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Effect of External Anal Sphincter Contraction on the Ischiocavernosus Muscle and Its Suggested Role in the Sexual Act

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Whereas the bulbocavernosus muscle shares its contractile activity with the external anal sphincter (EAS), the response of the ischiocavernosus muscle (ICM) to EAS contraction could not be traced in the literature. We investigated the hypothesis that the ICM contracts reflexly upon EAS contraction. The response of the ICM to EAS squeeze and stimulation was recorded in 21 healthy volunteers (13 men, 8 women, age 36.8 ± 10.7 [SD] years). An electromyographic (EMG) needle (stimulating) electrode was introduced into the EAS and another (recording) one was inserted into the ICM. The test was repeated after individual anesthetization of the EAS and ICM and after muscle infiltration with normal saline instead of lidocaine. EAS electrostimulation (10 stimuli, 200 μ s duration, 0.2 Hz frequency, 0-100 mA intensity) produced an increase of ICM EMG activity to a mean of 267.8 ± 42.7 μ V, whereas anal squeeze effected an increase to a mean of 224.5 ± 45.3 μ V. The ICM did not respond to stimulation of the EAS after individual anesthetization of the ICM and EAS, but it did after saline infiltration. The results were reproducible. ICM contracted upon EAS contraction. This effect seems to be mediated through a reflex that we call "anocavernosal excitatory reflex." The ICM lever action is suggested to share in the erectile mechanism by elevating the penile shaft to above the horizontal level. The reflex may prove of diagnostic significance in sexual function disorders, a point that needs further study.

Key words: Electromyography, erection, impotence, corpora cavernosa, action potentials, erectile dysfunction

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