

Observations upon a Long-Surviving Cat with a Gross Bilateral Lesion in the Cervical Spinal Cord.

ASHER E. TREAT. (Introduced by W. S. Root.)

From the Department of Physiology, College of Physicians and Surgeons, Columbia University, New York, N. Y.

During the course of experiments previously reported¹ a male cat was prepared with an extensive bilateral lesion probably involving the left side of the eighth cervical segment and the right side of the first thoracic segment of the spinal cord. The lesion was produced on March 26, 1940. At the time of writing, 21 months after the operation, the animal appears to be in excellent condition. Its weight remains constant at about 3.04 kg, which is slightly above the pre-operative value. There have been no pressure ulcers. The appetite is good, and although neither micturition nor defecation occurs spontaneously, the output of urine and feces is normal in quantity. Active spermatozoa are produced and are ejaculated in response to appropriate stimulation. Sensory anesthesia and volitional paralysis are apparent below the level of the lesion. Breathing is entirely diaphragmatic. The functional signs are those of complete interruption of the spinal pathways.

In addition to the usual spinal reflexes, which appear in this animal with regularity and vigor, there is occasionally exhibited a mass reflex of exceptional character which I have not seen described for laboratory animals. It is often elicited by rubbing the shoulder region in such a way as to evoke the typical scratch reflex. Upon continuation or intensification of the stimulus, the scratch response gives way to a violent flexor spasm of the muscles of the abdomen, which brings the hind feet into a position forward of the head, with the legs slightly abducted. As the flexor spasm begins, the rubbing of the shoulder region is discontinued, and the subsequent events occur without further external stimulation. For 5 to 10 seconds, the hind legs perform rapid clonic movements of small amplitude but of great force, while the distal part of the tail exhibits a lashing motion. During this time, if the bladder has been distended, there is a discharge of urine. Erection of the penis and ejaculation of semen may occur. The flexor spasm is abruptly followed by a series of running movements, lasting another 5 to 10 seconds, and involving alternate flexions and extensions both of the trunk and of the hind legs. This phasic activity gradually subsides, and for a minute or more

¹ Treat, A. E., *Am. J. Physiol.*, 1941, **134**, 310.

the tail continues to twitch, and the hind legs display feeble clonic movements which appear and reappear like echos of the preceding stages. If the cat is examined during this time, it is found that the pupils are widely dilated, and that the pulse and respiration are increased in rate. The convulsion has rarely been evoked twice within a single day. Several weeks may elapse during which it is not obtained at all.

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Prophylactic Value of Refined Antipertussis Rabbit Serum.*

WILLIAM L. BRADFORD, HENRY W. SCHERP AND ANN M. BROOKS.

From the Departments of Pediatrics and Bacteriology, University of Rochester School of Medicine and Dentistry, Rochester, N. Y.

The globulin fraction of the serum of rabbits, immunized with living *Hemophilus pertussis*, was shown to protect mice against experimental infection with this organism.¹ The intramuscular injection of doses of from 4 to 7 ml of the refined serum into infants, in the early stage of whooping cough, produced an immediate increase in both the mouse-protective and agglutinative titers of the infants' sera.² In certain instances, there seemed to be a beneficial effect upon the clinical course of the disease, and frequently a definite decrease was noted in the total number of mononuclear cells of the blood.

The present report concerns the prophylactic use of the antiserum[†] in 20 infants exposed to pertussis by family contact.

When an older sibling was found to have whooping cough, the exposed infant was given an intramuscular injection of from 2 to 10 ml of the concentrated antiserum (after preliminary testing for sensitivity). The exposed infant then remained at home in contact with one or more infected siblings, and was observed carefully by clinical examination. In 13 cases the presence of pertussis in the family was confirmed by nasopharyngeal culture.

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¹ Scherp, H. W., Bradford, W. L., and Wold, M., *Proc. Soc. Exp. Biol. and Med.*, 1939, **43**, 172.

² Bradford, W. L., Scherp, H. W., and Brooks, A. M., *Am. J. Dis. Ch.*, 1941, **62**, 492.

[†] The concentrated antiserum was supplied through the courtesy of Dr. W. E. Bunney of E. R. Squibb & Sons. The methods of preparation and standardization have been briefly described.²