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Head Retraction Reflex

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ON BRISK stretching, every striated muscle reacts with brisk contraction. This reaction constitutes the deep muscle reflex. These reflexes are usually designated in textbooks by such terms as tendon, bone, periosteal, and osteoperiosteal reflexes. These names, however, are misleading, since the tendon, the periosteum, and the bone are simply places on which the blow of the reflex hammer is applied in order to evoke sudden stretching of the muscle. Such stimulation in itself does not initiate the reflex. In elicitation of the reflex, it is solely the stretching of the muscle fibers *en masse* that allows it to come into action. The term "deep muscle reflexes" is, therefore, appropriate. It follows, then, that it is not logical to designate each reflex according to the point of elicitation, since these points may be different and varied. It is far better to apply the names of the involved muscles—which when stretched respond and contract forthwith—than to associate the reflexes with the points of their elicitation, or to give them proper names. Monrad-Krohn in the eighth edition of his popular work, "The Clinical Examination of the Nervous System," uses the terms "glabella reflex (supraorbital periosteal reflex)" and "radialis periosteal reflex (supinator jerk)." How much simpler to say "orbicularis oculi reflex" and "brachioradial reflex"! Why use proper names as Hoffmann, Troemner, Bechterew, when the reflex named for them is, physiologically, a "finger flexor reflex"?

Some muscles react to stretching with contraction more easily than do others. Some are so located that it is difficult to stretch them briskly and effectively, or if they do contract, the contraction and the movement effected thereby is hardly discernible.

It is of paramount importance for the understanding of the deep muscle reflexes and for the evaluation of their manifestations to realize that in some muscles the threshold for contraction on stretching is so high, the visible manifestation of this contrac-

tion so delicate, that in normal it is hardly discernible on gross inspection and palpation. This is true, for instance, of the deep muscle reflex of the plantar muscles, the flexors of the toes. The so-called Rossolimo reflex is nothing else than this deep plantar muscle reflex; it is therefore not in itself pathologic, but is only a pathologic exaggeration of a normal but latent deep muscle reflex.

The same applies to the reflex of the muscles in the nape of the neck, which retract the head. This reflex cannot be elicited in normal persons but becomes manifest when the corresponding reflex arc is released from pyramidal control, as in cases of bilateral supracervical affection of the pyramidal tract. To elicit a stretch reflex of these muscles, the patient must keep his neck muscles loose and his head slightly bent forward. The examiner applies a blow downward to the middle of the upper lip in order to effect a brisk bending of the head. When this reflex is positive, the patient answers with a quick retraction of his head. The deep muscles in the nape of the neck, the head retractors, react to sudden stretching in the same way as any other muscles. This is the head retractors' reflex, or, for the sake of euphony, head retraction reflex. This reflex has been found positive in the presence of lesions of the pyramidal tracts above the cervical cords—in diffuse brain lesions, as cerebral arteriosclerosis, hypertensive encephalopathy, cerebral lues. It is further positive in the presence of all spinal lesions which have a tendency to creep upward and to affect the pyramidal tracts of the cerebral hemispheres, for instance in amyotrophic lateral sclerosis, lateral sclerosis, dorsolateral sclerosis. This reflex may thus indicate whether a spinal lesion has transgressed the boundaries of the spinal cord and has affected the pyramidal tracts above the cervical cord.

Physiologically the head retraction reflex belongs to the syndrome of decerebrate rigidity in which the retraction of the head may be very pronounced. It is an expression of the mildest, subclinical form of such decerebrate rigidity.

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