Thoracoscopic Sympathectomy

Sympathectomy / Sempatektomi

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Özet

Fasial hiperhidrozis ve yüz kızarması ile palmar hiperhidrozis ve aksiller hiperhidrozis gibi klinik sorunların tedavisinde kullanılan sempatikotominin tekniği ve sempatik zincirin kesilmesi konusunda öneriler anlatılmıştır.

Anahtar Kelimeler

Thorakoskopik Sempatektomi, Palmar Hiperhidrozis, Aksiller hiperhidrozis, Fasial hiperhidrozis, Yüz Kızarması.

Abstract

The technique for sympathicotomy and the recommendations for transection of the sympathetic chain to treat the clinical problems such as facial hyperhidrosis and blushing, palmar hyperhidrosis and axillary hyperhidrosis are described.

Keywords

Thoracoscopic Sympathectomy, Palmar Hyperhidrosis, Axillary Hyperhidrosis, Facial Hyperhidrosis, Facial Blushing.

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Intraduction

Thoracic sympathectomy has been applied in nearly hundred years and many different approaches have been used. In the beginning the operations were done through open thoracotomies, but even though the first endoscopic procedure was reported by Kux[1]) in 1951, it was not until after the endoscopic video technology was refined in the nineties that the procedure changed to become a routine operation.

The thoracoscope has added important advantages, such as better visualization, operation through very small incisions, and making the operation an outpatient procedure without the necessity of using a double-lumen tube intubation. The procedure can be done as a sympathicotomy, where the sympathetic chain is transected or as a sympathectomy, where the chain is resected or ablated.

The indications for sympathectomy are:

1) Blushing
2) Facial hyperhidrosis
3) Palmar hyperhidrosis
4) Axillary hyperhidrosis
5) Raynaud syndrome
6) Angina pectoris
7) Cardiac arrhytmias

This paper will focus on the indications 1-4.

Surgical Technique

The patient is intubated by a single lumen tube and placed in the supine position with the arms abducted. The table is tilted in a slight reverse Trendelenburg and sometimes in can be an advantage to rotate the table towards the operative side. One, two or three ports may be used to gain access to the chest cavity. I routinely use two 5-mm ports, which are placed in the hairline in the axilla, not too close to each other to avoid collision of the instruments . A needle scope or a 5mm or 10mm optic can be used. Personally I prefer a 5mm 30o optic. The sympathetic chain may be transected or resected using electrocoagulation, the harmonic scalpel, or laser or clips may be used for the possibility to reverse the procedure. I routinely use the harmonic scalpel to transect the sympathetic chain and it is done under controlled apnea.

In re-do cases in may be an advantage to place the first port in the inframammary fold below the nipple to be sure to get away from any adhesions, and then guide the next port to a free space.

Pain is not dependent on whether electrocoagulation or the harmonic scalpel is used[2]). A clip on the chain instead of transection or ablation enables, in pronciple, reversibility if the side effects are unacceptable[3]). Proof of reversibility is however not yet supported by electrophysiologic studies.

Blushing and facial hyperhidrosis

There is no consensus on the extent of interruption of the sympathetic chain for blushing or facial hyperhidrosis. There is also confusion whether the level addressed should be the actual ganglion or the underlying rib. There are no randomized studies comparing the different levels.

A lower T1-T3[4]), a T2[5-8]), a T2-T3[8,9]) or a T3-T4[9]) sympathicotomy have been used for blushing. Level T2 and level T2-T3 are equally effective[8]) , but compensatory sweating was significantly more frequent in the group treated with T2-T3 sympathicotomy.

Palmar hyperhidrosis

More than 200 papers concerning this clinical problem have been published and most of them recommend the level T2-T3. The level T3 has been compared to T2-T4 in a randomized study by Li et al.[10]) with the same effect on the hand sweating, but the T3 group had significant less severe compensatory sweating ($P < .05$). Another randomized study has been published in 2009 where the level T2 is compared to T3[11]). There was no difference in local effect or in numbers of compensatory sweating, but there was significantly more patients with severe compensatory sweating in the T2 group ($P = .007$).

Axillary hyperhidrosis

Follow-up studies with the results of transsection at different levels T2, T2-T3 and T2-T4 have been published. Compensatory sweating was significantly more frequent with transection of more levels[12]). A randomized study[13]) comparing T4 versus T3-T4 has shown significantly less compensatory sweating in the T4 group ($P < .001$).

Side effects

Compensatory sweating is the most commonly reported side effect after sympathicotomy and the frequency varies between 1.2% and 90%[12]). Thirty-five % of the patients often have to change clothes, and significantly more frequent when level T2-T4 is involved[12]).

Gustatory sweating, which is facial sweating after eating spicy or acidic food occurs in 32% of the patients, and the incidence is significantly associated with the extent of sympathicotomy[14]) ($P = .04$).

Horner's syndrome is seen in less than 1% of the patients and is caused by damage to T1 either by direct or indirect damage under the operation.

Information to the patient

The patients have to be well informed about the success rate of the operation and the side effects and that the operation should be perceived as a definite intervention even though reconstruction of the chain has been reported[15]).

Conclusion

The recommended intervention for facial hyperhidrosis and blushing is a T2 sympathicotomy, for palmar hyperhidrosis a T3 transection, and for axillary hyperhidrosis a T4 transection.

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