Palmar Telangiectases as a Manifestation of Graves Disease

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Telangiectases are lesions formed by persistent segmental dilatation of papillary plexus vessels of the skin that typically present as fine, bright, nonpulsatile red lines or netlike patterns. Palmar erythema commonly presents as symmetric, blanchable, slightly warm, nonscaling erythema, most frequently involving the thenar and hypothenar eminences of the palmar surface. Palmar telangiectases and palmar erythema both have primary cutaneous, systemic disease, neoplastic, infectious, and drug-induced etiologies. We describe a case of palmar telangiectases in a patient with Graves disease. We also describe the pathophysiology of palmar telangiectases and palmar erythema and present a literature review of their etiologies.

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Case Report

A 58-year-old woman presented for the treatment of mild dyshidrotic eczema on her fingers; however, examination of her bilateral palms showed matlike telangiectases of the thenar and hypothenar eminences as well as the fingertips (Figure). The rest of the examination was unremarkable. Further history revealed that the telangiectases first appeared 8 years prior to presentation, which coincided with the patient's Graves disease diagnosis. She was taking propylthiouracil with control of the disease. Her only other medication was warfarin for anticoagulation status following mitral and aortic valve replacement. The patient denied the use of any oral contraceptives or topical steroids on the palms. She denied diaphoresis, palpitations, restlessness, tremors, weight loss, joint pain, or dysphagia. She did not have a history of diabetes mellitus, alcoholism, intravenous drug abuse, or liver disease. She had a family history of Graves disease in her sister and 2 cousins.

Complete blood cell count and a comprehensive metabolic panel did not reveal any abnormalities. Given the concern for an autoimmune condition such as systemic lupus erythematosus, scleroderma, or CREST (calcinosis, Raynaud phenomenon, esophageal motility disorders, sclerodactyly, and telangiectasia) syndrome, titers for antinuclear antibodies, anticentromere antibodies, and anti–Scl-70 antibodies were drawn, which were unremarkable. Her most recent thyroid studies also were within reference range. Given that the palmar telangiectases were asymptomatic and not of concern, treatment was focused on her dyshidrotic eczema with topical steroids.

Comment

Telangiectases are lesions formed by persistent segmental dilatation of papillary plexus vessels of the skin that typically present as fine, bright, nonpulsatile red lines or netlike patterns.[1,2] They range in color from light red to deep purple and usually empty with pressure. Palmar erythema commonly presents as symmetric, blanchable, slightly warm, nonscaling erythema, most frequently involving the thenar and hypothenar eminences of the palmar surface.[3] We report a case of palmar telangiectases in a patient with Graves disease, discuss the underlying pathophysiology of both palmar telangiectases and palmar erythema, and review the literature on causes of palmar telangiectases and palmar erythema.

The underlying pathophysiology of both palmar telangiectases and palmar erythema in general is altered estrogen metabolism. It is known that hyperthyroidism stimulates hepatic production of sex steroid–binding globulin, causing a decreased metabolic clearance of estrogens and resulting in elevated

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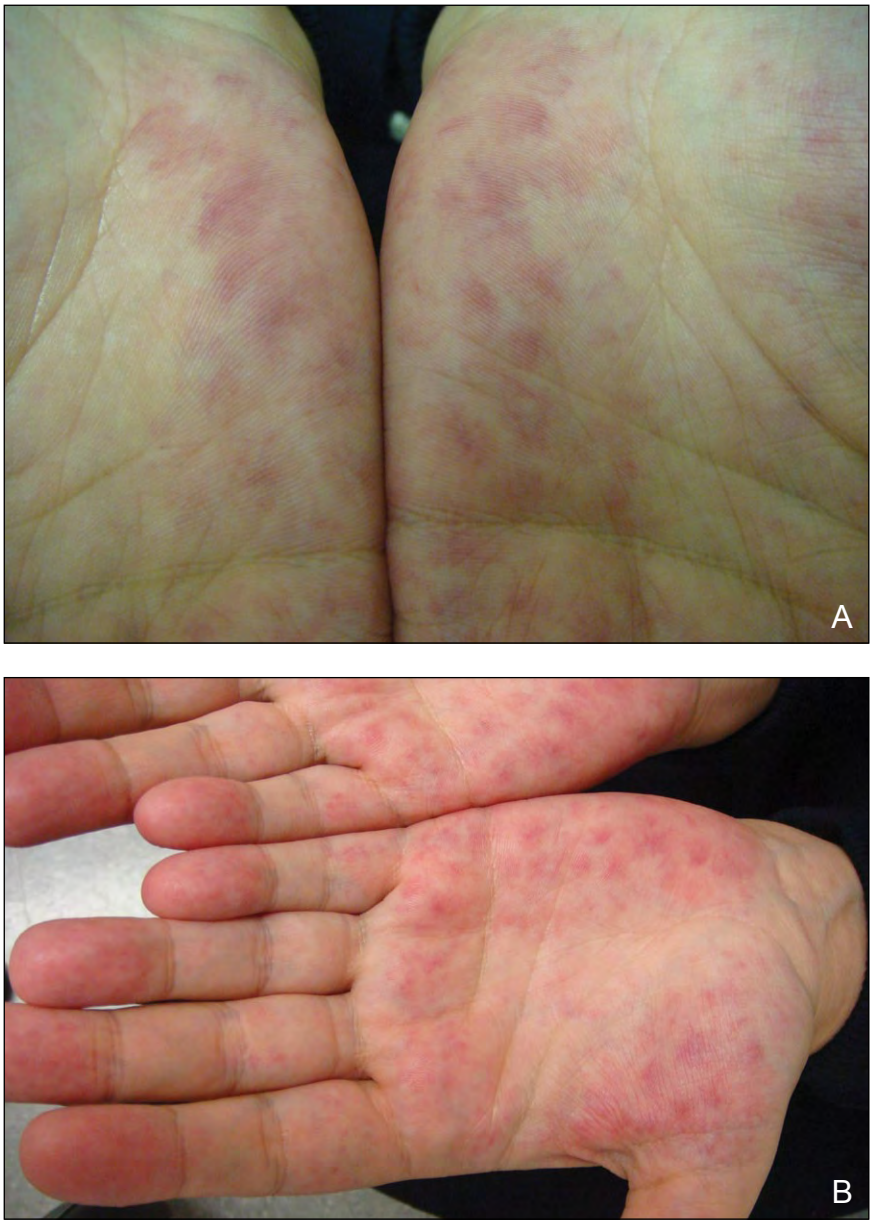

