



The Laboratory Diagnosis of Rabies

PRODUCTION NO.: CDC 4-111, Released 1950

DATA: Motion Picture; Sound, Black & White; Time: 6 Minutes; Length: 200 Feet

GRAPHIC FORM: General photography and photomicrography.

PURPOSE

To aid in teaching the principles, procedures, and techniques necessary for the accurate laboratory diagnosis of rabies.

AUDIENCE

Laboratory technicians, State and local health department directors, public health officials, and medical and veterinary students.

CONTENT

Inasmuch as the presence of Negri bodies in the nerve cells of the suspicious animal is considered conclusive proof of rabies infection, the laboratory diagnosis of this infection consists of detecting these bodies.



The mouse inoculation test should always be carried out for Negri-negative and questionable brain specimens.

When the dog's head arrives at the laboratory, open the skull, remove the brain to a paper plate, and incinerate the rest of the head. With small, sterile scissors, cut through the cerebrum into the lateral ventricle to expose Ammon's horn be-

cause this glistening white tissue bulging from the ventricle floor is the surest location for Negri bodies. Remove to a wooden tongue depressor a thin cross section of Ammon's horn. Make several impressions on a single slide by applying the slide to the cut surface of the tissue. Immediately stain the impressions in Sellers' stain and rinse them under tap water. Dry the slide, locate well-distributed large cells in thin areas with the low power of the microscope, and then examine individual cells with the aid of the oil immersion lens.

The presence of Negri bodies indicates a positive diagnosis of rabies. These bodies characteristically contain dark staining basophilic granules. If Negri bodies are not readily apparent, search for them in sections of Ammon's horn, cerebral cortex, and cerebellum on each side of the brain. In case of doubt as to the presence of Negri bodies, inject intracerebrally into each of three mice (which have been anesthetized in a jar containing ether) 0.03 milliliter of a 10 percent brain suspension. Use a $\frac{1}{4}$ -milliliter tuberculin syringe and a $\frac{1}{4}$ -inch, 27-gage needle. After typical rabies symptoms have developed (rough hair, hump back, tremors, paralysis, prostration, and death), examine the brain of each mouse for Negri bodies, using the same procedures as those used with the dog's brain. Although rabies symptoms usually begin to appear from the fifth to eleventh day after inoculation, it is advisable to keep all test mice under observation for at least 21 days because in some cases the disease may take that long to develop.

COMMENTS

This information also is presented in filmstrip 5-105, "Laboratory Diagnosis of Rabies."