



EXCEPTIONAL CASE

Repigmentation in vitiligo universalis after starting dialysis—could they be related?

Navid Farahbakhsh¹, Colton Nielson² and Ryan Gillihan ²¹College of Medicine, University of Florida, Gainesville, FL, USA and ²Department of Dermatology, University of Florida, Gainesville, FL, USACorrespondence and offprint requests to: Ryan Gillihan; E-mail: rgillihan@dermatology.med.ufl.edu**ABSTRACT**

Vitiligo is an acquired disorder of pigmentation characterized by the development of white macules and patches on the skin. Although multiple theories have been proposed to understand the underlying pathophysiology behind the pigment loss, the exact etiology remains unknown. Vitiligo universalis is an extremely rare variant that causes nearly complete depigmentation of the entire body surface. Treatment is challenging, especially when pigment loss is generalized and diffuse. We present a unique case of a patient with vitiligo universalis that had remained untreated and stable for >20 years until she developed repigmentation shortly after initiation of dialysis.

Keywords: dialysis, repigmentation, vitiligo universalis**BACKGROUND**

Vitiligo is an acquired depigmenting disorder with an estimated prevalence of 0.5% and incidence of 0.5–2% worldwide. Vitiligo universalis is an extremely rare variant that causes nearly complete depigmentation of the entire body surface. Although multiple theories have been proposed to understand the underlying pathophysiology, the exact etiology remains unknown. There are three major hypotheses for the pathogenesis of vitiligo which include: biochemical/cytotoxic, neural and autoimmune [1, 2]. The loss of functioning melanocytes in the skin leads to the development of white patches; however, the presence or absence of these melanocytes and their functionality in patients with vitiligo continues to be a subject of debate. The clinical course of vitiligo is unpredictable as lesions can remain stable or progress slowly for years. Treatment is challenging, especially when pigment loss is generalized and diffuse. Rarely, patients may experience spontaneous repigmentation. Herein, we present a unique case of a patient with vitiligo universalis

that had remained untreated and stable for >20 years until she developed repigmentation shortly after initiation of dialysis.

REPORT OF A CASE

A 60-year-old African American female with a past medical history of end-stage renal disease and vitiligo universalis presented to our clinic for evaluation of new brown spots. She was diagnosed with vitiligo at 7 years of age, which progressed to nearly complete depigmentation (>95% of body surface area). Her vitiligo had remained completely stable and untreated for >20 years until November 2017 when she was initiated on dialysis for worsening renal failure. Over the following weeks, she noticed new areas of pigmentation developing on the face, arms, abdomen and back. She was not using any topical treatments and denied any other significant changes around that time.

On physical examination, there were scattered brown macules on the face, trunk and bilateral arms (Figure 1); lesions on

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FIGURE 1: Clinical images of repigmentation in a patient with vitiligo universalis. Shortly after starting dialysis, the patient started developing scattered brown macules on the face (A), trunk and upper extremities (B).

the arms seemed to demonstrate a perifollicular predominance. To investigate the etiology of the pigment, we performed two punch biopsies to include areas of both pigmented and depigmented skin. When compared with adjacent vitiliginous skin, pigmented areas revealed basal hypermelanosis in an atrophic epidermis; SOX10 stain revealed an increase in density of melanocytes present at the dermo-epidermal junction, whereas Fontana-Masson stain demonstrated a marked increase in basilar melanin pigment. These findings confirmed our clinical suspicion of spontaneous repigmentation.

DISCUSSION

The underlying mechanism for vitiligo universalis is still unknown. There are three major hypotheses for the pathogenesis of vitiligo: biochemical/cytotoxic, neural and autoimmune [1, 2]. The loss of functioning melanocytes in the skin can cause the development of white patches. The presence or absence of these melanocytes and their functionality in patients with vitiligo has been debated.

A study in 2000 determined that melanocytes are never completely absent in the depigmented epidermis and that the

functionality of melanocytes can be recovered [3]. This study successfully established melanocyte cultures with cells that produce melanin, from depigmented epidermal suction blister tissue from 12 randomly selected patients with vitiligo. These findings are consistent with our patient, who had the onset of repigmentation and melanocyte recovery shortly after beginning dialysis treatment, which to our knowledge has never been reported previously.

This case supports previous knowledge on the reactivation capability of melanocytes in vitiligo epidermis [3-5]. In addition, this case also demonstrates the possibility of repigmentation in vitiligo patients after initiating dialysis treatment. While we cannot be certain that this was indeed the cause of repigmentation and the exact mechanism is unknown, it potentially provides an insight into the poorly understood pathophysiology of vitiligo. Furthermore, by presenting this case, we hope to make nephrologists and other clinicians aware of this possibility, which could provide a platform for other cases to be reported and encourage referral to dermatology when appropriate.

CONFLICT OF INTEREST STATEMENT

None declared.

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