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Abstract Title:	**Presynaptic mechanisms are involved in the unmasking of cutaneous nerve responses in the cat spinal cord.**
Authors:	**Garcia, C.***[1]; Chávez, D.[1]; Jimenez-Estrada, I.[1]; Rudomin, P.[1] [1]Physiol.Biophys. & Neurosc., CINVESTAV, Mexico, Mexico
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To examine spinal events occurring during the unmasking that follows section of cutaneous nerves, we recorded in the anesthetized and paralyzed cat the spontaneous and saphenous-evoked cord dorsum potentials (CDPs)in spinal segments L3 to L7, together with L6 dorsal root potentials (DRPs). Spontaneous negative (nCDPs) and negative-positive cord dorsum potentials (npCDPs) of predetermined shapes and amplitudes recorded in one segment were used as reference to disclose CDPs occurring in synchrony in other segments. The nCDPs and npCDPs were largest in the dorsal horn in L5 and L6 and decreased both rostrally and caudally. Spontaneous DRPs appeared associated with npCDPs but not with nCDPs. Sectioning the sural and superficial peroneus nerves increased both the negative and positive components of the saphenous-evoked L3 to L7 CDPs, as well as the saphenous-evoked L6 DRPs (n=5). In contrast, this procedure had no effect on the mean amplitude and segmental distribution of the spontaneous nCDPs and of the npCDPs. Since the neurons generating the nCDPs and the npCDPs respond mono- or oligo-synaptically to electrical stimulation of low-threshold cutaneous afferents (Exp Brain Res 148: 401, 2003), it is not unlikely that after sectioning the SU and SP nerves they also respond more strongly to saphenous inputs. Yet, the finding that the amplitude and segmental distribution of the spontaneous nCDPs and npCDPs is not changed, suggests that the increase in the evoked responses of these neurons during unmasking is due to the increased efficacy of the saphenous afferents, probably by reduction of a tonic presynaptic inhibition. Spectral analysis of the raw recordings of cord dorsum potentials revealed in addition that the magnitude of the power spectra was mostly incremented in the low frequency range (1-10 Hz). This may indicate that other spinal neurons besides those involved in the generation of the spontaneous nCDPs and npCDPs, are disinhibited following cutaneous nerve section.

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