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Editorial
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Surgical Treatment of Severe Hyperhidrosis

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Editorial

Endoscopic (trans) Thoracic Sympathectomy (ETS) has evolved into an effective treatment for severe hyperhidrosis of the upper limb in the last three decades. Complications like hemorrhage or Horner's syndrome are rare, but side effects such as reflex (compensatory) and gustatory hyperhidrosis may occur frequently. Reflex hyperhidrosis is the most troublesome complication of sympathectomy and it is said to be "the" quality marker of ETS. After extensive resection of the second through the fourth ganglion (T2-T4), as well as after limited resection of the second ganglion (T2), the reported incidence of reflex hyperhidrosis ranges from 50-97%. Therefore the purpose of many studies was to determine whether the incidence of reflex hyperhidrosis can be reduced by limiting sympathectomy to defined levels. Long-term follow-up showed, that by limiting the dissection to T3 or T4, clinical results would become as effective as with T2-T4 dissection minimizing the risks for reflex hyperhidrosis. Reversible techniques were tested on level T3 and T4 by clipping the sympathetic trunk leaving its anatomical structures intact. Reflex hyperhidrosis was not reduced by these technical changes. Other studies concluded that the extent of denervation does not influence the incidence and severity of reflex hyperhidrosis. The ongoing discussion about the importance of surgical technique used for sympathectomy has generated three fractions by now: clipping the sympathetic chain may be a reversible method, resection yields superior clinical results, yet the majority of surgeons ablate, probably because it is easier, requires a shorter operating time, leads to fewer cases of Horner's syndrome, and because re-sympathectomy eventually overcomes initial failure. Clipping offers the supposed advantage of reversal operations in the case of intractable reflex hyperhidrosis. Although withdrawal of clips may be possible by means of minimally invasive access, removing from the sympathetic trunk does not necessarily implicate recovery of the nerve function. In these cases open nerve reconstructions of the divided sympathetic chain can be offered to the patients with subjective relief of the symptoms from reflex hyperhidrosis combined with restoration of sweating in face, armpits or hands. New microwave techniques (miraDry®) may be useful in future to additionally treat patients with reflex symptoms. Our study group is carrying out ongoing research since the late nineties and covers the whole field. The conclusion that may be drawn at this point is that the onset of reflex hyperhidrosis remains unclear. In the lack of prospective randomized trials concerning the extent of sympathectomy and the ablation technique itself, by now there is no definite evidence, that a limited denervation may diminish the risk of reflex sweating after performing ETS. On the other hand our research has demonstrated that although reflex symptoms are present, satisfaction rate comes to be extremely high in these patients, and that reflex hyperhidrosis is influenced to a certain extent by leaving T4 untouched. We have therefore decided to limit denervation to T2 and T3 ganglion in patients with palmar and axillary hyperhidrosis. Additionally we do not refer to compensatory hyperhidrosis as a complication of ETS; it should be considered as a physiological reaction of the body to sympathetic denervation.

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