



## Pathology Biology Section – 2003

### G19 Smallpox and the Medical Examiner/Coroner System

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The goals of this presentation are to familiarize the medico-legal community with the possible pathological presentations of the initial cases in a smallpox epidemic because of the probability that, in the event of a bioterrorist induce outbreak, such cases will be seen by these first line death investigators.

Medico-legal death investigators are very likely to be the first professionals coming into contact with deaths from a bioterrorist caused smallpox outbreak and must be prepared for this eventuality. This is because (1) in a new eruption of this disease in a non-immune population initial fatal cases often have atypical presentations, and will probably not be definitively diagnosed, even if coming under a doctor's care, and (2) few clinical physicians have seen even suspected cases of smallpox. Pathologists performing official autopsies will and should be called upon to examine such cases and must be cognizant of the possible appearance of any lesions and what specimens are required to confirm the diagnosis.

The threat of a bioterrorist attack in the U.S. using smallpox is being taken quite seriously by all, in spite of no known source of infection outside of either U.S. or Russian control. Terrorists have already done the unthinkable within the borders of the U.S. It is not impossible for bioterrorists to obtain smallpox virus from known or some unknown source. If smallpox were to be released into this country, a number of facts need to be considered by medical examiners who have a high probability of seeing the first undiagnosed cases.

- The probability of a medical examiner seeing these cases depends upon the particular state medical examiner law and the customary reporting procedures in the various jurisdictions. The laws governing public health hazard medical examiner jurisdiction and the customs in places without such statutes will be examined.
- Even without public health hazard jurisdiction, bioterrorist-caused deaths are a type of homicide and should be investigated and certified by the official medico-legal death investigation system. Medical examiners are fully aware of the legally necessary procedures, such as chain of custody in handling specimens that must be followed to support a criminal prosecution. How this may play out in an international terrorist attack within the U.S. will be discussed.
- This presentation will show what to look for in possible smallpox cases early in a bioterrorist attack. This is important because the first mortal cases will contain a high proportion of victims with atypical disease. Most of us, particularly those who received their medical training after the supposed eradication of smallpox in the early 1970's, received a superficial instruction in the clinical and pathological appearance of the disease. It is time for a knowledge booster.
- It must also be recognized that the civilian population in the U.S. has not been vaccinated against smallpox since 1972. This means that medical examiners do not have immunity to smallpox since vaccination is not effective after about 20 years! Unless there has been a policy shift to vaccinate medical examiners and pathologists performing medical legal autopsies before this presentation, a bioterrorist attack with smallpox is likely to cause casualties within the profession. It is also time for a smallpox immunity booster.

#### **Smallpox, Medical Examiners, Bioterrorism**