergencies the physician's role changes. Although they are still patient advocates and must recognize due process, the need for public safety means that their primary responsibility is to the public. The authors point out that physicians can still advocate on behalf of their patients by changing policies and tempering the negative consequences of public health restrictions. This contribution to the literature is welcomed, and it sets out a reasonable approach to unavoidable conflicts. Although utilitarian philosophical thought underpins the authority of public health measures, it is ultimately based on the individual's right to health and life, which may, at times, require the sacrifice of many.

Fetal Pain

In the words of the neonatologist Dr. Carlo Bellieni, the fetus is "already a member of the family and company for the mother even before being born."[1] It is therefore not surprising that Susan Lee et al.'s "Fetal Pain: A Systematic Multidisciplinary Review of the Evidence," in the August 24, 2005, issue of *The Journal of the American Medical Association,* created a flurry of editorial and political commentary. Although it was previously mentioned in this journal, it seems important to reemphasize some of the concerns about this article.

In their retrospective review of the literature, which concerns itself with fetal perception of pain, or nociception, the authors suggest that fetuses younger than thirty weeks are unlikely to perceive pain. They also conclude that there is a lack of evidence addressing the effectiveness of direct fetal analgesic or anesthetic techniques. After publication of the article, it was discovered that two of the principal authors had overt ties to the pro-abortion movement, and one of them personally performs late-term abortions.[2] These facts do not necessarily alter the validity of the findings, but they clearly raise conflict-of-interest concerns. Fetal science is evolving, however, and further prospective studies are likely to bring greater clarity to the subject. Moreover, the study looked at first- and second-trimester fetal development only, and makes no comment on fetal perception later in pregnancy.

From a moral perspective, the presence or absence of fetal pain during abortion is irrelevant. Traditional Catholic teaching affirms the protection of human life from conception and finds its ultimate basis in the dignity of the human person as a creation in the image of God. Pain or no pain, the termination of nascent human life is gravely immoral.

Medically Assisted Nutrition and Hydration

At the other end of the spectrum, H. R. Pasman et al., in the August 8, 2005, issue of the *Archives of Internal Medicine*, provided an original investigation titled "Discomfort in Nursing Home Patients with Severe Dementia in Whom Artificial Nutrition and Hydration is Forgone." In a prospective, longitudinal, observational study of 178 patients in Dutch nursing homes, discomfort was measured on a scale

[1] Carlo Bellieni, "What the Unborn Sense in the Womb," interview by Zenit News Agency, *Zenit Daily Dispatch,* October 4, 2005 (doc. ZE05100422).

[2] Denise Grady, "Study Authors Didn't Report Abortion Ties," *New York Times,* August 26, 2005, late edition A15.

uniquely adapted to patients with Alzheimer's dementia. Levels of discomfort were measured in patients for whom a decision was made to forgo artificial nutrition and hydration, most often severely demented elderly women with acute illnesses. Not surprisingly, the level of discomfort was greatest at the time the decision was made and diminished after that. Shortness of breath, restlessness, and a physician's observation of pain were associated with higher levels of measured discomfort. The study results suggest that there was no increase in discomfort in patients who were no longer able to eat or drink. The authors admit that the observational nature of this study and its lack of a reference group limit the findings.

Better methods of quantifying discomfort in patients with dementia are clearly needed. There is no absolute ethical obligation to provide artificial nutrition and hydration to patients in a terminal phase of advanced dementia. (This is in stark contrast to patients in a persistent vegetative state, for whom there is this obligation.) However, persistent attempts at hand feeding patients with dementia should be considered an absolute minimum of care.

The Perspectives section of the November 15, 2005, *Annals of Internal Medicine* was dedicated to the Terri Schiavo case, approaching it from legal, ethical, and medical points of analysis. The lead author, Joshua E. Perry, J.D., is at the Center for Biomedical Ethics in Society, based at Vanderbilt University Medical Center. After a brief description of the legal aspects of the case, the authors discuss the competing ethical frameworks involved. While they recognize the moral framework that promotes the sanctity-of-life argument, the authors emphasize that respect for self-determination is the paramount principle involved in the Schiavo case. Although one must clearly admit that autonomy is critically important in medical ethics, a Catholic understanding rightly reminds us that the freedom to choose is always subordinate to choosing what is right. Florida law and federal jurisprudence may have functioned appropriately in the Schiavo case, but the outcome was still a profound moral failure.