Matlike telangiectases of the thenar and hypothenar eminences as well as the fingertips in a patient with Graves disease (A and B).

levels of plasma estrogens, which may lead to telangiectases.[4] The development of telangiectases in pregnancy and chronic liver disease support this theory. Vasodilatation associated with hyperdynamic circulation is another possible cause of telangiectases.[1]

There are increased free estrogen levels in individuals with several of the conditions known to cause palmar erythema, including hepatobiliary disease, thyrotoxicosis, rheumatoid arthritis, and pregnancy.[3] Another potential cause of palmar erythema includes disordered hepatic metabolism of bradykinin and other vasoactive substances.[5] The similarity of altered estrogen metabolism coupled with the fact that both palmar telangiectases and palmar erythema have a similar histologic picture of dilatation of capillaries and superficial arterial and venous plexuses begs the question: Are palmar telangiectases and palmar erythema the same entity?

A review of the literature shows different etiologies of both palmar telangiectases and palmar erythema (Table). Both conditions share several etiologies including computer palms, lupus erythematosus, hepatitis C virus infection, and treatment with hydroxyurea. When evaluating a patient, it is vital to differentiate palmar erythema from palmar telangiectases because the underlying etiology may require different treatments.

We describe a case of palmar telangiectases seen in a patient with Graves disease. Telangiectases previously have been reported in patients with

Common Causes of Palmar Telangiectasias and Palmar Erythema

Etiologies	Palmar Telangiectases	Palmar Erythema
Primary cutaneous	Hereditary hemorrhagic telangiectasia,[6] unilateral nevoid telangiectasia,[7] purpura annularis telangiectodes,[8] computer palms,[9] urticaria pigmentosa[10]	Atopic dermatitis,[11] livedo reticularis,[3] red lunulae,[3,12] erythema ab igne,[3] computer palms[9]
Hormonal/metabolic		Pregnancy,[13] puberty,[3] liver disease,[3,14] thyrotoxicosis,[15] diabetes mellitus
Systemic disease	Lupus erythematosus,[16] CREST syndrome,[17-19] scleroderma,[19-21] sclerodermatomyositis,[22] Graves disease	Lupus erythematosus,[16,23] dermatomyositis,[24] sarcoidosis,[25] rheumatoid arthritis,[26] primary Sjögren syndrome,[27] graft-versus-host disease[28]
Neoplastic	Bronchogenic carcinoma,[29,30] lung carcinoma,[31] basal cell carcinoma[32]	Metastatic and primary brain tumors,[33] Hodgkin lymphoma,[33] gastric adenocarcinoma,[33] myeloproliferative disease,[34] leukemia[3]
Congenital/ genodermatoses	Gorlin-Goltz syndrome,[32] familial cerebral cavernous malformation,[35] hypotrichosis-lymphedema-telangiectasia syndrome,[36,37] Chiari I malformation,[38] fucosidosis,[39] focal dermal hypoplasia[40]	
Infection	Hepatitis C virus[41]	Hepatitis C virus,[41] brucellosis,[42] human T-lymphotrophic virus 1–associated myelopathy,[3] trichinellosis,[43] subacute bacterial endocarditis[44]
Drug induced	Hydroxyurea,[45] potent topical corticosteroids (personal observation of author [S.M.])	Hydroxyurea,[45] cytarabine,[46,47] doxorubicin,[46,48] fluorouracil,[48] mercaptopurine,[49] methotrexate,[50] etoposide,[51] docetaxel,[52] amiodarone secondary to liver impairment,[3,53] lipid-lowering agents secondary to liver impairment,[3,54] topiramate,[55] salbutamol[56]

Abbreviation: CREST, calcinosis, Raynaud phenomenon, esophageal motility disorders, sclerodactyly, and telangiectasia.

Graves disease[1,57,58]; however, involvement of the palms has not been described. Other conditions that can cause telangiectases, such as collagen-vascular disease and chronic liver disease as well as drug-induced causes, were ruled out. Although we cannot prove causality, we suspect our patient's palmar

telangiectases were associated with her Graves disease because they presented concurrently.

Conclusion

We report a case of palmar telangiectases in a patient with Graves disease. The pathophysiology of palmar telangiectases and palmar erythema as well as a literature review of reported conditions associated with each condition have been discussed. Evaluating a patient presenting with palmar telangiectases or palmar erythema can be a daunting task due to the many different etiologies of each condition. Therefore, it is important to perform a thorough history and physical examination, obtain a complete list of medications, and order appropriate laboratory tests or imaging studies to rule out underlying conditions. Although we cannot prove causality, when a patient presents with palmar telangiectases, Graves disease should be considered in the differential diagnosis.

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