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PERSPECTIVE OF BASAL CELL CARCINOMA : A REVIEW

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Abstract: The most common cause of Basal Cell Carcinoma (BCC) is DNA damage brought on by exposure to ultraviolet (UV) radiation from the sun or indoor tanning, which alters the basal cells of the epidermis, the skin's outermost layer and causes unchecked growth.Open sores, red patches, pink growths, shiny bumps, scars, or growths with a central indentation and/or slightly elevated, rolled edges are all possible appearances for BCCs. At times, BCCs may ooze, crust, itch or bleed. Usually, the lesions appear in parts of the body that are exposed to the sun.About half of BCCs in patients with darker skin are pigmented, which means they are tan, black, or brown in color and could be confused with a typical mole. It's crucial to remember that various people may have very varied BCCs.
Keywords: Basal cell carcinoma; Perspective; A review

1 INTRODUCTION

The most common skin cancer is basal cell carcinoma (BCC). It starts in the basal cells which are located in the deep part of the outer layer of the skin (epidermis). BCC usually grows slowly and does not spread (metastasize) to other parts of the body, but it can cause considerable destruction of surrounding tissue if not treated [1].
The majority of basal cell carcinomas are believed to be caused by prolonged exposure to ultraviolet (UV) radiation from sunlight; avoiding the sun and wearing sunscreen may help prevent basal cell carcinoma. Although it can take other forms, basal cell carcinoma typically manifests as a slightly transparent bump on the skin. It tends to develop on sun-exposed parts of the body, particularly the head and neck, but it can also occur less frequently on parts of the body that are typically shielded from the sun, like the genitalia [2].
Basal cells are microscopic cells in the outer layer of the skin (epidermis), which is the skin layer that you can see and touch on the body. These cells are responsible for making new skin cells by dividing and copying themselves. When basal cells create new cells, the older skin cells push to the surface of the epidermis, where they die and leave the body [3].

2 CLASSIFICATION OF BASAL CELL CARCINOMA

There are four main types of basal cell carcinoma (BCC), including:
Nodular: The most prevalent kind of BCC. Nodular BCC resembles a spherical pimple with telangiectasias, or visible blood vessels, around it.
Lesions of the superficial spreading type show up on the skin as tiny, shallow markings that are marginally paler than the surrounding skin. The arms, legs, and trunk (torso) can develop these lesions.
Sclerosing (morpheaform): These malignant growths resemble scars and gradually enlarge. The face is where this type is most prevalent. This kind may also appear on the skin as a tiny red dot.
Pigmented: This uncommon form of BCC results in hyperpigmentation, a condition in which a portion of the skin turns darker than the surrounding skin [4].
Anyone can get basal cell carcinoma (BCC). Those over 50 are more likely to experience it. People with fair skin and light eyes are more likely to get BCC. People who have BCC once are at higher risk for acquiring second nonmelanoma skin cancer in the future [5].
Basal cell carcinoma is indicated by a change in the skin, such as a growth or an unhealing sore.These skin abnormalities (lesions) usually exhibit one of the following characteristics:a skin-colored, glossy hump that is translucent, allowing some visibility through the surface.On white skin, the bump may seem pink or pearly white. The bump frequently appears brown or glossy black on people with brown and black skin.Although they could be hard to discern on black and brown skin, tiny blood vessels may be evident.The bump can scab over and bleed.a lesion that is brown, black, blue, or has dark patches with a translucent border that is slightly elevated.A scaly, flat patch with an elevated border.These patches have the potential to get fairly big over time.a scar-like lesion that is white and waxy and lacks a distinct border.
A DNA mutation in one of the skin's basal cells results in basal cell cancer.
At the base of the epidermis, the skin's outermost layer, are basal cells. New skin cells are produced by basal cells. Older skin cells are pushed toward the skin's surface by newly formed skin cells, where they die and slough off [6].
The DNA of a basal cell governs the process of generating new skin cells.The instructions that guide a cell are encoded in its DNA. The mutation instructs the basal cell to continue growing and multiplying quickly when it would normally perish. Over time, the aberrant cells may accumulate and develop into a malignant tumor or skin lesion.UV light,

among other things. UV radiation from sunlight, commercial tanning lamps, and tanning beds is thought to be mostly responsible for the DNA damage in basal cells. The development of skin malignancies on skin that is not typically exposed to sunlight, however, cannot be explained by sun exposure. Basal cell carcinoma can develop and be at risk due to a variety of circumstances, and in many situations, the precise reason may not be known [7].

