Conclusions

ED is common in men with SCD. Abnormal results of pudendal SEP and SSR from the palm and sole are significantly associated with ED. SSR from the sole is the most sensitive and specific clinical neurophysiological test of ED in subjects with SCD.

Acknowledgement

We thank Ms. Manjula Sharma for secretarial assistance.

References


Accepted on 12.01.2005.

Invited Comments

Erectile dysfunction (ED) is a common neurological symptom, and patients with complete spinal cord injury almost inevitably face this problem. Brain and peripheral nerve diseases may cause ED as well. However, in various autonomic nervous system disorders, ED seems to be one of the most difficult areas to approach. This is because erection and related sexual matters are more difficult to reproduce in the laboratory for both technical and psycho-sociological reasons, than urinary and defecatory behaviors. Proper afferent signals for erection include not only somatosensory (reflexive erection), but also audiovisual, odor, and even imaginary stimulation (psychogenic erection). During sleep, REM stage-related erection also occurs (nocturnal penile tumescence). Erection depends on small-diameter (A delta/ C) cholinergic (parasympathetic) and NOergic (non-adrenergic and non-cholinergic, NANC) fibers from the sacral cord that dilate the cavernous helical artery. We can reproduce erection pharmacologically (oral sildenafil or intracavernous papaverine injection), but not easily by electrical or magnetic stimulation. In the spinal cord injured patients, these three types of erections are lost, because of disruption in the pathways that connect the hypothalamus and the sacral spinal cord, although reflexive erection can be spared.

Here, Ashraf et al described the results of five neurophysiological tests: palm sympathetic skin response (SSR) after posterior tibial nerve stimulation, sole SSR after median nerve stimulation, posterior tibial somatosensory evoked potential (SEP), pudendal SEP and bulbocavernous reflex (BCR) in 26 spinal cord lesioned patients with ED and 14 patients without it. The authors found a relationship between ED and sole SSR, palm SSR, and pudendal SEP with sole SSR being the most sensitive. In spinal cord injured patients, sweating (sympathetic, cholinergic) and erection are not likely to correlate with each other at the peripheral level. However, the authors’ results seem to indicate that sweating and erection pathways are located nearby within the spinal cord, therefore, they are likely to be damaged together. BCR efferent is a large-diameter somatic motor fiber to the striated sphincter muscle. This presumably explains why BCR and ED did not clearly corre-
late with each other in the previous studies. Similarly, the afferent limb of pudendal SEP, as stimulated electrically (not painful), is a large-diameter somatic sensory fiber. This presumably explains why the sensitivity of pudendal SEP was less than that of sole SSR in the present study. The pathophysiology of ED per se is still not clear. However, the authors’ results clearly indicated that sole SSR is useful as an object measure for ED in paraplegic patients.

Ryuji Sakakibara
Neurology, Chiba University, 1-8-1 Inohana Chuo-ku, Chiba 260-8670, Japan. E-mail: sakakibara@faculty.chiba-u.jp