

Current treatment of hyperhidrosis

O tratamento atual da hiperhidrose

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Hyperhidrosis (HH) is a somatic disorder caused by overstimulation of the sympathetic nervous system, resulting in excessive sweating. The disease normally has onset during childhood and affects approximately 3% of the population.¹ The axillary, palmar and plantar regions are the most often affected. HH can cause serious emotional, social and professional problems, with a significant impact on quality of life (QoL) and so treatment is linked with significant improvements in QoL.²

Topical treatments such as iontophoresis and application of antiperspirants have demonstrated low efficacy. Botulinum toxin is a treatment that offers good results, especially for axillary HH, but the effect is temporary and it must be re-administered every six months, which makes it an expensive option that has low feasibility in public health.³

Another clinical treatment option is administration of anticholinergics, including glycopyrrolate and, especially, oxybutynin, which was first reported as a treatment for HH in 1988.⁴ Initial studies demonstrated good treatment efficacy for HH affecting palmar, plantar, axillary and facial areas after one month of oxybutynin. The most important side effect of this drug, dry mouth, used to be the greatest barrier to its use, but it can be controlled by an administration regimen starting with an initial dose of 2.5 mg and increasing progressively up to 5 mg twice a day. Studies using questionnaires found that sudoresis improved at primary sites in more than 70% of patients and QoL was improved in 66.6% to 74.6%, while sudoresis improved in all secondary HH sites in more than 60% of cases.⁵⁻⁸

Long-term results were published confirming these satisfactory results for the same sites. The efficacy of treatment over the long term was compared with the initial assessments at six weeks and these studies found that more than 75% of patients maintained the same level of improvement in sudoresis or improved further in comparison with the six-week assessment and more than 90% exhibited improvements in QoL.⁹⁻¹² As such, the 10 mg per day dose has proved its efficacy in reducing sudoresis with fewer side effects and without the risk of compensatory hyperhidrosis (CH).

Surgical options for treatment of HH are resection of the eccrine sweat glands, for certain cases of axillary HH, and sympathectomy. Plantar HH can be treated by surgical or chemical lumbar sympathectomy (the latter achieved by phenol injection).¹³ Video-assisted thoracic sympathectomy has come to be considered the current treatment of choice for palmar and axillary HH because of its low risk and high success rate.^{2,14}

The first endoscopic sympathectomy was conducted at the end of the 1940s by Hughes, but it was Kux who published a report detailing experience with the technique in the following decade.¹⁵ At the end of the 1980s some surgeons began to conduct thoracic sympathectomy via thoracoscopy, but it was only in the 1990s, as technology improved, that the video-assisted thoracic sympathectomy technique was consolidated. In video-assisted thoracic sympathectomy, the patient is given general anesthesia and placed in a semi-sitting position at 45° and one or two incisions, less than 1 cm long, are made for insertion of a harmonic or electric scalpel and the video camera. The nerve chain is then sectioned at the appropriate level.

At the start of the video-assisted thoracic sympathectomy era, Horner syndrome was the most feared complication, with a 5% rate of occurrence in some series. Nowadays we see a much reduced rate because of the increase in indications for selective management of the T4 ganglion (for palmar and/or axillary HH) and because of adoption of the harmonic scalpel, which reduces heat transmission to the stellate ganglion.¹⁶ Horner syndrome is only still observed after procedures involving manipulation of the T2 ganglion (for treatment of facial HH) using an electric scalpel.

The principal side effect of sympathectomy is CH and this symptom is reported to some degree by almost all of the patients who undergo the operation. CH is defined as greater quantities of perspiration than necessary for thermoregulation and in areas that did not exhibit excessive sudoresis before surgery. The most often affected areas are the thorax, abdomen and back.¹⁷ The most severe cases are associated with thoracic sympathectomy at higher levels, resection of more than one thoracic ganglion and overweight or obese patients.¹⁸ When CH does emerge, there are

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limited treatment options. Theoretically, if clipping has been employed, the clips can be removed,¹⁹ preferably as soon as possible after the surgical procedure, to avoid permanent neurological damage, and if it has not been employed, attempts can be made to reconstruct the sympathetic chain by grafting with the sural or intercostal nerves.²⁰ However, these methods do not produce uniform results. In practice, anticholinergics are the only real alternative and have been used to treat CH with good results.²¹

As treatment techniques have evolved over the last 20 years, recommendations of what level to treat have changed and the decision is based on the sites of HH that cause most discomfort to the patient, and may include the second (T2), third (T3) and/or fourth (T4) thoracic ganglia. Initially, patients with palmar HH underwent ablation of T2 and those with axillary HH, were treated with ablation of T3 and T4. After conducting prospective randomized trials comparing different levels of resection, we demonstrated that ablation of T2 should be reserved for treatment of craniofacial HH,²² ablation of T3 or T4 should be used for palmar HH,²³ with T4 preferred, and T4 should be ablated to treat axillary HH.²⁴ In certain cases in which patients have a combination of different HH sites, the decision of which level to treat at should be tailored to the individual. When both palmar and axillary HH are present, T4 sympathectomy is indicated. If the patient has facial HH combined with palmar HH, the T2 level is preferable. For patients who complain of both facial HH and axillary HH, T2, T3 and T4 sympathectomy are indicated, but there is a high risk of severe CH.

In conclusion, once HH has been diagnosed it should be duly treated because of the considerable negative impact on patients' QoL and because it causes social isolation and withdrawal from both employment and leisure activities. Due to the risk of CH, sympathectomy is no longer the first choice treatment and has now been displaced by oxybutynin. Treatment with oxybutynin results in significant improvement in HH in more than 70% of patients and should therefore be considered as initial treatment whenever possible. The drug offers good results even over the long term, as has been demonstrated in several studies.⁹⁻¹² We therefore believe that these patients should initially be treated with oxybutynin and if this does not result in therapeutic success, sympathectomy plays a role as a supplementary method, rather than as an alternative treatment, in the same way that revascularization plays a supplementary role alongside physical training for treatment of intermittent claudication.

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