

The effect of thoracic sympathectomy on baroreflex control of circulation

SUMIO HOKA

Kitasato University School of Medicine, 1-15-1 Kitasato, Sagami-hara 228-8555, Japan

The sympathetic nervous system (SNS) comprises a system of efferent nerves that regulate the voluntary functioning of most organs, including the heart and vasculature. The SNS works to minimize moment-to-moment fluctuations in the arterial blood pressure, mainly through baroreflex modulation of its activity. We, anesthesiologists, manipulate the activity of the SNS in the operating room with the use of local and general anesthetics. Sympathomimetic drugs or adrenergic blocking agents are also frequently used to maintain hemodynamic stability during anesthesia. Thus, the integrity of the SNS is an important factor in the management of anesthesia, as well as being important in an individual's quality of daily life.

Anesthesiologists also manipulate the activity of the SNS as a tool of therapy in pain management. Sympathetic ganglion block is one of the most common techniques used in pain clinics. Thoracic sympathectomy has been used as a treatment for palmar hyperhidrosis. Palmar hyperhidrosis usually appears at puberty and causes psychological, social, educational, and occupational problems for people who suffer from it. Although many treatments have been used, the only treatment that permanently eradicates the condition is sympathectomy. Transthoracic endoscopic sympathectomy (TES) seems to be accepted as an effective and simple modality for treating palmar hyperhidrosis. However, TES carries appreciable risks, including the possible occurrence of Horner's syndrome, gustatory sweating, neuralgia, and pneumothorax, in addition to the ex-

traordinarily high incidence of postoperative compensatory hyperhidrosis.

TES can alter the autonomic function of the cardiovascular system. Two cases of cardiac arrest have been reported during TES [1]. Suzuki et al., [2], in their article in this issue of the *Journal of Anesthesia*, report on their examination of the perioperative changes in baroreflex-mediated circulatory control in patients with TES. Baroreflex control of the circulatory system was assessed by head-up tilt. They showed that heart rate responses to head-up tilt were significantly reduced after TES, and that the prevalence of orthostatic hypotension was increased after TES. However, their study demonstrates only the short-term effects of TES. The detrimental effects of TES on SNS-mediated circulatory adjustments may be trivial or may disappear in the long term. Because TES is considered to be a highly effective treatment for palmar hyperhidrosis, the long-term side effects of this procedure should be vigorously examined.

References

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