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The localization of *Bacillus proteus* x 19 in the subcutaneous tissues of the guinea pig by means of preliminary injections of carbon at different intervals.

By RALPH G. MILLS, CLIFFORD L. BARTLETT, and AN-CH'ANG LIU.

[From the Department of Pathology, Peking Union Medical College, Peking, China.]

1. The subcutaneous injection of *Bacillus proteus* x 19 into guinea pigs caused death from acute septicemia in a considerable percentage of cases; when a suspension of carbon was simultaneously introduced the mortality was definitely reduced, but when the injection of carbon preceded that of the bacteria by an appreciable interval this initial mortality was reduced to zero in a series of 61 animals. In an additional group of 9 animals in which the carbon and proteus were injected together there were no deaths, but among 21 guinea pigs in which the organisms were introduced without carbon, there were three deaths from septicemia.

2. The only obvious explanation for the absolute protection afforded these animals is a mechanical one, *viz.*, a blockade of the lymphatic drainage of the injection site.

3. The protection given by the lymphatic blockade is evidently a relative one, and depends more or less upon the limitation of the organisms to the injection area. Invasion of the blood stream, even in sub-lethal doses, was observed only in 7 instances, 4 in which the injection of carbon preceded that of the proteus by an interval of less than five hours, 1 in which the two suspensions were given simultaneously and 2 in which the organisms were injected alone. Complete protection was apparently afforded when the interval was sufficiently long, *i. e.*, five hours or more, allowing complete obstruction of the lymphatics to take place. The bacterial suspension evidently diffused somewhat beyond the actual point of injection, but was really limited by the obstruction of lymphatics over an area somewhat larger than that in which edema could be observed. Lines of carbon were seen stretching as far as 2 to 3 cm. from the point of actual injection.

4. The conclusions reached in the previous study and the observations recorded were confirmed and in some respects elaborated by these additional experiments. The virulence of the strain used was shown to be preserved during the interval between the two studies, and cultivation in a carbon lesion in the guinea pig and by passage through the eye of a rabbit failed to increase this virulence materially.

5. The agglutinative power of the serum from all animals was tested at different intervals and no constancy in its appearance, intensity or persistence was demonstrated. In a given individual it was practically independent of the intensity of the local or general reaction following injection and of the state of nutrition represented by interruption of expected weight increase, but somewhat increased by the persistence of bacteria in the lesion. The presence of carbon appeared to create conditions favorable for the production of agglutinins.

6. A sharp rise in temperature followed the injection of the organisms within two hours in all animals, representing the peak of the curve in a large majority. In almost every case there was a return to normal by the third day. This rise of 1 to 2° above that incident to the excitement created by the injection procedure was definitely referable to the effect of the introduction of the bacteria, but its exact cause is unknown.

7. Loss in weight following injection was observed in most animals, in some instances it was extreme. The loss was greatest and was made up more slowly when the injection of the bacteria followed that of carbon by a considerable interval. This was presumed to represent the influence of the bacteria persisting under the protection of the carbon.

8. Organisms were demonstrated in the lesions in 28 out of 38 surviving animals at least forty days after injection. The persistence was apparently not related to the manner in which the original injections had been made.