Vaccine for Human Papillomavirus Infection

In October 2005, national media quickly grabbed hold of a report by Merck & Co. of a genetically engineered vaccine called Gardasil.[3] The vaccine is touted as having the ability to prevent infection with human papilloma viruses. These sexually transmitted viruses, particularly HPV 16 and 18, cause genital warts and are associated with the later development of cervical carcinoma. It is estimated that twenty million Americans have some form of HPV infection, and the clear impact on long-term health risks is staggering.

According to the Merck report, Gardasil was studied in 10,559 sexually active women in seventeen countries. The subjects' ages ranged from sixteen to twenty-six years, and none was infected with HPV 16 or 18 when the study began. Half were

[3] Merck and Co., "Merck's Investigational Vaccine Gardasil Prevented 100 Percent of Cervical Pre-cancers and Non-invasive Cervical Cancers Associated with HPV Types 16 and 18 in New Clinical Study," press release, October 6, 2005, available at http://www.merck.com/newsroom/press_releases/research_and_development/2005_1006.html.

vaccinated. After two years, twenty-one women in the unvaccinated group had developed cancerous or precancerous lesions, but none of the vaccinated women had developed disease. (A second analysis, however, showed the protection rate to be closer to 97 percent.) The vaccine also appears to protect recipients from HPV types 6 and 11, which are associated with genital warts. It is quite likely that we will see an HPV vaccine in the next one or two years.

This is certainly good news, and the vaccines should be regularly promoted in routine preventive care. One cannot forget, however, that the Christian mandate of chastity is the best prevention of sexually transmitted disease. Despite the physical prophylaxis that vaccines and condoms may provide, the moral and psychological health of the human person must also be protected.

Contraception

The Clinical Practice section of the November 17, 2005, issue of the *New England Journal of Medicine* highlighted "Long-Acting Methods of Contraception," by Herbert Peterson, M.D., and Kathryn Curtis. Intrauterine devices, progestin implants, and sterilization procedures were discussed. The review points out a multitude of potential complications of all the methods. The most common concerns were the infectious risks associated with intrauterine devices, menstrual irregularities with progestin implants, ectopic pregnancy and surgical risks with tubal ligation, and genital pain syndrome following vasectomy. These risks are low overall, but they are not imperceptible; therefore, full disclosure of risks is necessary before such interventions are advised.

Oral and topical hormonal agents pose even greater risks, however. Recently, the Food and Drug Administration warned that the Ortho Evra contraceptive patch exposed users to even higher estrogen hormone levels than previously reported.[4] An increase in the estrogen component of contraceptive pills is associated with a higher risk of thrombosis, and at least a dozen deaths of young women who used the patch have been reported. All the deaths were related to vascular complications, such as stroke and pulmonary embolism. Direct-to-consumer marketing of the Ortho Evra patch was quite successful, and Ortho-McNeil reports that more than five million U.S. women have tried it.[5]

The increased risk of breast and cervical cancer associated with chronic oral contraceptive use has long been debated. However, a reduced risk of ovarian and endometrial (uterine) cancer has also been associated with oral contraceptive use. In my clinical practice, I have seen three cases of pulmonary embolism related to the use of oral contraceptives, despite the fact that I do not prescribe or advocate their use. Thus, from a strict health perspective, natural family planning (NFP), based only on

[4] "FDA Updates Labeling for Ortho Evra Contraceptive Patch," *FDA News,* November 10, 2005, http://www.fda.gov/bbs/topics/news/2005/NEW01262.html.

