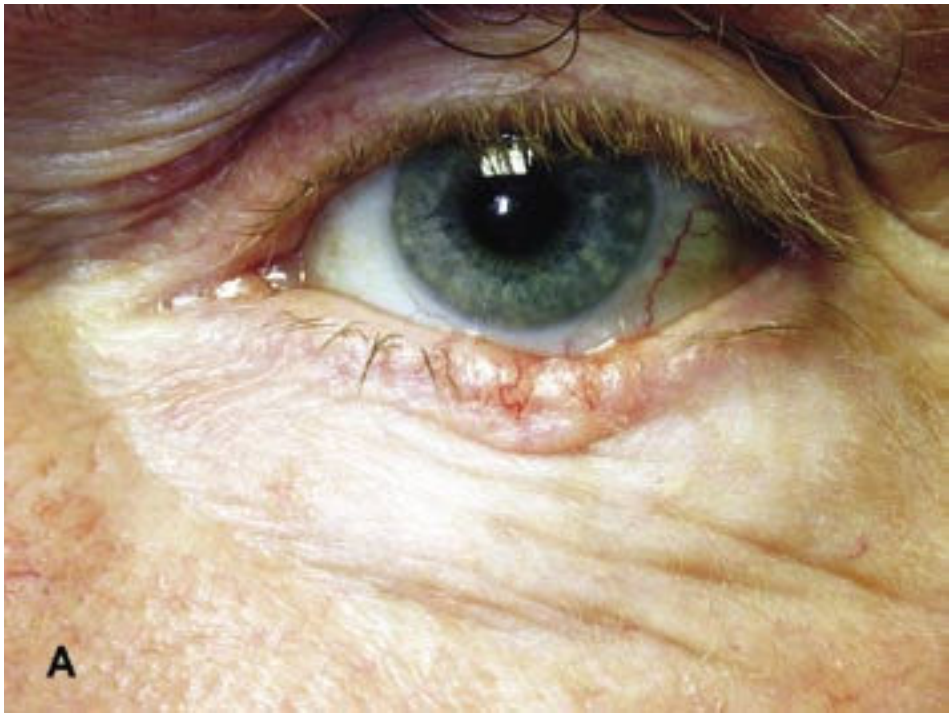
Skin Cancer of the Head and Neck

By John McCann, M.D.

Skin cancer is the most frequently occurring neoplasm of adults and the sun-exposed head and neck are common sites for skin cancer to occur. About 85 percent of these are basal cell carcinoma, which fortunately is the least aggressive form of skin cancer. More aggressive forms of skin cancer include squamous cell carcinoma and melanoma. The lifetime risk of developing skin cancer in the United States is nearly one in three. This risk is probably even greater in the state of Utah, where we have many fair-skinned individuals who love to work and play in the outdoors. All specialties of medicine have an opportunity to inspect the head and neck each time we speak with a patient. It is important that we all play a role in diagnosing this common problem.

