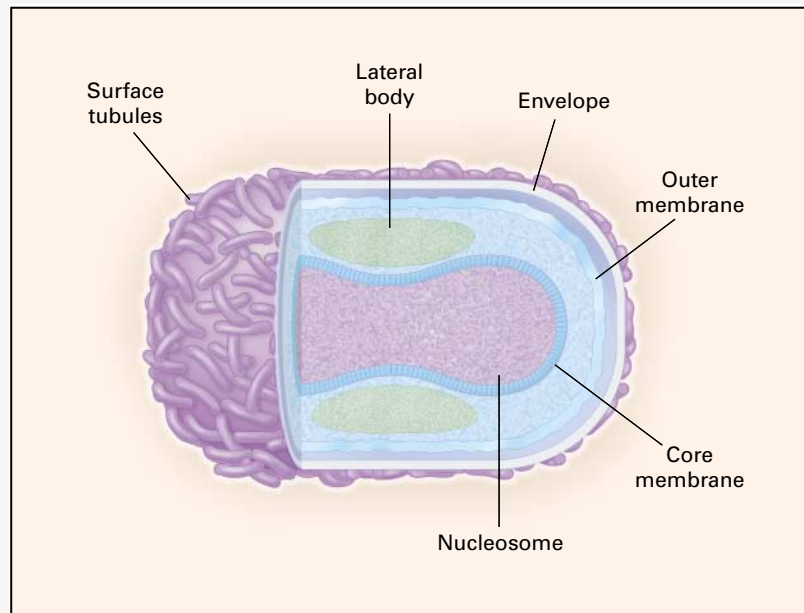


PERSPECTIVE

Smallpox and Bioterrorism

This issue of the *Journal* contains more information about smallpox than I hope you will ever need. Smallpox was eradicated as a naturally occurring disease over 20 years ago. Thus, any new case of smallpox would have to be the result of human misadventure, either planned or unplanned, involving the laboratory stocks of the virus that were retained in the United States and the former Soviet Union when the disease was contained. Is smallpox a threat to our health? At the present time, there is no way to know. If smallpox virus is in the hands of bioterrorists, then it could be a threat. If all the infective virus is securely held by responsible authorities, then it is not a threat. Since virus stocks cannot be tracked with accuracy, it is impossible to know the answer to this important question. This issue of the *Journal* brings you a considerable amount of information about a killer disease that we can no longer ignore. The goal is to educate and inform.

Two Original Articles in this issue^{1,2} demonstrate that our current stocks of smallpox vaccine can be diluted 5-to-10-fold without substantial loss of efficacy. Immunity comes at a cost. Even in these well-controlled trials involving healthy young adult volunteers there was considerable morbidity, including both systemic effects and substantial local reactions. A Review Article about smallpox that will appear in the April 25 print issue of the *Journal* provides additional information to help medical professionals recognize and treat this condition when and if it occurs.³ Unfortunately, even if we all be-



The Smallpox Virus.

come well acquainted with the clinical presentation of smallpox, by the time the disease is recognizable, it will probably be too late to prevent hundreds or thousands of deaths. Thus, the most pressing question is whether we need a preemptive vaccination campaign against smallpox. The decision on such a plan depends on the likelihood that terrorists will use smallpox as a weapon. A year ago it seemed unthinkable. Recent events, however, have raised the possibility that such an attack could conceivably occur. In an editorial in this issue,⁴ Fauci frames the critical issues about smallpox vaccination and calls for an open and thorough debate on this subject. I strongly agree.

To open the debate, Bicknell, in a Sounding Board article,⁵ outlines the case for mass vaccination. He provides realistic estimates of the incidence of deleterious side effects and the number of deaths that might occur if we immunize the entire population. One such hazard, disseminated vaccinia, is illustrated in the Image in Clinical Medicine

in this issue of the *Journal*.⁶ The risk of this complication is especially great in persons with undiagnosed immunodeficiency syndromes. Bicknell also outlines what might ensue if we do not immunize the population and a coordinated smallpox attack occurs. A letter to the editor from Dworetzky⁷ provides a first-hand account of managing a reasonably contained smallpox epidemic. It is clear from his description that as a U.S. Army physician during World War II, he felt personally threatened in dealing with smallpox even though it was a disease to which he was immune.

The final decision on the best course of action for the country should be made after all the potential risks and benefits have been carefully weighed. We need to hear from those with the greatest knowledge of the subject, and we need to consider what operational plans might be workable. If we do proceed with large-scale vaccination, we need to consider who should be immunized, when they should be immunized, and how to reduce unin-

tended sequelae. Although medical facts frame the decision-making process, the choice in the end will be in the hands of our government officials.

In my opinion the people of the United States have made it clear since September 11 that they are willing to make sacrifices for the common good. The debate on pre-emptive vaccination cannot go on indefinitely; we need to make a decision. I believe that if the decision

calls for widespread vaccination, despite its attendant risks, we will accept those risks bravely, with our sleeves rolled up, ready for action.

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