[5] Ortho-McNeil Pharmaceutical, "New Prescribing Information Announced for Ortho Evra Birth Control Patch," press release, November 10, 2005, http://orthoevra.com/html/pevr/newsroom_press_11102005.jsp?

the clinical signs of a woman's ovulatory cycles, may have great appeal. The NFP method has no medical risks and has been said to increase spousal communication and reduce the likelihood of divorce. More studies involving the marital benefits of NFP are necessary, although preliminary reports are positive and seem strongly plausible.

Abuse and the Family

The October 18, 2005, issue of the *Annals of Internal Medicine* featured a brief communication titled "Physical Abuse of Boys and Possible Associations with Poor Adult Outcomes." The authors, William Holmes and Mary Sammel, present initial data based on a telephone survey of 298 men. Psychiatric, sexual, and legal questions were assessed. Fifty-one percent of the study participants reported physical abuse, the majority perpetrated by parents. Such abuse was associated with depression, posttraumatic stress disorder, the number of lifetime sexual partners, legal troubles, and incarceration. Even when the data were appropriately adjusted, depression and posttraumatic stress disorder were persistent true outcomes.

The study was preliminary, and had a number of limitations, of course. However, the conclusion is common-sensical. The lack of a nurturing and loving environment has long been thought to increase the likelihood of stunted psychosexual development. In a broad sense, this is consistent with the natural law. The *Catechism of the Catholic Church* states that "the home is the natural environment for initiating a human being into solidarity and communal responsibilities" (n. 2224). Significant acts of physical, sexual, or mental abuse of children clearly increase the risk that these children will develop maladaptive social skills and suffer from mental illness. It is a true circular tragedy.

Diabetes and Obesity

The growing prevalence of obesity in the United States continues to cause alarm in the medical community. The onslaught of obesity-related illnesses, including diabetes mellitus and hypertension, will have a major impact on health-care resources. Cultural influences in favor of calorie-dense fast food and a lack of physical activity have pushed the trend significantly forward. As one who has personally allowed the trend to add unhealthy pounds, I took particular interest in two recent articles.

In the October 6, 2005, *New England Journal of Medicine,* Amir Tirosh et al. published "Normal Fasting Plasma Glucose Levels and Type 2 Diabetes Mellitus in Young Men." New guidelines currently define blood sugar (plasma glucose) levels above 100 mg/dl as abnormal, and those greater than 125 mg/dl as consistent with diabetes mellitus. Using data from men in the Israeli defense forces, aged twenty-six to forty-five years, the authors studied incidental cases of type 2 diabetes mellitus. After adjusting the data for age, family history of diabetes mellitus, body mass index, smoking status, triglyceride levels, and physical activity, progressive risk of developing diabetes mellitus was seen in men who had fasting blood sugar levels of 87 mg/dl or more. Subjects who had glucose levels below 81 mg/dl in the fasting state had the lowest risk. Adding other known risk factors to the mix, including serum triglyceride levels and body weight, helped to further stratify the risk of developing diabetes mellitus in healthy men who had no prior history of the disorder. It would appear that the bar of normality continues to be lowered, so that the normal is becoming an increasingly smaller propor-

tion of the whole. In any case, the perennial spiritual advice to take proper care of the body, including moderation of food and drink, takes on a new meaning.

For those with severe obesity, bariatric surgery (surgery on the stomach or intestines to help a patient lose weight) has become an increasingly popular approach to treatment. Previous studies have found improvement in key metabolic markers, such as sugar and blood pressure control, following bariatric surgery. Everything from arthritis to cholesterol levels seems to improve after the surgery. It is not surprising that I recently saw a highway billboard with before and after photographs of a woman who had undergone bariatric surgery. The billboard was sponsored by a Catholic hospital in the region.

While such surgery may indeed be an attractive long-term approach to this chronic disease, concerns about perioperative morbidity and mortality exist. David R. Flum and his coauthors reviewed early mortality among Medicare beneficiaries who underwent bariatric surgery, and published their work in the October 19, 2005, issue of the *Journal of American Medical Association*. The study was retrospective from 1997 to 2002 and involved more than 16,000 patients. The operative mortality was generally between 2 and 5 percent. However, the authors found a considerably higher risk of death after surgery in patients over the age of sixty-five years, and in those who had less-experienced surgeons. In my own practice I have witnessed amazing reversals of obesity-related diseases following bariatric surgery, but also occasional devastating morbid complications. Consequently, patients must be carefully selected for these procedures and must be formally informed of the risks before proceeding. My own hospital-based program requires months of preparation, including psychological testing and group meetings. This should be the norm.

