Basal Cell Carcinoma: A Primer on Diagnosis and Treatment

Several factors including age, location, and risk of recurrence play an important role in the diagnosis and treatment selection of BCCs.

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Basal cell carcinoma accounts for approximately 80 percent of non-melanoma skin cancer (NMSC), with an incidence of approximately 146 per 100,000. It varies with age, primarily affects skin types 1 and 2, and also often re-occurs 25-30 years later. Although about 90 percent of all primary BCCs are cured at five years by surgery, those that recur may lead to significant morbidity and disfigurement, or, in rare cases, metastasis.

DIAGNOSIS AND TREATMENT: AGE, LOCATION, AND OTHER FACTORS TO CONSIDER

BCC distribution is primarily seen on the head and face, with approximately 70 percent seen on the nose (nose tip and alae). Only 25 percent of BCCs are seen on the trunk and five percent are seen on the penis, vulva, or perianal skin. Most BCCs therefore occur on sun-exposed areas of very fair individuals. Environmental factors can play a role, particularly in BCCs in non-exposed areas. Such factors include exposure to coal, arsenic, paraffin, tar, certain industrial oils and radiation. Burns and their complications have also been associated with BCC, while genetic factors have been shown to contribute to incidence, as well.

The clinical characteristics of the lesions may influence the decision making process. These include the location, the extent, and invasive-ness of tumor, as well as the size of the tumor and recurrence.

After confirming diagnosis of BCC with a biopsy, treatments may vary depending on the histological subtype of the BCC: undifferentiated (e.g. pigmented) BCC, superficial BCC, and infiltrative BCC; undifferentiated keratotic BCC, sebaceous differentiation, adenoidal differentiation, and nodulocystic BCC.

The prognosis of BCC can be excellent; however, if BCC is allowed to progress it can cause significant morbidity and disfigurement. Moreover, cosmetic disfigurement is not uncommon even in smaller tumors. Location of tumor and subsequent removal and repair may leave an area of the face with a significant scar.
The clinical characteristics of the lesions may influence the decision making process. These include the location, the extent, and invasiveness of tumor, as well as the size of the tumor and recurrence. Location of the tumor is particularly critical, as local destruction can be more severe and occur much more quickly in some sites than in others. For example, periorbital tumors can invade the orbit leading to subsequent enucleation and/or blindness. Medial canthus tumors tend to be deep and invasive. They may follow embryonic planes and subsequent perineural extension and loss of nerve function.

RISK OF RECURRENCE
Recurrence of BCC is quite common, with 35 percent of patients developing another tumor within three years. They may also have a 50 percent chance of developing a non-recurrent tumor within five years. Therefore, it is important to have regular skin screenings.

The patient’s age is also an important factor. Data show that damage from the sun began at an early age but may not appear for 20 to 30 years. It has been estimated that intensive sun protection before the age of 18 can reduce NMSC by 78 percent. The histological subtype and the type of treatment the patient received may also predict recurrence. The recurrence rate can range from less than one percent, with MOHs to as high as 10.1 percent with surgical excision.

There have been reports that recurrence rates can be much higher after the second surgery, with the recurrence rate being as high as 50 percent after the third and fourth surgeries. The highest recurrence rate is seen in the medial canthus, with recurrence shown to be as high as 60 percent.

Subtle physical changes may occur at the scar of the previous surgery, which may lead one to suspect a recurrence. It is therefore incumbent upon the physician to look at the locations of lesions as well as the type of tumor present. Any changes at the scar of a previous lesion or developing a papule or nodule in a lesion should lead one to suspect that there may be a recurrence.

NON-SURGICAL ALTERNATIVES AND PREVENTION
Given the impact of UV exposure on BCC incidence, it is important that all physicians educate their patients in prevention of BCC. Certain factors, such as sun avoidance, ionizing radiation, and the danger of tanning beds must be addressed. The use of a broad-spectrum sunscreen with reapplication every two hours should be instilled in the patient; daily use of sunscreens should be used in sunny climates. Patients should be advised to use sunglasses, they should also be told that UV radiation is most abundant from 11am – 3pm. It is also good to regularly look at the UV index in their local area.

For patients who have been diagnosed with BCC, physicians should weigh a number of factors when discussing and deciding treatment options with patients. If surgery is the preferred route, patients should be counseled on the many potential results; MOH’s resection, radiation, and surgery may have physical consequences and/or disfigurement.

In addition, it is important to instruct patients about recurrence, particularly regarding locally advanced BCC (lABCC), which is rare but nonetheless very real. Many patients who have lABCC are afraid of any “invasiveness,” e.g. surgery or procedures which may be more intrusive to the patient. These patients are often concerned with disfigurement and scarring. If other options for treatments for lABCC such as radiation and topical treatments are not options, then it is incumbent on the physician to offer the option of the oral medication vismodegib (Erivedge, Genentech), which offers these patients an alternative to the treatment of lABCC. Another option for these patients is ionizing radiation.

INDIVIDUALIZE CARE
No matter which treatment approach is decided as the most fitting for a particular patient, it is important to consider the potential risks and benefits of each therapy. Moreover, physicians should work with these patients to...
educate them on UV avoidance and address the factors that led to BCC to foster greater awareness.

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