

THE PYRAMIDAL TRACT OF THE HEDGEHOG
(ERINACEUS EUROPAEUS)
AND ITS RELATIONSHIP WITH THE OLFACTORY BULB

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INTRODUCTION

The corticospinal tract varies considerably from one mammalian species to another. These variations can probably be attributed to the fact that the tract is phylogenetically young, since older tracts present a somewhat more constant pattern (13, 15, 23, 24).

Important variations are found in the location of corticospinal fibers. In marsupials, for instance, they course in the ventral part of the dorsal funiculus (17, 18, 31), while in insectivores the bulk of pyramidal fibers runs into the ventral funiculus (3), and in rodents into the dorsal funiculus (3, 9), with some exceptions, e.g. the rat (4, 10). In carnivores the main corticospinal tract runs into the dorsolateral funiculus as in primates and in man (1, 5).

Important variations are also found in the caudal extension of the corticospinal tract and its termination in spinal grey matter. A progression seems to exist from mammals with poor manual dexterity such as the pig, rabbit, goat, opossum, whose pyramidal tract extends to the first cervical or thoracic segments and whose fibers terminate in the dorsal horn, lamina IV and VI, to animals with increasing motor dexterity, such as the cat or rat whose corticospinal fibers extend throughout the spinal cord and terminate in the dorsal horn and in the intermediate zone, lamina IV, VI and VIII. In animals with the highest manual dexterity such as the baboon, chimpanzee and man the corticospinal fibers extend throughout the spinal cord and terminate in the dorsal horn, in the intermediate zone and in the ventrolateral motoneuronal part of the anterior horn, including laminae IV, VI, VIII and IX.

In the majority of mammalian species, the pyramidal tract decussates in the lower part of the medulla oblongata, prior to reaching the spinal cord. However, in a few mammals such as the mole (12, 16, 29), klipdassie (3, 29) and procavia (29) no pyramidal fiber decussation occurs in the oblongata.

The hedgehog (*Erinaceus europaeus*) is an insectivore with a unique place in phylogenesis, since it is the only existent placental mammal known to have existed in the cretaceous period (26). Some authors mostly using Marchi's degenerative

