

Some principles in spindle control

Ragnar Granit

The muscle receptor, the muscle spindle, is dominated by nerves, but this role is explained by describing the stretch reflex. Liddell and Sherrington, in 1924 and 1925, explained the mechanism of the stretch reflex by creating a brain-free cat. Because we are standing upright, if the muscles are stretched, the force that opposes them is triggered immediately, the reflex, which is the negative feedback mechanism in modern style. At that time, I did not know the muscle spindle that senses muscle stretch and the spindle motor gamma nerve that controls it.

Sherrington and Liddell couldn't understand the typical relapse of the extension reflex, but the clinician was inducing it when he was sick. Recently, when Hagbarth and Eklund (1966) vibrate the muscle, the stretch reflex is triggered, and the muscle contracts. Moreover, when the muscles were further stretched in that state, the tension was observed due to stretch reflexes that would not usually be obtained by a normal person. Until now, we have seen that the stretch reflex is enhanced in decerebrate cats, but this is because the gamma ring was activated, and the same type of result was triggered by vibration. It was supposed to be . . .