The man with sweaty palms and soles

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Jamani NA, Puteri Shanaz JK, Azwanis AH. The man with sweaty palms and soles. *Malays Fam Physician.* 2018;13(1);52–54.

Keywords:
Hyperhydrosis, sweaty palms and soles

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Case History

A 21-year-old male college student presented with excessive severe bilateral sweating of his palms and soles for the past 3 years, which has progressively worsened. His symptoms occur throughout the day but worsened during exams or whenever he felt anxious. The condition has caused him difficulty in holding objects and writing assignments, and has resulted in public embarrassment on several occasions. He has to wipe his hands with a handkerchief each time they sweat. He also needs to change his socks frequently. No other area of his body is similarly affected. He denied any associated symptoms, such as pungent body odour, changes in weight, fever, heat intolerance, or changes in bowel habits. He has no known medical illness and is not on any medication.

Clinical examination revealed bilateral profuse sweating of the palms and soles. Other examinations were unremarkable.

Figure 1: Increased sweatiness over bilateral palms

Questions

1. What is the most likely diagnosis?
2. What are the differential diagnoses?
3. What investigation is indicated?
4. What is the management?

Answers:

1. Primary hyperhidrosis (palmoplantar).
2. Secondary causes of hyperhidrosis, such as thyrotoxicosis, Hodgkin's disease, chronic alcoholism, tuberculosis, and diabetes mellitus.
3. Additional laboratory tests are not needed if the presentation is characteristic of primary focal hyperhidrosis and there is no suggestions of a secondary disorder.
4. Initial management for palmoplantar hyperhidrosis is supportive, which includes keeping the hands and feet as dry as possible by use of absorbent hand and foot powders. For plantar hyperhydrosis, wearing shoe inserts, as well as frequent changing of socks and shoes could also help. Treatment options for primary hyperhidrosis include medical and surgical treatments. Medical treatments include therapy, such as topical aluminium chloride, oral anticholinergic agents, iontophoresis, and botulinum toxin A injections. Surgical therapy includes endoscopic thoracic symphatectomy.

Discussion

Primary hyperhidrosis is defined as excessive sweating, i.e., more sweating than what is required for the body's thermoregulation. It is due to excessive function of the sudomotor sweat control system in the absence of a sweating trigger.[1] It has been documented in approximately 1-3% of the western and general population.[2,3] This condition can cause psychosocial disturbances in social relationships and quality of life.[4] Primary hyperhidrosis usually affects sweat glands of the palms, soles, and axillae and craniofacial regions.

The diagnosis of primary idiopathic focal hyperhidrosis must involve focal, visible, excessive sweating of at least 6 months' duration with no apparent cause which includes at least two of the following characteristics:[2]

- Be bilateral and relatively symmetric
- Impairs daily activities
- Frequency of at least one episode per week

- Age of onset less than 25 years
- Positive family history
- Cessation of focal sweating during sleep

However, when the sweating is generalized, other secondary causes should be assessed and excluded. Secondary causes of hyperhidrosis include many pathologies, ranging from infections; malignancies, such as lymphomas; medication; anxiety; and neurological and endocrine disorders, such as thyrotoxicosis and phaeochromocytoma.

Other than generalized sweating, indications that a patient has secondary hyperhidrosis include night-time sweating (which may indicate haematological cancer or infection, such as tuberculosis), weight loss (cancer), palpitations (thyrotoxicosis), history of illicit drug use, use of drugs with related side effects, or generally feeling unwell. Thus, certain tests need to be done when secondary hyperhidrosis is suspected, such as a thyroid function test, full blood count, peripheral blood film, chest radiograph, and CT scanning.[5]

For most cases of primary hyperhidrosis, the diagnosis is usually clinical; therefore, further investigation or laboratory tests are not usually required. However, objective testing may be used for difficult or questionable cases.[5] A starch iodine (Minor's) test can be done in order to map the area of excessive sweating before treatment is given.

Assessment by gravimetry and evaporimetry for quantification of the sweat can also be done for further assessment, but this is usually reserved for research purposes.[6] The severity of excessive sweating can be also be assessed by using the four-point, single- item Hyperhydrosis Severity Disease scale. This is a diagnostic tool that provides a qualitative measure of the tolerability of the patient's symptoms and interference with daily activities. [7]

Primary hyperhidrosis can be treated medically and surgically. The latter is reserved for when first-line medical treatment fails. For palmoplantar hyperhidrosis, initial non-pharmacological measures include keeping the hands and feet as dry as possible by use of absorbent powders containing aluminium chloride. Aluminium chloride, which acts as an active ingredient in antiperspirant, is thought to provide physical blockage of the eccrine sweat gland, causing its degeneration.[8,9]

Topical aluminium chloride may not be as effective in controlling the symptoms of palmoplantar hyperhydrosis as it is for treating axillary hyperhidrosis.[7] Therefore, iontophoresis with tap water can be offered for patients who do not respond or cannot tolerate topical aluminium chloride on their hands. This is an effective method for achieving euhydrosis.[10] An electric current is passed through water, and the affected area is immersed for 20-30 minutes to help control symptoms; this produces favourable results in most patients.[8]

Botulinum toxin intradermal injection is also a treatment for this condition if patients do not give satisfactory response to antiperspirants or iontophoresis.[10] However, these medical treatments may not result in complete or permanent euhydrosis. Surgical treatment, such as endoscopic thoracic sympathectomy (ETS), is usually more effective in achieving complete dryness and results in greater satisfaction.[11,12] ETS is usually recommended for severe palmoplantar hyperhidrosis and when other treatments have failed.[13]

Short-term oral anticholinergic (e.g., glycopyrronium bromide, propantheline) can be taken, as required, in addition to other therapies by those patients with symptoms aggravated in known anxiety-provoking situations.

In addition, good patient education regarding hyperhidrosis should be given as to manage treatment options and patient expectations. This is because a severe form of hyperhidrosis can lead to great emotional distress and social embarrassment that may result in depression.

Conflict of interest

None

How does this paper make a difference to general practice?

Hyperhidrosis may have negative impacts, such as physical discomfort, social awkwardness, and impairment of work performance and productivity, which may have devastating effects on the mental health of affected patients. Therefore, it is important that primary care physicians carry out an assessment of the impact of the condition on the patient's life, as early identification and proper management of patients with hyperhidrosis are crucial to lessen the emotional, psychosocial, and physical impact of their condition.

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