Letters to the Editor

Should Surgeons Be Tested for Blood-Borne Pathogens?

To the Editor:

I am a cardiac surgeon infected with hepatitis C virus (HCV), and approximately 2 years ago, I realized that it was highly likely that I had infected one of my patients. Because of this, I have spent an inordinate amount of time reading and thinking about the ethical issues of HCV and other blood-borne pathogens. There is no doubt in my mind that cardiac surgeons are at higher risk than most other surgical specialists for acquiring and transmitting hepatitis C and other blood-borne pathogens.[1] Currently, I know of three reports of cardiac surgeons transmitting HCV during surgery to one, three, and five patients, respectively.[2-4] The most recent report comes from the United States and sparked a controversy over patient notification and disclosure.[3] In this case, three transmissions were recognized and confirmed from one surgeon; thousands of that surgeon's patients are now being contacted for testing in a look-back procedure. The State of New York Department of Health has directed the surgeon to obtain written consent preoperatively regarding his HCV. Transmission of hepatitis B virus (HBV) has been traced to cardiac surgeons in several clusters of infection. Because of this, HBV was included in human immunodeficiency virus (HIV) policies mandated in 1991, but there has been little enforcement of these policies. Most institutions seem to have adopted a "don't ask and don't tell" approach.

We are in blissful denial about the extent of this problem. Two percent of the general population is infected with HCV, but 30% to 40% of certain groups are infected. Prior to the availability of hepatitis B vaccine, 40% of surgeons contracted HBV infection. Now, with hepatitis B vaccination, most surgeons can be protected from HBV, but we have no protection from HCV. Even with universal precautions, there will be some accidental transmission of virus from patient to physician and from physician to patient. There are many things that can be done to lower the risk of transmission. For example, many cardiovascular surgeons and their assistants do not wear double gloves. They have the preconceived notion that they cannot operate wearing double gloves. I used to be one of those surgeons, but I am now certain that cardiac surgeons can operate effectively wearing double gloves. I know cardiovascular surgeons who still remove chest tubes without wearing gloves.

For years, I opposed testing of physicians for the obvious reasons, but now I think that surgeons should be tested for blood-borne pathogens when they join the medical staff of a hospital. Likewise, I think scrub nurses should be tested before they are hired. After that, both groups should be tested whenever there is a percutaneous injury or other significant blood exposure. Currently, hospital or clinic employees are tested following percutaneous injury and then again at a later date. This is mandatory if they are ever to claim a work-related infection. However, physicians do not usually follow through and get tested, although they do test patients. This testing should be mandatory. Most intraoperative, percutaneous injuries are not reported or recorded. A more ethical approach would be for serology to be drawn and reported to the injured any time there is a percutaneous injury during a procedure.

The state medical board in Arkansas has added HCV to the existing HIV and HBV policy. There is no provision for testing and I do not know of anyone who has addressed testing. In Minnesota, comprehensive legislation was passed in 2000 for blood-borne pathogens (HIV, HCV, and HBV) in healthcare workers.[5] It is largely a self-reporting policy, however. The easiest way to avoid this is to avoid getting tested. There is little incentive for physicians to get tested. Many of my colleagues have never been tested for HCV. One of the problems with getting tested is that we do not have a logical, well thought out plan for how to manage the infected surgeon or healthcare worker. In this regard, the Minnesota law established individual monitoring of infected physicians who perform invasive procedures. The monitor signs a contract with regulated physicians in which they agree to entirely eliminate high-risk procedures from their practice and to modify other techniques to make them safer. The Minnesota law does not require that surgeons obtain patients' informed consent after making them aware of the possibility of HCV infection. After a physician is in the monitoring program, mandatory testing and medical reports are required. If physicians clear the virus, they are still tested another year.

In my discussions with officials in the hepatitis division of the Centers for Disease Control and Prevention (CDC) regarding transmission of HCV by surgeons, they have discounted the case reports from Europe and pointed to the lack of reports in the United States. Studies used to estimate the number of infected physicians are severely flawed. After I reported my own case and possible transmission to one of my patients to the state health department, I learned that new cases of hepatitis C are officially recorded by the health department only if they are considered "acute hepatitis C." This is based on the level of alanine aminotransferase rising above the normal limits, which was recently increased from 4 times normal to 6 times normal based on recommendation of the CDC. Because of this policy, most health departments record only a tiny fraction of all the newly diagnosed cases of HCV. Less than 1% of newly recognized HCV cases were reported as acute hepatitis C in Minnesota in 2000.[6] Only a small minority of surgical patients infected with HCV become symptomatic and even fewer do so early enough to recognize any

possible relationship to their prior surgery.

