Melanocytic Nevus

Melanocytic nevi are benign skin tumors of melanocytes described as nested proliferations at the dermal-epidermal junction. Two important types include junctional nevi and intradermal nevi. Risk factors include genetics and childhood sun exposure. Although small, each one of these lesions carries a risk of transforming into melanoma.

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Characteristics

Benign Tumor of Melanocytes

Benign-bunny Melon-dice

Melanocytic nevi, or moles, consist of a benign proliferation of melanocytes in the skin. Recall that melanocytes produce the pigment melanin. Melanocytes that are not part of a melanocytic nevus typically reside within the basal layer of the epidermis and are organized in a single layer, whereas melanocytes that are part of a nevus are clustered in nests within the epidermis or dermis. Melanocytes that help form a nevus are also sometimes referred to simply as "nevus cells".

Nested Proliferations at Dermal-Epidermal Junction

Nests Pro-lifter Deer-mouse E-pick-deer-mouse

While melanocytes not involved in the formation of nevi are arranged in a single layer along the basal membrane of the epidermis, nevus cells (melanocytes that form part of a nevus) are arranged as clusters or nests along the dermal-epidermal junction and within the dermis. The resulting nevi are referred to as junctional and intradermal nevi respectively.

Junctional

Junk

Junctional nevi, which are composed of nevus cells located at or near the dermal-epidermal junction, are characteristically macular, or flat, and dark in color. The dark pigmentation is conferred by melanin.

Intradermal

Skin-suit-man

Nevi formed by melanocytes clustered together within the dermis, referred to as intradermal nevi, appear grossly as flesh-colored papules. Intradermal nevus cells typically lose their ability to produce melanin, hence therefore they will have a similar pigmentation as the surrounding skin.

Risk Factors

Genetics

Genetic-mutant

Genetics play a large role in the predilection of an individual to develop congenital or acquired melanocytic nevi. Multiple genes have been implicated, such as interferon regulatory factor 4 (IRF4) and telomerase reverse transcriptase (TERT).

Childhood Sun Exposure

Child tanning

Degree of sun exposure during childhood plays a role in the development of melanocytic nevi. Particularly, intense and intermittent exposure is thought to increase incidence.

Considerations

Melanoma

Melon-gnome

Although the vast majority of nevi a person has remains benign, each one carries a small potential risk of becoming a melanoma, which is malignant. It is important to remember however that over half of melanomas arise de novo, i.e., not in association with any nevus. Although each nevus carries this small risk, it is not recommended that unremarkable nevi be removed prophylactically. Instead, individuals with many nevi are advised to receive routine full-body skin examinations on a regular basis.

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