Justice and Health

Catholic social teaching has uniformly pointed to the absolute necessity of justice in human affairs. Now a direct connection between health and justice has been established. In the October 24, 2005, *Archives of Internal Medicine,* results of the Whitehall II study were released (M. Kivimäki et al., "Justice at Work and Reduced Risk of Coronary Heart Disease among Employees"). This prospective study of male civil servants in London connected the incidence of coronary heart disease with the perception of justice in the workplace. The study showed that those who had the highest perception of justice had a 30 percent reduction in cardiac events. Perception of justice was assessed by asking participants about whether they received unfair criticism, praise, and sufficient and consistent information, and whether they had a supervisor who was willing to listen. The health benefit of justice seemed protective for heart disease even when results were adjusted for other factors, such as blood pressure, cholesterol, and tobacco use—proof again that good morals are essential to not only a good but a healthy life.

Pandemic Influenza

The medical and lay press has alerted us to the potential for an avian flu epidemic of biblical proportions. Some experts have questioned not if, but only when, the epidemic will occur. The pathogenic avian influenza A (H5N1) virus has already eradicated millions of chickens and ducks in Asia, and more than one hundred hu-

man cases have also been reported, with a mortality rate of 50 percent. In the 1918–1919 Spanish influenza pandemic, the mortality rate was 2.5 percent, the vast majority of patients dying from an aggressive hemorrhagic pneumonia.

The Bush administration has proposed a multifaceted initiative to combat an avian flu outbreak. Significant challenges confront medical and governmental agencies at the current time. Rapid production of an effective vaccine, large-scale manufacture of the antiviral drug oseltamivir, and effective communication and quarantine operations are among the major challenges. Issues of justice should encourage pharmaceutical competitors and partisan politicians to cooperate in achieving an adequate response to any future pandemic. Readers of this journal will find a helpful review, "Influenza 2005–2006," by Sherif Mossad, M.D., in the November 2005 issue of the *Cleveland Clinic Journal of Medicine*, and the government Web site http://www.cdc.gov/flu/pandemic/ is recommended. Prayer is also highly advisable.

End-of-Life Care

The sixth installment in a series about religion and end-of-life care was presented in the September 24, 2005, issue of *The Lancet*. Hazel Markwell, of the Centre for Clinical Ethics, based at Providence Healthcare in Toronto, presents the Catholic view. The opening paragraph has a cautionary note stating that Catholic bioethics "is not a fully monolithic structure." The author notes that differences of opinion on birth control, sterilization, reproduction, and abortion have resulted from disparate philosophical and theological methods, but she asserts that there is more common ground in Catholic teaching on end-of-life matters. It is not clear whether Markwell is simply acknowledging that dissident theologians argue against Catholic doctrine on many fronts, or whether she is suggesting that the Church has not settled the doctrinal position on reproductive issues, which would be misleading. What follows in the essay, however, is a solid explanation of much of Catholic teaching concerning end-of-life care, which could serve as an introductory text for any course on the topic.

Markwell stresses the Catholic values of human dignity and the interconnectedness of every individual. I especially endorse her focus on medicine as a covenant relationship, with roots based in biblical revelation and the Hippocratic tradition. An ethic of trust is foundational in such a setting. Markwell also does a fine job presenting Catholic teaching on the withdrawal of life support and the relief of pain and suffering. She concludes the essay with a summary consisting of eleven major points, all of which are salutary. The summary emphasizes the sacredness of life, Christ's incarnational reality, the nature of stewardship and accountability to the Creator, the value of the common good, and the importance of the sacraments. All in all, I would recommend that our readers review the entire Markwell essay, as it serves as an engaging and well-balanced presentation of our Catholic viewpoint.

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