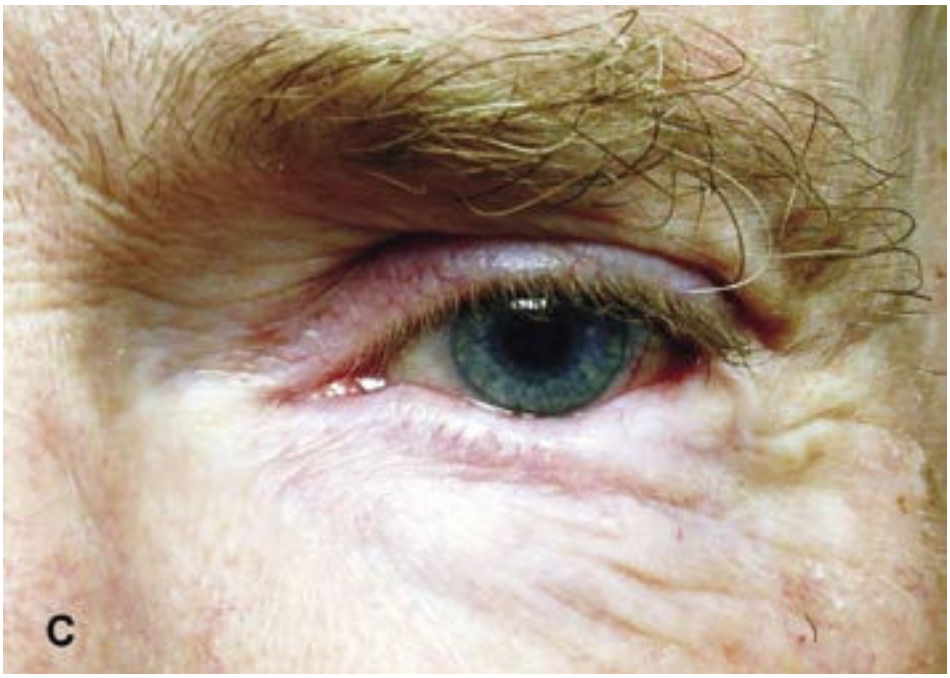
CAUSES OF SKIN CANCER

Genetics (e.g., basal cell nevus syndrome, skin pigmentation), exposure to arsenic or ionizing radiation all predispose one to skin cancer. The single most important modifiable risk factor for skin cancer is excessive exposure to sunlight. The ultraviolet portion of the spectrum is divided into UVA, UVB and UVC. UVC radiation is absorbed by the atmosphere. The UVB portion of the spectrum is an important carcinogen. The ozone layer in the earth's stratosphere protects our skin by absorbing much of the UVB portion of the spectrum; it has been estimated that a 5 percent reduction in the ozone layer can cause a 15 percent increase in the risk of skin cancer. In the 1970s scientists began to warn that the ozone layer would be depleted by chemicals used in industry and in aerosol sprays. This concern was confirmed in 1985, when a hole in the ozone layer was discovered over Antarctica. In 1989, the Montreal Protocol, which bans ozone-busting chemicals, was initiated and if the protocol is followed by all countries, it is estimated that the protective ozone layer will begin to restore itself to normal levels in a decade.



Basal cell carcinoma of the lower eyelid. Note the shiny nodule with telangiectatic vessels and loss of eyelashes.

After complete removal of the lesion with Mohs surgical resection.



After reconstruction of the lower eyelid.

PREVENTION OF SKIN CANCER

Limiting exposure to sunlight is the most important action that can be taken to prevent skin cancer. It is particularly important to avoid exposure to the sun between 10 a.m. and 4 p.m.; when this is not practical, one should wear protective clothing. A wide-brimmed hat and UV absorbing sunglasses are very effective in protecting the face. Sunscreen or sunblock of SPF 15 or higher, applied liberally and frequently, can also reduce the risk of skin cancer. Sunscreen lotions selectively absorb UVB radiation and do not protect the skin from UVA radiation. Historically, UVB radiation has been thought to be the most important carcinogen, but more recent data implicates UVA as well. Lack of protection from UVA radiation is one of the factors hypothesized to be important in the doubling of the incidence of malignant melanoma of the skin over the last 20 years. Sunblocks like the opaque white zinc oxide, historically worn on the noses of life guards, have been replaced with micronized titanium dioxide or zinc oxide. These inconspicuously worn powders act like tiny mirrors, reflecting light and thus protecting against both UVA and UVB. Micronized particles are well tolerated by adults and children alike and they do not sting the eyes like most sunscreens.

Education of parents about the risk of exposing children to sun is important because about three fourths of lifetime exposure to sun occurs before the age of 18. Despite this, the majority of children play outside without adequate protection from the sun and report getting sunburned at least once yearly.

DIAGNOSIS OF SKIN CANCER

The single most important step in diagnosing skin cancer is developing an adequate level of suspicion about a skin lesion to biopsy or refer the patient for biopsy. On one hand, the outcome of many skin cancers, such as melanoma, can be markedly improved with early diagnosis; on the other hand, there is little risk involved in skin biopsy. This puts the onus on the physician to biopsy suspicious skin lesions.

Before focusing on the lesion, the physician should think about the risk for skin cancer developing in the patient's skin. Basal cell carcinoma and squamous cell carcinoma most frequently occur in sun-damaged skin and most patients diagnosed with new skin cancer lesions have a history of prior skin cancer lesions. In order to facilitate early diagnosis, patients with significant sun damage or history of skin cancer should be followed at least yearly by a dermatologist.

All types of skin cancer slowly enlarge over a period of months to years. Lesions that enlarge during this timeframe should be biopsied. Lesions that enlarge over a period of days or weeks are more likely to be infectious or inflammatory in nature. Basal cell carcinomas present as raised nodules with central ulceration. Any ulcerated lesion that does not heal over a period of several weeks should be biopsied. When skin cancer occurs on the eyelid margin, they typically cause the eyelashes to fall out. Any eyelid lesion that causes loss of eyelashes should be biopsied. Squamous cell carcinomas typically present as elevated nodules coated with keratin. Melanoma is the most lethal skin cancer and somewhat less linked to sun exposure, so a great degree of suspicion must be maintained for pigmented skin lesions in all patients. Pigmented lesions that are **A**symmetrical, have indiscrete **B**orders, changes or irregularity of **C**olor, **D**iameter of greater than ¼ inch, or are **E**levated or have an uneven surface should be biopsied.

TREATMENT OF SKIN CANCERS OF THE HEAD AND NECK

After a skin biopsy comes back positive, the lesion should be treated. There are many forms of treatment for skin cancer including curettage, liquid nitrogen, radiation, and Imiquimod. The highest overall success rate is with Mohs micrographic surgery (over 98 percent success). Mohs surgery, with microscopic control of tumor margins, is particularly well suited to skin cancers of the head and neck, where the maximum preservation of uninvolved tissue is desired. Mohs surgeons typically work together with a reconstructive surgeon who reconstructs the defect left after removal of the mass. Reconstructive surgeons may use flaps, free flaps, or skin grafts to reconstruct the skin. The eyelid skin is one of the areas of the head and neck most commonly involved with skin cancer. Reconstruction of the highly specialized structures of the eyelid is one of the most complex types of facial reconstruction. Ophthalmic plastic and reconstructive surgeons repair defects of the eyelids and face caused by removal of skin cancer. ■