Nevus Anemicus

**CLINICAL FEATURES**

Nevus anemicus is a rare congenital functional-type vascular malformation mostly observed in females. Clinically, the lesion consists of a circumscribed skin area paler than the adjacent skin. The margins of this hypochromic macula are irregular, and satellite lesions are frequently seen close to the primary lesion, also with the morphology of a hypochromic macula with irregular margins but smaller than the original lesion. Although nevus anemicus arises primarily on the upper trunk region, this vascular malformation can develop on any area of the body surface. When the borders are subjected to diascopy, the lesion is indistinguishable from the adjacent healthy skin. No erythema is caused by scratching or rubbing the lesion or if heat or cold is applied to the affected area (Figs. 56-1 to 56-3); examination under Wood lamp confirms there is no intensification of the lesion. All these maneuvers allow clinical differentiation of nevus anemicus from other hypopigmented macules caused by abnormalities of melanin pigmentation, for example, vitiligo, nevus achromicus, or hypochromic macules from tuberous sclerosis. Frequently, nevus anemicus is one of the components of phakomatosis pigmentovascularis types II, III, and IV.5,9,12,14

Some skin lesions with a persistent pale purple erythematous area have been described. The appearance of these lesions is due to an increase of the vasoconstrictor tone in the thermoregulatory vessels, which leads to relative ectasia of the most superficial vessels of the dermis in the affected area. These lesions, called nevus oligemicus, are considered variants of nevus anemicus.8

**HISTOPATHOLOGIC CHARACTERISTICS**

Nevus anemicus is a functional-type, not anatomical, vascular malformation. Thus, histopathologic, immunohistochemical, and ultrastructural studies have not been able to show any structural abnormality in the blood vessels of the affected skin.1 However, intraleSIONal injections of vasodilating substances such as bradykinin, pilocarpine, acetylcholine, 5-hydroxytryptamine, nicotine, or histamine do not cause vasodilatation or erythema in the skin area affected by a nevus anemicus.1 On the other hand, erythema does develop if an axillary sympathectomy has previously been performed1 or with an intraleSIONal injection of an alpha-adrenergic antagonist.2,3 Thus, it seems that nevus anemicus is the result of permanent vasoconstriction.
due to regulatory disorders of the adrenergic receptors in the blood vessels walls in the affected area. Furthermore, it has been shown that the blood vessels in the skin affected by a nevus anemicus do not show the normal physiologic response to proinflammatory cytokines, at least regarding E-selectin expression. On the other hand, if a contact dermatitis develops in a skin area that has previously been affected by a nevus anemicus, no expression of intercellular adhesion molecule-1 (ICAM-1) or human leukocyte antigen-DR (HLA-DR) is seen in the epidermal keratinocytes of the affected area, which is probably due to the absence of infiltrating lymphocytes. All these findings support the notion that nevus anemicus is the result of a local increase of catecholamine-induced vascular reactivity. Autologous transplantation reveals predominance of the donor area, that is, the transplantation of lesional skin to an area of healthy skin reproduces the lesion in the recipient skin area. This further supports the idea that the anemic nevus is caused by increased susceptibility to vasoconstrictor stimuli or a decreased blood vessel response capacity towards vasodilatory stimuli in the affected skin.

The lesions known as vascular twin nevi refer to a telangiectatic nevus and a nevus anemicus occurring simultaneously in the same patient in adjacent skin areas and are interpreted as allelic expressions of somatic mutations.

**TREATMENT**

Nevus anemicus usually requires no treatment. If the patient wants to camouflage the lesion for cosmetic reasons, a tinted cream is usually sufficient.

**REFERENCES**


**FIGURE 56-3.** A: Nevus anemicus involving the skin of the right breast in a middle-aged woman. B: Friction to the area causes perilesional erythema, but the anemic nevus remains hypochromic.