Warfarin-Induced Skin Necrosis of the Eyelids

Skin necrosis is a rare complication of warfarin therapy that occurs between the third and 10th days of treatment. The pathogenesis of warfarin-induced skin necrosis is attributable to the emergence of a transient hypercoagulable state. The condition most commonly involves skin areas with abundant subcutaneous adipose tissue such as the breasts, buttocks, abdomen, thighs, and the extremities. We report the case of an 83-year-old woman who developed bilateral medial canthal skin necrosis following initiation of warfarin therapy.

Report of a Case. An 83-year-old white woman with a history of aortic valve disease, hypertension, and anemia was admitted for elective aortic valve replacement. Her ocular history was notable for glaucoma and macular degeneration in both eyes. Following surgery, she developed atrial fibrillation and started taking Lovenox (Sanofi-Aventis, Bridgewater, NJ) (30 mg every 12 hours), subsequently replaced by warfarin (4 mg every day), maintaining the international normalized ratio within the therapeutic range of 2.0 to 3.0. Seven days after initiating warfarin therapy, the patient developed bilateral periorbital ecchymoses with dark lesions on the medial aspect and similar skin lesions on the upper back and the right arm.

Ophthalmic examination disclosed visual acuity of 20/200 OU, moderate bilateral periorbital ecchymoses, and full-thickness necrotic lesions measuring 6 × 7 mm involving the medial canthal region (Figure). Anterior segment examination results were unremarkable. Funduscopy revealed extensive geographic atrophy in both eyes.

A diagnosis of warfarin-induced skin necrosis was made. Warfarin therapy was discontinued, and treatment with fresh frozen plasma, vitamin K, and heparin was initiated. Local therapy included debridement of the necrotic tissue and topical bacitraclin ointment. The periorbital lesions improved with demarcation of the necrotic areas within 5 days. At 2 months’ follow-up, the lesions had healed with mild scarring.

Comment. Warfarin-induced skin necrosis was initially reported by Flood et al1 in 1943. The condition usually occurs within 10 days of the initiation of warfarin therapy. The lesions are initially erythematous, purpuric, and sharply demarcated. They may resolve spontaneously or progress to form hemorrhagic bullae with eventual necrosis. Eighty percent of lesions occur in the lower half of the body in areas with abundant adipose tissues, such as the thighs, breasts, abdomen, and buttocks. In our patient, necrotic lesions uncharacteristically affected the medial canthal region of the eyelids as well as the trunk and arm. The mechanism for the development of warfarin-induced skin necrosis involves an early decline in vitamin K–dependent coagulation factors with short half-lives, such as proteins C and S and factor VII, leading to a transient hypercoagulable state.2 The risk factors include high loading doses of warfarin, prior deficiencies of proteins C and/or S and antithrombin III, and mutations in the methylenetetrahydrofolate reductase gene.3 Histopathologic studies have demonstrated thrombosis of the subcutaneous and dermal vessels with a relative lack of inflammation.4 Small lesions heal by secondary intention, whereas large lesions require surgical intervention.

Nastaran Rafiei, MD
Homayoun Tabandeh, MD
Marc Hirschbein, MD

Correspondence: Dr Tabandeh, Wilmer Eye Institute, B-20, Johns Hopkins Hospital, 600 N Wolfe St, Baltimore, MD 21287-9248 (htaband1@jhmi.edu).

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