Scalp Dermatology for the Hair Restoration Surgeon: Scalp Lesions

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It has been suggested that our specialty should expand its scope to encompass general scalp surgery.[1] In this regard, it is essential that we are knowledgeable in scalp anatomy as well as surgical principles that are unique to the scalp. The purpose of this report is to compile for the hair restoration surgeon a list of lesions that may be encountered on the scalp and would be amenable to surgical treatment. The first list includes entities that are common to any skin location, and are therefore the most likely to be encountered. The second list is comprised of lesions that have a specific predilection for the scalp. As an adjunct to this report, readers are encouraged to browse through a dermatologic text or atlas and view clinical photos as such photos are invaluable in developing the ability to recognize these entities in a clinical setting.

Lesions Common to Any Skin Site

Seborrheic Keratosis: Benign, slightly raised tan to brown warty plaques that appear to be "pasted" to the skin. They rarely grow larger than 2–3cm. in diameter and can easily be removed by curettage or shave excision. The most difficult differential diagnosis is to differentiate a dark, solitary seborrheic keratosis from a melanoma.

Actinic Keratosis: Erythematous, rough scaly plaques with poorly defined borders seen mostly on bald (sun-exposed) areas of light-skinned individuals. Actinic Keratoses can develop into cutaneous horns or, at the rate of approximately 1%, into squamous cell carcinoma. Treatment consists of curettage, liquid nitrogen cryotherapy, or topical chemotherapeutic agents.

Cutaneous Horn: Most common on the face and scalp. When they grow to a large size on the scalp, they can resemble the horns of animals. Clinically, they present as long (2-60mm) keratotic horny growths with the base wider than the distal part. "Cutaneous horn" is a gross clinical descriptive term with the differential diagnosis including actinic keratosis, viral verruca, squamous cell carcinoma, and keratoacanthoma (a benign locally growing neoplasm). Treatment can consist of shave excision, curettage and electro desiccation, or elliptical excision with primary closure. The removed lesions should be submitted for histopathologic examination.

Dermal or Compound Nevus: Skin colored or tan to dark brown papule commonly referred to as a "mole." Usually occurs as a solitary lesion. Does not require removal unless it is chronically irritated or there is suspicion of dysplastic nevus or melanoma. If a benign lesion is suspected, treatment can consist of shave excision. Otherwise complete excision is recommended.

Junctional nevus: These lesions are flat or slightly raised, ranging in color from tan to dark brown. Size varies between 1–8mm in diameter. If there is suspicion of dysplastic nevus or melanoma, complete excision is recommended.

Dysplastic Nevus: This form of nevus has irregular or indistinct borders, varied colors, and a flat or slightly raised surface. Some of these lesions can be precursors of melanoma and the presence of multiple dysplastic nevi is a marker for increased melanoma risk. Deciding which dysplastic nevi should be removed for histopathologic study in a patient with multiple lesions is beyond the scope of this article and these patients should be referred to a dermatologist. If a solitary lesion is encountered, it should be excised.

Basal Cell Carcinoma: This locally invasive carcinoma presents as a waxy, translucent nodule with telangectases. Their shiny appearance is commonly described as "pearly," likened to the reflection of light seen when viewing a pearl. Enlargement results in a central depression or ulceration, and bleeding is common with minimal friction.

Basal cell carcinomas occur most often on sun-exposed areas of light-skin individuals. Small lesions can be removed with curettage and electro desiccation after biopsy has confirmed the diagnosis. Larger lesions should be excised or treated with Mohs' microscopically-controlled surgery.

Squamous Cell Carcinoma: Frequently begins at the site of an actinic keratosis on sun-exposed areas. Lesions are erythematous and have a hard rounded base often with a keratotic center. Squamous cell carcinoma can metastasize, although this occurs less frequently in tumors that arise from actinic keratosis. Treatment is the same as for basal cell carcinoma.

