A Case of Eccrine Chromhidrosis Due to Multivitamin Use

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ABSTRACT

Chromhidrosis is a rare condition with a characteristic presentation of the secretion of colored sweat by apocrine or eccrine sweat glands. Eccrine chromhidrosis may occur by some water-soluble dyes in the systemic circulation, as a result of drug metabolism such as quinine, bisacodyl, clofazimine etc. or due to contamination of micro-organisms and rarely hyperbilirubinemia. The first and most important step for diagnosis of eccrine chromhidrosis is clinical evaluation. In the treatment of chromhidrosis, the suspected dye or drug should be eliminated from the body. This case report describes a patient who was diagnosed with eccrine chromhidrosis as a result of drug metabolism. The patient presented to the outpatient family medicine clinic of Ibn-i Sina Hospital with a complaint of blue sweating.

Keywords: eccrine glands, vitamins, sweating, family practice

Introduction

Chromhidrosis is a rare condition with a characteristic presentation of the secretion of colored sweat by apocrine or eccrine sweat glands. It mostly manifests itself in axilla, face or breast (1). Eccrine and apocrine chromhidrosis have different pathophysiology. Eccrine chromhidrosis may occur by some water-soluble dyes that enter systemic circulation, as a result of drug metabolism such as quinine, bisacodyl, clofazimine etc. or due to contamination of micro-organisms and rarely hyperbilirubinemia (1-3). The first and most important step for diagnosis of eccrine chromhidrosis is clinical evaluation. In the treatment of chromhidrosis, the suspected dye or drug should be eliminated from the body. Although treatment is not necessary in most cases, capsaicin cream and 20% aluminium chloride hexahydrate solutions, or botulin toxin treatment may be administered in selected cases (2).

This case report describes a patient who was diagnosed with eccrine chromhidrosis as a result of drug metabolism. The patient presented to the outpatient family medicine clinic of Ibn-i Sina Hospital with a complaint of blue sweating.

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Case

A 37-year-old woman presented to the outpatient family medicine clinic of Ibn-i Sina Hospital of Ankara University School of Medicine with a complaint of blue sweating. She had noticed a slight blue sweat which had appeared especially under armpit and on front of chest for 10 days. She indicated that in addition to coloured sweat she had an increased sweating, dysuria and strong smell in urine. She also indicated that she felt feverish. She had no other symptoms in her history. The patient was non-smoker and teetotaller. A detailed drug history was taken. She had allergic asthma and had started to use 10 mg montelukast once a day 30 days ago. There were no remarkable findings in her family history. There has been no suspicious food intake or similar complaints around her.

Her physical examination revealed a pulse with 90/min beats per minute, 36.7 °C body temperature, 110/70 mmHg blood pressure. A serous postnasal discharge was detected in oropharynx. A light blue colour was observed at bilateral axillary regions, arm joint folds and on her clothes. Other system examinations were normal.

When the postnasal discharge was examined in detail, the patient indicated that she had taken multivitamin complex tablets once a day for three days since her complaints had made her think she had caught flu 20 days ago. The substances contained in the multivitamin complex were investigated in the literature. Each tablet contains 750 microgram of copper and 2.5 milligram of beta carotene. According to literature, beta carotene causes orange colour and copper causes blue colour in bodily fluids (4). We thought that this condition might occur as the result of the metabolism of these multivitamin drugs.

The blood test results, including complete blood count, blood chemistry with renal and liver function, and bilirubin levels, were normal. We detected urinary tract infection in urine culture and prescribed the treatment. During this period, the patient was recommended to increase drinking water as more than 2.5 litres per day and not to take any drugs if not necessary. In the control appointment, after 2 weeks, she indicated that the blue sweating complaint went away.

Discussion

Chromhidrosis is a rare condition that occurs when apocrine or eccrine sweat glands produce colored sweat. It is more common especially after puberty due to increased hormone secretion (1,3). Colour change mostly is seen in axilla, around the breast areola, inside palms and on face. Chromhidrosis is examined under three headings: eccrine, apocrine and pseudo chromhidrosis (1).

In pseudochromhidrosis the patient's sweat colour is normal, but it changes after the sweat contacts with the surface of the body. At this point, dyes, chemical contamination and cosmetic products should be considered (1). Based on our patient's history, pseudochromhidrosis was excluded.

Apocrine chromhidrosis is more common after puberty, even though late-onset cases (1,3). In addition, apocrine chromhidrosis is a chronic process that is affected by hormone changes and it is not expected to regress with increased water consumption as it regressed in our case (1). On the other hand, eccrine chromhidrosis may occur during the removal of lipofuscin pigments which caused by drug metabolism, also be due to pigmentation of microorganisms on the skin surface or in rare cases as a result of hyperbilirubinemia. Quinine, bisacodyl, clofazimine, methylene blue, fluorescein, copper, beta carotene, silver, rifampin etc. are known to cause eccrine chromhidrosis (1-4). Since our patient’s complaints appeared after using multivitamins containing copper and beta carotene, decreased by increasing water consumption, and consisted of blue sweat on the front of the chest in contradistinction to apocrine chromhidrosis, we considered our case as an eccrine chromhidrosis.

Conclusion

Taking a detailed history and having a careful physical examination were of great importance in the patient who presented with a rare complaint. Exposure
to synthetic dyes, heavy metals or chemicals, and use of drugs, bronzer or cosmetic products should be questioned in detail for an accurate diagnosis (4). If a detailed history had not been taken and the postnasal discharge had been overlooked during the physical examination, the patient could have been consult to another specialist and been experienced unnecessary biopsies. As a result, a detailed history and a careful physical examination in rare complaints will facilitate the exclusion of many organic causes and prevent unnecessary tests.

References