Benign Skin Neoplasms in Pediatric Dermatology

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Dermatologists are often consulted to evaluate cutaneous tumors of the skin in children. Fortunately, the majority of neoplasms commonly seen in pediatric dermatology are benign; however, malignant lesions have been reported. The first step in the evaluation of a cutaneous neoplasm in children is to obtain a thorough history and physical examination, with important emphasis on the duration of the lesion (congenital versus acquired), change in clinical appearance over time (enlargement, color change, evolution), and symptoms (tenderness, bleeding, pruritus). In addition, the presence or absence of other physical features (limb-length discrepancy, neurological disorders, etc.) is important because some cutaneous neoplasms in children may be associated with certain syndromes.

A practical way to categorize common benign neoplasms in pediatric dermatology is to group them based on their cell or structure of origin. The following table summarizes *common* benign skin neoplasms seen among pediatric patients. Please note that this table is intended to represent a summary of common entities, but does not include a comprehensive, exhaustive list as this is beyond the scope of this article.

Some cutaneous neoplasms can be closely monitored in children for any changes or symptoms. When the diagnosis is uncertain, a biopsy is recommended. The treatment of such lesions ultimately depends on the histology, clinical behavior, and location as some lesions may raise concern for cosmetic disfigurement over time. Referral to a pediatric dermatologist may be warranted in certain situations.

Category	Benign Neoplasm	Clinical Features	Clinical Pearls
Epidermal			
	Epidermal nevus	Verrucous-appearing brown or tan papules or plaque, sometimes in a linear fashion	Epidermal nevi (EN) that demonstrate “epidermolytic hyperkeratosis” on histology may be associated with bullous congenital ichthyosiform erythroderma EN + abnormalities in other organ systems may suggest the diagnosis of epidermal nevus syndrome
	Nevus sebaceous	Tan to yellow, hairless plaque on the face or scalp	May be associated with trichoblastoma, syringocystadenoma papilliferum, and basal cell carcinoma
Melanocytic			

	Congenital melanocytic nevus	Present at birth or within the first year of life; light to dark brown or pink macule, papule, patch or plaque +/- hypertrichosis Categorized (according to their greatest diameter in adulthood): - *Small*: <1.5 cm - *Medium*: 1.5–19.9 cm - *Large*: ≥20 cm	Large and giant congenital nevi may be associated with an increased risk of melanoma and underlying neurocutaneous melanosis
	Spitz nevus	Pink or red-brown, smooth-surfaced, hairless, dome-shaped papule or nodule Presence of brown pigmentation visualized with diascopy may help confirm the melanocytic origin of lesion	Clinical-pathologic correlation is mandatory to exclude the diagnosis of melanoma
	Halo nevus	Centrally located pigmented nevus surrounded by a halo of leukoderma	May be associated with vitiligo and rarely melanoma
	Nevus spilus	Light brown to tan macule or patch studded with several dark brown macules or papules	Serial clinical monitoring + photograph surveillance is recommended May be associated with underlying syndromes such as phakomatosis pigmentovascularis or phakomatosis pigmentokeratotica
Neural			
	Accessory/Supernumerary/ Rudimentary Digit	Skin colored papule or nodule most often arising from the ulnar aspect of the fifth digit	Path shows an acral papule with nerve bundles +/- bone or cartilage
	Neurofibroma	Soft, flesh-colored, rubbery papule or nodule exhibiting a positive “buttonhole” sign	May be sporadic or inherited (neurofibromatosis or NF type 1)
Vascular			
	Infantile hemangioma	Most common tumor of infancy Appearance varies depending on superficial, deep or mixed nature	Risk factors: female infants, premature neonates, multiple gestation pregnancy, advanced maternal age, placenta previa and pre-eclampsia Large, extensive, segmental facial hemangiomas → screen for PHACES syndrome Hemangiomas in “beard” distribution → consider possible airway hemangioma

	Pyogenic granuloma	Often rapidly growing, friable and ulcerated exophytic tumor that usually bleeds following minor trauma	Treatment involves simple shave excision followed by electrodessication to the base of the lesion
Miscellaneous			
	Dermatofibroma	Tan to dark brown firm dermal nodule exhibiting a "dimple sign"	Immunohistochemical staining can differentiate from dermatofibrosarcoma protuberans
	Infantile digital fibroma	Dermal or subcutaneous nodule arising on the dorsal or lateral aspect of the finger or toe (often sparing the thumb and great toe)	Treatment may include watchful waiting versus excision (although recurrence rates are high)
	Pilomatricoma	Typically a solitary, flesh colored to white papule or nodule (often firm due to calcification) on the head, neck or upper extremity Often exhibits "teeter-totter" sign or "tent" sign	Familial cases may be associated with myotonic dystrophy Multiple lesions can be seen in Gardner syndrome, Rubinstein–Taybi syndrome, and trisomy 9
	Juvenile xanthogranuloma (JXG)	Firm, round papule or nodule occurring on the head, neck or trunk Early lesions are erythematous, while older lesions become more yellow to orange in color	Ophthalmologic evaluation is necessary as the eye is the most common site of extracutaneous involvement Triple association exists between JXG, juvenile chronic myelogenous leukemia (JCML), and NF
	Mastocytoma	Solitary or multiple flesh-colored to yellow-tan colored papules or plaques exhibiting Darier's sign	Clinical variants of mastocytosis includes mastocytomas (single or multiple), urticaria pigmentosa, bullous mastocytosis, diffuse cutaneous mastocytosis, and telangiectasia macularis eruptiva perstans (TMEP)

*** Sources:*

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