Selecting the Right Patient for Surgical Treatment of Hyperhidrosis

Alan Edmond Parsons Cameron, MA, MCh, FRCS*

KEYWORDS

• Sympathectomy • Hyperhidrosis • Patient selection

KEY POINTS

- Endoscopic thoracic sympathectomy (ETS) is a good option for palmar sweating.
- It is not the first choice for axillary sweating and other operations may be preferred.
- ETS can be used for craniofacial sweating but only after very careful consideration.

INTRODUCTION

The earliest sympathectomy was probably performed by Alexander in 1889 to treat epilepsy.[1] Surgery was tried for other indications, but the first successful sympathectomy for hyperhidrosis was reported by Kotzareff[2] in 1920; he cured a patient with severe unilateral cranial sweating and, since then, excessive sweating has been the most common indication for surgery.

In his 1850 novel, *David Copperfield*, Charles Dickens gave a splendid description of the ideal candidate for treatment.[3] Copperfield shakes the hand of the villainous Uriah Heep and then says "what a clammy hand his was. I rubbed mine afterward to warm it and to rub his off." Later he sees Heep's "lank forefinger leaving snail-like tracks upon the page." So that individual would definitely have been helped by surgery! These days, however, with a wider range of treatments and a wider spectrum of cases, selecting the right patient is more problematic.

Perhaps the easiest way to approach the subject is to consider the anatomic sites of sweating.

PALMAR HYPERHIDROSIS

Overview

Hand sweating remains the best indication for surgery and the only effective surgery is some attack on the sympathetic chain. Although originally this was done by open surgery,[4] it is now always by endoscopic thoracic sympathectomy (ETS). (See discussion of various surgical approaches to ETS, in this issue.) There is a variety of techniques using different instruments (eg, diathermy, harmonic scalpel, scissors, clipping, robotics) or by different anatomic approaches (eg, resection, ablation, ganglionectomy, ramicotomy). However, at the end of the day, the results seem broadly similar. What seems to matter is that the chain is damaged by some means. Of more relevance perhaps is the level at which the chain is attacked. (See discussion of growing consensus that in palmar sweating the highest level at the second rib is best avoided, in this issue.)

Clinical Assessment

The ideal patient has an established history of severe palmar sweating interfering with work or social interaction.

Disclosure Statement: None.
Department of Surgery, Ipswich Hospital, Heath Road, Ipswich IP4 5PD, United Kingdom
* 4 Parkside Avenue, Ipswich IP4 2UL, United Kingdom.
E-mail address: alan.cameron@talktalk.net

Thorac Surg Clin ■ (2016) ■–■
http://dx.doi.org/10.1016/j.thorsurg.2016.06.004
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The history of primary hyperhidrosis is characteristic; for example, sweating does not occur during sleep, which makes it easy to exclude any systemic causes.

Although there are questionnaires specifically designed for sweating,[5,6] most surgeons do not use these. Although there are quantitative methods of measuring sweat output, either gravimetric by weighing pads or electronic sudometers, these are cumbersome and only research tools so, again, they are not used in clinical practice.[7]

Sometimes perspiration can be observed dripping off the fingers, but the sweat output is very variable so usually the surgeon has to rely on the patient's description of the symptoms. The sweating is undoubtedly affected by emotion. Sweating causes anxiety that then increases the sweating and so a vicious cycle results. Many patients may have been prescribed antidepressants or anxiolytics, so it can be difficult for a surgeon to separate the emotional and physical aspects. This is particularly important when discussing surgery because some of these anxious patients are seeking perfection and may be very unhappy with even mild adverse side-effects.

There are options for the treatment of palmar sweating. Oral anticholinergics have been used since 1950[8] but efficacy is limited by side-effects.[9] Iontophoresis, introduced by Levit[10] in 1968 is effective but tedious. Botox has been used for control of sweating since 1994[11] but is painful on the hands.

So ETS can be regarded as treatment of last resort and it is vital to ensure that any prospective candidate for surgery has been fully informed of the risks and consequences of ETS.[12] Informed consent has always been part of a surgeon's duty of care to any patient, but in these litigious days it is now also essential for self-preservation.

Contraindications

There are relatively few contraindications to surgery. Although pediatricians and dermatologists dislike the operation, ETS can be done in children once they are large enough to get the instrument easily through the ribs and there do not seem to be any long-term consequences.[13] Palmar hyperhidrosis usually starts in childhood and does not get better, so there is no reason for delay to see if the child grows out of it. There is a genetic element, so sometimes parents who have had ETS as an adult will bring their child for early treatment so that the misery of adolescence with sweaty hands, which they themselves endured, can be avoided in their offspring.[14]

Preoperative Assessment

Clearly general fitness is important, but most cases are fit young adults. A history of tuberculosis or of pneumothorax may predict intraoperative difficulties due to adhesions but need not be a contraindication. The presence of an azygos lobe can cause confusion intraoperatively, but this is rarely picked up on a routine on a chest radiograph.[15] Equally, although apical lesions of old tuberculosis may be seen, the commoner simple adhesions are not, so a preoperative chest radiograph is rarely of any value. Similarly, other preoperative tests are usually unnecessary but may be dictated by local anesthetic protocols.

Summary

Although physicians, and especially dermatologists, often write about secondary hyperhidrosis, in practice such cases are exceedingly rare. The history of primary palmar hyperhidrosis is so characteristic that other conditions do not need to be excluded except in the most unusual circumstances.

So the most important part of selecting the patient for treatment is the informed discussion about the likely outcome of ETS and, in this respect, the operation is no different from any other. However, the procedure has a bad reputation among dermatologists, in particular, and critics see it as a lifestyle choice, forgetting that palmar sweating is a miserable condition for the sufferer. Surgeons, however, must acknowledge that some of the opposition is justified because previous indications may have been too liberal. Therefore, a surgeon is more than usually obliged to spell out clearly what is to be expected.

PALMAR AND AXILLARY SWEATING

Overview

If there is a combination of hand and armpit sweating, the selection of a patient for ETS is the same as for sweating confined to the hands. (See discussion of modification of surgery to include a lower level of the chain, in this issue.)

ISOLATED AXILLARY SWEATING

Nonsurgical Treatment

The right approach to the patient with sweating confined to the armpit is much more controversial and surgery has much less of a role.

Before considering any form of surgery it is important that all conservative measures have been shown to be ineffective. Thus the patient should have tried strong antiperspirants,[16] possibly with addition of steroid ointments to control inflammation.

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