BASAL CELL CARCINOMA- A REVIEW

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ABSTRACT

Basal cell carcinoma (BCC) is the most common form of skin cancer and the most frequently occurring form of all cancers. In the U.S. alone, an estimated 3.6 million cases are diagnosed each year. BCCs arise from abnormal, uncontrolled growth of basal cells.Because BCCs grow slowly, most are curable and cause minimal damage when caught and treated early. Understanding BCC causes, risk factors and warning signs can help you detect them early, when they are easiest to treat and cure. This article reviews on the briefing of basal cell carcinoma
KEYWORDS- basal – carcinoma-treated-signs

INTRODUCTION

Basal cell carcinoma (BCC), previously known as basal cell epithelioma, is the most common cancer in Humans. BCC mostly arises on sun-damaged skin and rarely develops on the mucous membranes or palms and soles. Basal cell carcinoma is usually a slow-growing tumor for which metastases are rare. Although rarely fatal, BCC can be highly destructive and disfigure local tissues when treatment is inadequate or delayed. On clinical examination, BCC usually appears as flesh- or pink-colored, pearly papules with overlying ulceration or telangiectatic vessels. BCC occurs on the head or neck in the majority of cases, but can involve the trunk and extremities.[1][2]. Basal cell carcinoma usually grows very slowly and often doesn't show up for many years after intense or long-term exposure to the sun. You can get it at a younger age if you're exposed to a lot of sun or use tanning beds.

EPIDEMIOLOGY

Basal-cell cancer is a very common skin cancer. It is much more common in fair-skinned individuals with a family history of basal-cell cancer and increases in incidence closer to the equator or at higher altitude. There are approximately 800,000[3] new cases yearly in the United States alone. Up to 30% of White people develop basal-cell carcinomas in their lifetime.[4] In Canada, the most common skin cancer is basal-cell carcinoma (as much as one third of all cancer diagnoses), affecting 1 in 7 individuals over a lifetime.[5]

In the United States approximately 3 out of 10 White people develop a basal-cell carcinoma during their lifetime.[56] This tumor accounts for approximately 70% of non-melanoma skin cancers. In 80 percent of all cases, basal-cell carcinoma affects the skin of head and neck.[6] Furthermore, there appears to be an increase in the incidence of basal-cell cancer of the trunk in recent years.[7]

Most sporadic BCC arises in small numbers on sun-exposed skin of people over age 50, although younger people may also be affected. The development of multiple basal-cell cancer at an early age could be indicative of nevoid basal-cell carcinoma syndrome, also known as Gorlin Syndrome.[8]

SIGNS AND SYMPTOMS

Individuals with a basal-cell carcinoma typically present with a shiny, pearly skin nodule. However, superficial basal-cell cancer can present as a red patch similar to eczema. Infiltrative or morpheaform basal-cell cancers can present as a skin thickening or scar tissue – making diagnosis difficult without using tactile sensation and a skin biopsy. It is often difficult to visually distinguish basal-cell cancer from acne scar, actinic elastosis, and recent cryodestruction inflammation.[citation needed]

PATHOPHYSIOLOGY

Basal-cell carcinomas are currently considered to have origin from the folliculo-sebaceous-apocrine germ, also known as trichoblast. The differential diagnosis with trichoblastic carcinoma, a rare malignant form of trichoblastoma, can be challenging.[9] Alternatively, one argument is that basal-cell carcinoma is trichoblastic carcinoma.[10] Overexposure to sun leads to the formation of thymine dimers, a form of DNA damage. While DNA repair removes most UV-induced damage, not all crosslinks are excised. There is, therefore, cumulative DNA damage leading to mutations. Apart from the mutagenesis, overexposure to sunlight depresses the local immune system, possibly decreasing immune surveillance for new tumor cells.

Basal-cell carcinomas can often come in association with other lesions of the skin, such as actinic keratosis, seborrheic keratosis, squamous cell carcinoma.[11] In a small proportion of cases, basal-cell carcinoma also develops as a result of basal-cell nevus syndrome, or Gorlin Syndrome, which is also characterized by keratocystic odontogenic tumors of the jaw, palmar or plantar (sole of the foot) pits, calcification of the falx cerebri (in the center line of the brain) and rib abnormalities. The cause of this syndrome is a mutation in the PTCH1 tumor suppressor gene located in chromosome 9q22.3, which inhibits the hedgehog signaling pathway. A mutation in the SMO gene, which is also on the hedgehog pathway, also causes basal-cell carcinoma.[12]

CLASSES

Basal-cell carcinoma can broadly be divided into three groups, based on the growth patterns.

- Superficial basal-cell carcinoma, formerly referred to in-situ basal-cell carcinoma, is characterized by a superficial proliferation of neoplastic basal-cells. This tumor is generally responsive to topic chemotherapy, such as imiquimod, or fluorouracil.
- Infiltrative basal-cell carcinoma, which also encompasses morpheaform and micronodular basal-cell cancer, is more difficult to treat with conservative methods, given its tendency to penetrate into deeper layers of the skin.
- Nodular basal-cell carcinoma includes most of the remaining categories of basal-cell cancer. It is not unusual to encounter heterogeneous morphologic features within the same tumor.

