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Symptoms and Fiber Degenerations Following Experimental Lesions in Subthalamic Nucleus of Luys.

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This study is based upon 5 dogs with a lesion in the subthalamic region, in which the subthalamic nucleus of Luys was particularly involved. Two lesions were made with a probe, the remaining 3 by the injection of a very weak solution of silver nitrate. The animals were allowed to live from 8 to 11 days, and their symptoms observed. The brains were then prepared by the Marchi method for degenerated nerve fibers.

A large fasciculus of very fine rather diffusely scattered fibers leave the subthalamic nucleus on its medial side, the ventral part of the fasciculus being embedded in the cerebral peduncle. These fibers then run caudad as a wide band over the dorsal and medial surface of the *substantia nigra* and are distributed as follows:

(a) About half of these subthalamic fibers terminate in a nucleus of large, rather closely packed cells occupying an area in the form of an inverted comma. The broad, somewhat rounded head of this nucleus is located between the medial side of the *substantia nigra* and the mammillary peduncle. From this head a wedge-shaped group of cells extends laterally over the dorsal surface of the *substantia nigra*. This group of cells begins caudal to the mammillary bodies and extends beyond the upper level of the red nucleus.

(b) Many of the fibers from the subthalamic nucleus of Luys pass more medial and terminate in a field of more scattered cells near the midline, dorsal and medial to the mammillary peduncle, and within the tegmentum ventral and medial to the red nucleus. This field of cells begins just cephalad to the red nucleus and continue almost to its caudal level.

(c) A considerable number of subthalamic fibers cross the midline caudal to the mammillary bodies and terminate on the opposite side in the same manner as the homolateral fasciculus.

The most pronounced symptom following a lesion in the subthalamic nucleus of Luys was a hypertonic condition of the muscles. This varied in degree from a mild hypertonicity to a marked spasticity according to the extent of the lesion. The hypertonicity was usually most pronounced on the side opposite the lesion, affected the muscles of the legs more than those of the body and the hind leg more than the front. The hypertonicity was accompanied by an awkwardness in handling the corresponding muscles. The movements were slow, deliberate, halting and inaccurate, lacking the rhythm of a normal movement.

The animals showed an increase in temperature of from 2 to 3 degrees, and a rate of heart beat which was 15 to 45 beats more than normal. There was a partial recovery from all these symptoms within a few days after the operation.

This is a preliminary report.

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Conditions Affecting the Emptying-Time of the Human Gall-Bladder.

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One of the authors reported the occurrence of sex differences in the contraction rate of the human gall-bladder.¹ Since then ten additional cases have been examined which, with the others, seem to establish the fact that the average emptying time of the gall-bladder in young women is considerably quicker than in young men. But as yet no explanation of this has been forthcoming; nor, indeed, of individual differences between members of the same sex.

Believing that gall-bladder action might be correlated with the rate at which a meal moves through the intestinal tract, a number of these individuals were given a barium meal and its course followed for several days.* In addition, the contents of the fasting stomach

* The gastro-intestinal examination was made under the direction and through the generous cooperation of Professor Hartung of the Department of Roentgenology.