Is there light at the end of the tunnel for patients with severe compensatory hyperhidrosis?

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Compensatory hyperhidrosis after sympathectomy for palmar, axillary, or facial hyperhidrosis can be a debilitating problem. Patients with severe compensatory hyperhidrosis are often dissatisfied with their procedure and report significant impact on their quality of life.^{1,2} Compensatory hyperhidrosis has been recognized since the 1930s, when Ross³ wrote, “At first we were inclined to regard this merely as an error of observation, the usual amount of sweat being considered excessive when contrasted with the completely dry denervated area. However, the remark has been so frequently made and it has been possible to observe the secretion so often, that the possibility of compensatory hypersecretion cannot be excluded.” Compensatory hyperhidrosis after sympathectomy occurs in 50% to 90% of patients and is severe in as many as 35%.^{1,4} The mechanism underlying compensatory hyperhidrosis is poorly understood, but important predisposing factors are transection of the sympathetic chain at the T2 level and, possibly, transection of the sympathetic chain at multiple levels.^{2,4,5} Currently, there is no effective treatment for compensatory hyperhidrosis after thoracic sympathectomy.

In the current issue of the *Journal*, Yamamoto and Okada⁶ present a case report on the use of laser speckle flow imaging to guide targeted treatment for compensatory hyperhidrosis. Each sympathetic ganglion controls both vasoconstriction and sweat secretion in a defined skin domain. Laser speckle flow imaging assesses skin perfusion, a marker of vasomotor changes. By analyzing laser speckle flow graphs while electrically stimulating different sympathetic ganglia, Yamamoto and Okada⁶ were able to match areas with changes in blood flow after ganglion stimulation with areas of hyperhidrosis, identified by physical examination and thermal imaging. They then ablated the ganglia responsible for the compensatory sweating. After resection of 7 ganglia during 2 procedures, their patient remained free of hyperhidrosis during 4 years of follow-up.

Yamamoto and Okada⁶ are to be commended for using a novel approach to address a vexing problem. Unfortunately, the case report lacks some details that would be helpful to

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Central Message

To manage compensatory hyperhidrosis after sympathectomy, ganglia controlling hyperhidrosis were identified with a novel imaging technique and ablated. This promising approach requires further study.

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others attempting to duplicate the results. Specific parameters used for ganglia stimulation during laser speckle flow graphing, including voltage and duration, are not reported, and it is not clear what precautionary measures Yamamoto and Okada⁶ took preoperatively and intraoperatively to ensure that the identified ganglia were, in fact, responsible for the compensatory hyperhidrosis. Yamamoto and Okada⁶ also did not comment on the presence or absence of any undesirable side effects of the procedure. Larger studies are needed to define clearly the efficacy of this procedure and its reproducibility. Nonetheless, if the findings of this innovative case report are confirmed, there may be light at the end of the tunnel for patients with compensatory hyperhidrosis.

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