PREVENTION

Basal-cell carcinoma is a common skin cancer and occurs mainly in fair-skinned patients with a family history of this cancer. Sunlight is a factor in about two-thirds of these cancers; therefore, doctors recommend sunscreens with at least SPF 30. However, a Cochrane review examining the effect of solar protection (sunscreen only) in preventing the development of basal-cell carcinoma or cutaneous squamous cell carcinoma found that there was insufficient evidence to demonstrate whether sunscreen was effective for the prevention of either of these keratinocyte-derived cancers.[30] The review did ultimately state that the certainty of these results was low, so future evidence could very well alter this conclusion. One-third occur in non-sun-exposed areas; thus, the pathogenesis is more complex than UV exposure as the cause.[13]

The use of a chemotherapeutic agent such as 5-Fluorouracil or imiquimod can prevent the development of skin cancer. It is usually recommended to individuals with extensive sun damage, history of multiple skin cancers, or rudimentary forms of cancer (i.e., solar keratosis).[14] It is often repeated every 2 to 3 years to further decrease the risk of skin cancer.

TREATEMENT

- Standard surgical excision:

Surgery to remove the basal-cell carcinoma affected area and the surrounding skin is thought to be the most effective treatment.[15] A disadvantage with standard surgical excision is a reported higher recurrence rate of basal-cell cancers of the face,especially around the eyelids,nose, and facial structures.[16] There is no clear approach for treating basal-cell carcinoma around the eye.

- MOHS SURGERY

Mohs surgery (or Mohs micrographic surgery) is an outpatient procedure, which was developed by Frederic E. Mohs in the 1940s, in which the tumor is surgically excised and then immediately examined under a microscope. It is a form of pathology processing called CCPDMA. The base and edges are microscopically examined to verify sufficient margins before the surgical repair of the site. If the margins are insufficient, more is removed from the patient until the margins are sufficient. It is also used for squamous-cell carcinoma; however, the cure rate is not as high as Mohs surgery for basal-cell carcinoma. The 2008 study found Mohs surgery to be a good option for both primary and high-risk recurrent BCCs.[16]

- Electrodesiccation and curettage

Electrodesiccation and curettage (EDC, also known as curettage and cautery, simply curettage)[44] is accomplished by using a round knife, or curette, to scrape away the soft cancer. The skin is then burned with an electric current. This further softens the skin, allowing for the knife to cut more deeply with the next layer of curettage. The cycle is repeated, with a safety margin of curettage of normal skin around the visible tumor. This cycle is repeated 3 to 5 times, and the free skin margin treated is usually 4 to 6 mm. Cure rate is very much user-dependent and depends also on the size and type of tumor. Infiltrative or morpheaform BCCs can be difficult to eradicate with EDC. Generally, this method is used on cosmetically unimportant areas like the trunk (torso). Some physicians believe that it is acceptable to utilize EDC on the face of elderly patients over the age of 70. However, with increasing life expectancy, such an objective criterion cannot be supported. The cure rate can vary, depending on the aggressiveness of the EDC and the free margin treated. Some advocate curettage alone without electrodesiccation, and with the same cure rate.[17]

- CHEMOTHERAPY

Removing the residual superficial tumor with surgery alone can result in large and difficult to repair surgical defects. One often waits a month or more after surgery before starting the Imiquimod or 5-fluorouracil to make sure the surgical wound has adequately healed. Some people[who?] advocate the use of curettage (see EDC below) first, followed by chemotherapy. These experimental procedures are not standard care.[18]. Vismodegib and sonidegib are drugs approved for specially treating BCC, but are expensive and cannot be used in pregnant women.

Itracanazole, traditionally an anti-fungal medication, has also garnered recent attention for its potential use in the treatment of BCC, especially those that cannot be removed surgically. Possessing anti-Hedgehog pathway activity, there is clinical evidence that itraconazole has some efficacy either alone or when combined with vismodegib/sonidegib for primary and recurrent BCC. There is one case report of efficacy in metastatic BCC.

- PHOTODYNAMIC THERAPHY

Photodynamic therapy (PDT) is a new modality for treatment of basal-cell carcinoma, which is administrated by application of photosensitizers to the target area. When these molecules are activated by light, they become toxic, therefore destroy the target cells. Methyl aminolevulinate is approved by EU as a photosensitizer since 2001. This therapy is also used in other skin cancer types.[19] The 2008 study reported that PDT was a good treatment option for primary superficial BCCs and reasonable for primary low-risk nodular BCCs but a "relatively poor" option for high-risk lesion

CONCLUSION

Avoiding reducing your exposure to UV light is the best way to prevent BCC. Avoid direct sunlight during the brightest parts of the day and avoid using tanning beds.Apply sunscreen regularly, even if you're only going to be outside for a few minutes. Use a sunscreen with SPF 15 or higher. You can also wear lightweight clothing and hats to protect against sun exposure. The exception to this is infants. Newborns should be kept out of the sun when possible. Don't apply sunscreen to infants under six months.Early detection of BCC can reduce scarring caused by the removal of a tumor. Get a skin cancer check annually from a dermatologist or primary doctor.

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