3 RISK FACTORS

The following factors increase risk of basal cell carcinoma:
• Radiation therapy: Radiation therapy used to treat acne or other skin conditions may increase the risk of basal cell carcinoma at previous treatment sites on the skin;
• Fair skin: People who freckle or burn easily, have very light skin, red or blond hair, or light-colored eyes are more likely to develop basal cell carcinoma.
• Prolonged sun exposure: Spending a lot of time in the sun, or in commercial tanning beds, increases the risk of basal cell carcinoma. The threat is increased if you live in a sunny or high-altitude location, as these factors both expose you to more ultraviolet (UV) radiation.
• Growing older. Most cases of basal cell carcinoma occur in older persons since the disease frequently takes decades to develop. However, it is increasingly prevalent in individuals in their 20s and 30s and can also impact younger adults.
A history of skin cancer in one's family or personally. You are at a high risk of getting basal cell carcinoma again if you have had it once or more. You can be more susceptible to basal cell carcinoma if skin cancer runs in the family.
• Immunosuppressive medications. The chance of developing skin cancer is greatly increased if you take immune-suppressive treatments, such as anti-rejection medications used after transplant surgery.
• Arsenic exposure. A common and hazardous metal in the environment, arsenic raises the risk of developing basal cell carcinoma and other types of cancer. Since arsenic is a naturally occurring substance, everyone is exposed to it to some extent. However, certain people may be more exposed if they work in jobs that involve the production or use of arsenic, or if they consume tainted well water [8].

4 COMPLICATIONS

Complications of basal cell carcinoma can include. A risk of recurrence. It is typical for basal cell carcinomas to return, even after effective treatment. a higher chance of developing other forms of skin cancer. Additionally, a history of basal cell carcinoma may raise the risk of squamous cell carcinoma and other forms of skin cancer. cancer that is not limited to the skin. On rare occasions, basal cell carcinoma may metastasis, or spread, to neighboring lymph nodes and other body parts like the lungs and bones [9].

5 DIAGNOSIS

Laboratory and imaging tests are not frequently clinically recommended in individuals presenting with isolated lesions since BCC rarely spreads. When deeper structures are clinically considered to be involved, imaging tests may be required (e.g., CT for suspected bone involvement, MRI for soft-tissue or perineural [10].

6 PREVENTION

• Wear protective clothing: Cover the skin with dark, tightly woven clothing that covers the arms and legs, and a broad-brimmed hat, which offers more protection than a baseball cap or visor.
• Wear sunscreen year-round. Use a broad-spectrum sunscreen with an SPF of at least 30. Apply sunscreen liberally, and reapply it every two hours, or more frequently if you're swimming or perspiring.
• Avoid the sun during the middle of the day, as the sun's rays are strongest in many places between roughly 10 a.m. and 4 p.m. Some businesses also offer safety gear for sale. A dermatologist can suggest a suitable brand. Remember to wear sunglasses. Look for ones that block ultraviolet A (UVA) and UVB rays, the two forms of UV radiation.
Steer clear of tanning beds. UV radiation from tanning beds can raise risk of developing skin cancer.
• Regularly examine the skin and let the doctor know if anything changes. Check the skin frequently for birthmarks, freckles, lumps, and moles, as well as for new skin growths. Examine the face, neck, ears, and scalp using mirrors.
Check the tops and undersides of the hands and arms, as well as the chest and trunk. Look at the genital area, between the buttocks, and on the front and rear of the legs and feet, particularly the soles and the areas between the toes [11].

7 TREATMENT APPROACH

The National Comprehensive Cancer Network (NCCN) states that the aim of treatment for basal cell carcinoma (BCC) is to remove the tumor while preserving as much of the patient's function and appearance as possible. Therefore, the characteristics of the tumor as well as the patient's unique risk factors and preferences should be taken into consideration when making treatment decisions. [12]. Indeed, Regular skin exams and sun protection are essential for prevention and monitoring. The main treatment for Basal Cell Carcinoma (BCC) is surgical removal through excision; the best technique depends on the tumor's size, location, and recurrence risk. Common options include Mohs

micrographic surgery, curettage and electrodesiccation, cryotherapy, and in certain cases, radiation therapy or topical treatments for smaller, superficial lesions.

