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EFFECTS OF DORSAL RHIZOTOMY IN GROWING DOGS.

L. Plaghki, C. Ferrière, W. Lokietek, G. Maréchal.

Fac. Med. UCL, Brussels, Belgium. .

Five right posterior spinal roots (thoracic 5 to 10) were transected in the epidural space between the spinal ganglion and the medulla in 6 months old Beagle dogs. A scoliosis consolidated in about 1 month, its curve being convex to the operated side (35° to 50°, Cobb's method). Muscle samples were taken on each side at the apex of the scoliosis. Right ilio-costalis and intertransversalis had 1.5 to twice more glycolytic enzymes, creatinephosphokinase and AMP deaminase than controls (sham operated). Left muscles were similar to the controls. Histological examination of the medulla showed a decrease in the number of motoneurons in the operated side. This decrease was not due to the surgical trauma, but resulted presumably from a transsynaptic degeneration. Section of five posterior roots in adult dogs produced none of these effects.

These experiments show that normal development of paravertebral muscles and of some motoneurons during growth require sensory inputs.