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Lesions That Favor the Scalp

Pilar Cyst: Located in the deep dermis and subcutaneous fat, these pea-size to egg-size nodules present with a normal appearing scalp at first. As their size increases, the overlying scalp becomes alopecic due to pressure on the hair follicles. Pilar cysts can occur as a solitary lesion but are often multiple. The cystic contents often become calcified. Treatment consists of careful incision of the overlying tissue and subsequent dissection and removal of the entire cyst capsule.

Pilar Tumor: This occurs as a solitary tumor predominantly on the scalp of elderly women. Histologically: The squamous epithelium of the tumor can resemble squamous cell carcinoma because of a slight degree of nuclear anaplasia.

Nevus Sebaceous: Presents at birth on the scalp or face. During childhood it has the appearance of a slightly raised, yellowish hairless plaque that, after puberty, becomes verrucous and thickened. They are solitary and range in size from a few millimeters to several centimeters in diameter. Because basal cell carcinoma can develop in 10% of cases, complete excision is recommended.

Cylindromas: These are benign tumors of apocrine sweat gland origin that typically occur on the scalp or face. They present as round rubber-like nodules, which are pinkish to blue in color. Size ranges from a few millimeters to several centimeters. Solitary cylindromas are considered to be non-hereditary. A dominantly inherited form exists in which multiple tumors are clumped together resembling bunches of grapes. Occasionally, they are so numerous that they cover a large surface area of the scalp and are termed "turban tumor." In the multiple, familial form, women are chiefly affected. Treatment is by excision.

Syringocystadenoma Papilliferum: It is felt that this entity is a hamartoma, which commonly appears as grouped red papules 1-3mm in diameter. Some papules have an umbilicated center and, with magnification, pin-head size vesicle-like inclusions can be seen within the papules. Sometimes, only a warty surface is apparent. This entity can occur de novo but most commonly develops in a nevus sebaceous. Treatment is by excision.

Angiolymphoid Hyperplasia with Eosinophilia (Kimura's Disease): This condition appears as single or multiple nodules on the face, ears, or scalp. The nodule(s) are purple-red and are covered by a thin, shiny epithelium, which may ulcerate. Peripheral eosinophilia may be present. Treatment is by surgical excision.

Angiosarcoma: This is a malignant vascular tumor that clinically resembles a bruise or contusion, as it is bluish or purple in color. Often, there is a reddish border, satellite nodules, and small areas of hemorrhage within the tumor resembling "blood-blisters." There is a predilection for the skin of the head in general but particularly, the scalp. Metastatic spread can occur after a significant period of local extension. Surgical excision and Mohs' surgery have been used to treat early lesions.

Port-wine Stain of the Nape (Nevus Flammeus Nuchae): Included only because of its frequency; it occurs in 5-10% of the general population. It is a benign vascular proliferation, which is present at birth and appears as a flat, pink to dark-red area that blanches with pressure. Treatment is generally not necessary because of hair coverage of this area. Treatment of port-wine stains in general is achieved with vascular lasers for cosmetic purposes.

Cutis Verticis Gyrata: Although this entity is not a neoplasm, it can have a tumor-like appearance. It consists of juxtaposed scalp folds that, when deep, resemble cerebral gyri. The clinical appearance is as if there is excess scalp for the size of the head. No treatment is necessary, although there have been reports of the use of scalp reduction to improve the appearance.

The topic of scalp dermatology has been touched upon previously in the *Forum* as well as in our meetings. The focus of these presentations has predominantly been the different alopecias. To the author's knowledge, this is the first report directed to the hair restoration surgeon that summarizes skin lesions likely to be encountered when performing scalp surgery. Although the list in cursory, it is hoped that along with review of clinical photos, it will create greater awareness and expand our knowledge of the scalp as a unique anatomical area.✧

REFERENCES

1. Seery, G. "Brave New World." *Hair Transplant Forum Int'l.* Vol. 12, No.1; Jan/Feb 2002.
2. Fitzpatrick, Thomas B, et al., eds. Dermatology in General Medicine. Second Edition. McGraw-Hill.
3. Domonkos A, et al., eds. Andrews' Diseases of the Skin. Seventh Edition. W.B. Saunders.
4. Korting GW and Denk R, eds. Differential Diagnosis in Dermatology. W.B. Saunders, 1976.