Surgery is the preferred course of treatment for almost all patients of BCC. [13] The size, location, and depth of the tumor all affect the surgical strategy. In an outpatient setting, dermatologists can conduct almost all of the therapeutic alternatives. In addition to the well-established and often used therapies, there are a few alternative choices (e.g., photodynamic therapy with photosensitizers)[14] In certain BCC cases, local therapy using immunomodulating and chemotherapeutic drugs is helpful. These substances may have an effect on BCCs, especially little and superficial ones.
The US Food and Drug Administration (FDA) has authorized topical 5% imiquimod for the treatment of superficial BCCs that are not facial and have a diameter of less than 2 cm. Typically, lesions are treated once a day, five days a week, for six to twelve weeks. Similarly, the FDA has approved topical fluorouracil 5% twice daily for three to six weeks to treat superficial BCC. [15] Fluorouracil is most frequently utilized for smaller superficial BCCs on the trunk and extremities, while no official limits have been established based on lesion size or location. In patients who are prone to having several BCCs, imiquimod and fluorouracil can both be applied topically for prevention or maintenance; in this case, the effectiveness of the treatment is probably dependent on the regression of subclinical tumors.
Mohs micrographic surgery should be considered and discussed with the patient for more difficult-to-treat tumors (such as infiltrative BCC, morpheaform [sclerosing] BCC, micronodular BCC, and recurrent BCC) or those where it is critical to preserve normal (noncancerous) tissue. For individuals who are not candidates for surgery, radiation therapy is the main course of treatment. In situations where the surgical margins are positive, it can also be utilized as adjuvant therapy. However, people who have inherited problems that make them more susceptible to skin cancer should not receive radiation therapy [16]
Patients with locally advanced BCC who are not candidates for radiation therapy or surgery, whose illness has returned following radiation therapy or surgery, or who have metastatic BCC may be treated with a hedgehog pathway inhibitor (HHI). [17], These substances block the transmembrane protein Smoothened (SMO), which is involved in the signal transduction of the hedgehog pathway. Treatment with itraconazole and arsenic trioxide may be beneficial for people with metastatic BCC that is resistant to HHIs. A treatment of oral itraconazole on days 6 to 28 and intravenous arsenic trioxide five days every 28 days was shown to be effective in treating three out of five men with resistant metastatic BC, according to Ally and colleagues. No tumor shrank, despite the fact that some patients had stable disease for three months. The scientists speculate that ongoing dosage might be necessary in these situations in order to completely block the hedgehog pathway and produce a clinical response. [18]
The first immunotherapy, cemiplimab (Libtayo), received full approval in 2021 for locally advanced BCC and accelerated approval for patients with metastatic BCC who had previously received an HHI or for whom an HHI is inappropriate

8 GUIDELINES AND SURGICAL TECHNIQUES

Removing the tumor while achieving the best potential cosmetic outcome is the aim of treatment for people with BCC.Surgical techniques are by far the most researched, successful, and widely utilized BCC therapies. Surgeon expertise has a major role in the success of surgical modalities; significant variations in cure rates have been noted amongst surgeons. Cryosurgery, excisional surgery, Mohs micrographically controlled surgery, and electrodesiccation and curettage are among the techniques employed.Low-risk BCC in non-hair-bearing regions should be treated with curettage and electrodessication, according to National Comprehensive Cancer Network (NCCN) guidelines. Generally, surgical excision should be carried out if fat is reached. Standard excision is an alternative if the lesion can be removed with clinical margins of 4 mm and followed by skin grafting, linear repair, or second-intention healing [19].

9 CONCLUSION

Patients with basal cell carcinoma (BCC) have an excellent prognosis, but if the disease is allowed to progress, it can cause significant morbidity. BCC is a nonmelanocytic skin cancer, or epithelial tumor, that develops from basal cells, which are small, round cells found in the lower layer of the epidermis.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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