

Review Article

Palmar Hyperhidrosis

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Abstract

Palmar hyperhidrosis denotes excessive eccrine sweating in the palms. The estimated incidence is 0.6 to 2.8% of the population. It is believed that the condition is due to a localized hyperactivity of sympathetic cholinergic fibers that pass through the upper dorsal sympathetic ganglia at T2-T3. Palmar hyperhidrosis often begins in childhood, becoming more severe in adolescence and young adulthood. The sweating is unrelated to ambient temperature but can be aggravated by stressful emotional situations. Palmar hyperhidrosis adversely affects the quality of life. Treatment is mainly symptomatic. When topical therapy with aluminum salts, iontophoresis, and systemic anticholinergics are unavailable, unsuccessful, or deemed unsatisfactory, injections of botulinum toxin should be considered. Endoscopic thoracic sympathectomy may be considered for the rare patient with intractable palmar hyperhidrosis resistant to conservative measures.

Keywords: Palmar hyperhidrosis; Emotional stress; Aluminum salts; Iontophoresis; Botulinum toxin; Sympathectomy

Introduction

Palmar hyperhidrosis denotes excessive eccrine sweating in the palms. In most cases, the condition is benign. However, the excessive sweating can lead to embarrassment, frustration, social withdrawal, and low self-esteem [1].

Epidemiology

The estimated incidence is 0.6 to 2.8% of the population [1,2]. The condition is more common in Orientals from subtropical regions. The sex ratio is approximately equal. A positive family history can be elicited in 30 to 50% of cases [3].

Etiopathogenesis

In the majority of cases, the cause of palmar hyperhidrosis is unknown. The sweat glands in the involved areas are normal in histologic appearance and in number [1]. The sympathetic nervous supply to these areas is also normal. It is believed that the condition

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Citation: Leung AKC, Barankin B (2014) Palmar Hyperhidrosis. J Neonatol Clin Pediatr 1: 001.

Received: May 26, 2014; Accepted: June 17, 2014; Published: July 01, 2014

is due to a localized hyperactivity of sympathetic cholinergic fibers that pass through the upper dorsal sympathetic ganglia at T2-T3 [4,5].

It has been speculated that the hypothalamic sweat center controlling the palms and soles is distinct from the rest of the hypothalamic sweat centers and is under the exclusive control of the cerebral cortex without input from the thermo sensitive elements [4]. Thus, sweating on the palms and soles rarely, if ever, occurs during sleep or sedation, nor is it augmented in a warm environment.

In some families, the condition has an autosomal dominant mode of inheritance with incomplete penetrance [2]. The responsible genes have been mapped to chromosome 14q11.2-q13 [2].

Clinical Manifestations

Palmar hyperhidrosis often begins in childhood, becoming more severe in adolescence and young adulthood. The degree of sweating is variable, ranging in severity from moderate moisture to severe dripping (Figure 1) [5]. The sweating is unrelated to ambient temperature but can be aggravated during periods of stress, embarrassment, fear, anger, excitement, and anxiety [1,5].



Figure 1: A 17-year-old girl with Palmar Hyperhidrosis.

Diagnosis

The diagnosis is mainly clinical, based on the history and physical examination.

Diagnostic Studies

The iodine-starch technique and the quinizarin powder dusting technique can be used to delineate the precise pattern and quantitative level of sweating [1]. Both techniques produce calorimetric changes

induced by contact with water (sweat). Laboratory tests are usually not necessary.

Complications

Palmar hyperhidrosis adversely affects the quality of life. Affected patients tend to avoid shaking hands. As such, they may become socially withdrawn and have low self-esteem. They may have difficulty grasping certain objects such as pens. Also, the papers they hold may become wet and metals they hold may become rusted. This may impose restrictions on the kinds of tasks that they may be able to perform.

Palmar hyperhidrosis may aggravate eczematous dermatitis [4]. Affected patients are at risk for contact dermatitis and miliaria [1]. Hyperhidrosis may lead to maceration of the skin and predisposition to various bacterial and fungal infections.

Prognosis

Without definitive treatment, palmar hyperhidrosis often persists throughout life. The condition tends to improve from the fourth decade of life as the activity of eccrine sweat glands decreases with age.

Management

For symptomatic treatment, many commercial topical applications are available. Most of them contain aluminum salts [4]. Drysol and Hydrosal gel are the most commonly employed “medical grade” antiperspirants, and they should be applied at night before bed to completely dry palms. These medications act by blocking the openings of the sweat ducts. Skin irritation from aluminum salts is most common in the axillae, and uncommon on the palms.

Iontophoresis causes blockage of the sweat duct at the level of the stratum corneum by directing a mild electrical current through the skin. Although iontophoresis with plain tap water is relatively free of side effects, the necessity for repetitive frequent treatments is a drawback. Treatment can be made more effective by the addition of aluminum chloride or glycopyrronium bromide [6]. For hyperhidrosis of palms or soles, the success rate is in the 80% range.

Systemic anticholinergics, such as glycopyrrolate and oxybutynin have been used with variable improvement in patients with hyperhidrosis [7]. Unpleasant adverse effects include dryness of mouth, blurring of vision, dizziness, constipation, and urinary retention.

Injection of botulinum toxin A or B into the palms has been shown to be effective and safe for the treatment of palmer hyperhidrosis [3,8]. Botulinum toxins work by blocking the presynaptic release of

acetylcholine. Side effects include pain at the injection site, dry skin, hematoma, and transient handgrip strength reduction, all of which are temporary [8]. Duration of effect is typically around 6 months. Botulinum toxin treatment can be expensive, and some private insurance plans pay for the treatment.

Endoscopic thoracic sympathectomy may be considered for the rare patient with intractable palmar hyperhidrosis resistant to conservative measures [9]. Video-assisted endoscopic thoracic sympathectomy further improves the success rate with low recurrence [10]. Sympathectomy abolishes eccrine sweating in all areas supplied by the postganglionic fibers. Complications include wound infection, hemorrhage, pneumothorax, recurrent laryngeal nerve palsy, brachial plexus injuries, post-sympathetic neuralgia, Horner’s syndrome, gustatory sweating, and compensatory hyperhidrosis in non-denervated areas [5].

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