After my diagnosis in 1999, I found little reassurance from information provided by the CDC and the Society for Hospital Epidemiology of America (SHEA). The CDC based its lack of recommendation on the lack of reported cases of transmission. But, as best that I can tell, this was based on "we never looked." One of the occupational health experts whom I contacted (Dr. Paul Rountree, University of Texas) did a mathematical model of cumulative risk based on logical but conservative assumptions. He concluded that I would have a greater than 50% risk of transmitting the virus during 10 years of practice. A similar conclusion was reached by an independent analysis.[7] In my case it was already 100%, because, as mentioned above, I already knew of at least one of my patients whom I had probably infected.

When does a surgeon become a definable risk to his or her patients or institution? When should informed consent be required? Can monitoring and practice modification make informed consent unnecessary? These are tough questions for which more data are still clearly needed. I really do not believe we have reached a national consensus. One thing is for sure, the public in New York does not accept the CDC's current position on informed consent and I am not surprised. Like it or not, we are going to have to deal with this issue.

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Protecting Patients From Surgical Hepatitis C Virus Infection

To the Editor:

Healthcare workers probably risk occupational infection from patients with major blood-borne pathogens such as hepatitis B virus (HBV), hepatitis C virus (HCV), or human immunodeficiency virus (HIV) more often than they transmit blood-borne pathogens to their patients. Surgeons and other healthcare professionals infected with a blood-borne pathogen who perform exposure-prone invasive procedures, as defined by the 1991 Center for Disease Control (CDC) guidelines,[1] pose a small risk of transmission to patients via inadvertent intraoperative blood exposure from sharps injuries, absent other identified routes of transmission.

The risk of transmission by a contaminated needlestick from HCV-infected patients to healthcare workers is approximately 2%.[2] Although the seroprevalence of HCV in the United States is approximately 1.8% (corresponding to an estimated 3 to 4 million HCV-infected individuals), the seroprevalence of HCV among hospital-based patients is 5.2% (3-fold higher than that for the general population).[3] The risk of transmission of HCV to surgeons is 20- to 40-fold greater than the risk of transmission of HIV (comparative source prevalences × transmission risks). Once infected, a surgeon risks transmission of blood-borne pathogens in the reverse direction (to patients). This risk is small, but not zero, and should not be ignored.

The 1991 CDC guidelines for preventing transmission of HIV and HBV from infected surgeons included Expert Review Panels to determine restrictions or modifications of practice procedures and prospective informed consent for surgeons infected with HBV or HIV to continue operating. These recommendations became a requirement in the United States with enactment of 1991 public (federal) law #102-141. These recommendations, originally driven primarily by intense concern about HIV, were written prior to current knowledge of risk of transmission of HCV by needlestick, testing, and curative treatments,[4] especially for acute infection.[5] The occurrence of clusters of HCV-infected surgical patients[6,7] with genetic verification of transmission from their surgeons compels us to revisit and add HCV to these recommendations.

In 1992, the South Carolina Medical Association developed an Expert Review Panel approved by the Department of Health in accordance with federal and state law and CDC guidelines for practice review and requirements. We have reviewed seven surgeons and other healthcare professionals performing exposure-prone invasive procedures infected with HIV or HCV whose status was discovered via voluntary testing and who requested review. Four voluntarily ceased performing exposure-prone invasive procedures, two modified their procedures to reduce their risk of transmission to nil or obtained preoperative informed consent, and one unsuccessfully resisted any disclosure, informed consent, or notification of intraoperatively exposed patients. Most healthcare professionals have assumed that disclosure and informed consent are career-ending events, whereas alternative, career-limiting options exist that have been successfully implemented. Further, with current successful curative therapies (albeit with side effects), HCV-infected surgeons now often opt for a 1-year hiatus from exposure-prone invasive procedures while therapy clears their virus.

Currently, HCV-infected surgeons' options include (1) eliminating any risk of transmission to patients by voluntarily observing the Hippocratic Oath's tenet "primum non nocere," ceasing to perform exposure-prone invasive procedures, using curative therapies, or moving to supervisory or academic settings; (2) obtaining recommendations from the Expert Review Panel and getting informed consent from patients; (3) waiting until a cluster of infected patients is discovered before getting tested, undergoing investigation, and then undergoing the above process; or (4) silently avoiding disclosure, informed consent, and even notification of patients regarding inadvertent intraoperative patient exposures (an