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Clinical Images of Basal Cell Carcinoma of Occipital Region and Right Ear Lobe in an Adult Male: Common Yet Uncommon

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A 75-year-old male patient, a farmer residing in a rural area, presented to the outpatient department with primary complaints of a localised swelling over the right side of the occipital region and right earlobe posteriorly. The swelling has been present for 12 months, has gradually increased in size and is not associated with pain. The patient had no family history of similar symptoms, no history of prior surgical intervention, and no significant medical history. Upon inspection, the swelling was found to be nodulocystic, well-circumscribed, and scaly, measuring about 6×6 cm in size with warmth, blanching erythema, dilated vessels, and scabs over the surface [Table/Fig-1a]. The smaller swelling present on the right earlobe posteriorly measuring around 1×1 cm was also found to be nodulocystic [Table/Fig-1b]. There was no lymphadenopathy present over the neck.

[Table/Fig-1]: a) Nodulocystic swellings over the right occipital region of the scalp; b) Nodulocystic swellings over the right posterior aspect of the earlobe.

The diagnosis was Basal Cell Carcinoma (BCC)- rodent ulcer which was confirmed by ultrasonography-guided Fine Needle Aspiration Cytology (FNAC) reports which stated that smears showed small baseloid cells mostly in monomorphy, background showing haemorrhagic material suggesting BCC. The patient was shifted to the oncology department where 5 fluorouracil (5-FU) topical ointment [1] therapy was administered to the patient; however, a poor prognosis was observed.

BCC is the most prevalent form of skin cancer globally [2]. Many countries exclude BCC data from cancer registries because of its relatively low mortality rate. However, analysis of insurance records and official statistics in the United States estimates that BCC incidence reaches 4.3 million cases annually [3]. This epidemiological trend is anticipated to continue in the near future, driven by improved diagnosis and an increasingly ageing population with a history of Ultraviolet (UV) exposure [2-4]. The risk of developing a BCC is consequently due to a complex interplay of environmental, phenotypic, and genetic factors. BCC primarily manifests in four distinct types: nodulo-ulcerative, pigmented, morpheaform, and superficial [5]. The incidence of BCC rises significantly after the age of 40 years. However, recent trends show a growing number of cases among younger individuals, especially women, due to increased UV exposure from both sunlight and artificial sources [6]. The patched/hedgehog intracellular signalling pathway regulates cell proliferation, and its persistent activation plays a role in the development of BCC. The most common mutations involve inactivating changes in the Patched-1 gene (PTCH1) and activating changes in SMO (smoothened receptors), leading to abnormal activation of the Hedgehog pathway and subsequent tumour development [7]. Diagnosis of BCC can be done in various ways like inspection is the first process for diagnosis of BCC followed by dermoscopy with confirmation by biopsy and histopathologic examination. Histologically, BCC is characterised by the proliferation of uniform basaloid cells with hyperchromatic nuclei and minimal, poorly defined cytoplasm, along with peripheral palisading and retraction artefacts. Although basaloid cells resemble epidermal basal cells in appearance, they function more like follicular germinative cells [8,9].

The differential diagnosis of BCC includes Squamous Cell Carcinoma (SCC), malignant melanoma, psoriasis, solar keratosis, and molluscum contagiosum [10]. Nodular BCC might be mistaken for trichoblastoma or trichoepithelioma, while superficial BCC can resemble inflammatory dermatoses like psoriasis and eczema. Morphea-like BCC may be mistaken for a morphea plaque or a scar. In these situations, histopathological examination is essential for confirming the diagnosis of BCC.

Current evidence indicates that surgical approaches remain the gold standard for treating BCC, with Mohs micrographic surgery primarily reserved for high-risk lesions. For selected primary low-risk lesions, alternative treatments such as Photodynamic Therapy (PDT), cryotherapy, topical imiquimod, and 5-FU may be appropriate. Radiotherapy is a viable non-surgical option, particularly for older patients [11,12]. This procedure involves removing a thin margin of tissue circumferentially around and beneath the clinical margins of a skin tumour. Electric cauterisation and curettage are performed in lesions that are <5 cm in greatest diameter. PDT is a newer modality, in the tumour cells are first sensitised with methyl-amino levulinate and then irradiated with a light of 630 nm wavelengths [13].

Even though large-sized BCCs are extremely rare, they can still be diagnosed accurately and treated effectively with surgical procedures similar to those used to treat smaller-sized carcinomas.

REFERENCES

[1] Gross K, Kircik L, Kricorian G. 5% 5-Fluorouracil cream for the treatment of small superficial basal cell carcinoma: Efficacy, tolerability, cosmetic outcome, and patient satisfaction. Dermatol Surg. 2007;33(4):433-40. Doi: 10.1111/j.1524-4725.2007.33090.x.
[2] Rogers HW, Weinstock MA, Feldman SR, Coldiron BM. Incidence estimate of nonmelanoma skin cancer (keratinocyte carcinomas) in the US population, 2012. JAMA Dermatol. 2015;151(10):1081. Doi: 10.1001/jamadermatol.2015.1187.
[3] Skin Cancer Foundation. Skin Cancer Facts [Internet]. Available from: http://www.skincancer.org/skin-cancer-information/skin-cancer-facts. Accessed 2020 May 17.
[4] Erkouteren JAC, Ramdas KHR, Wakkee M, Nijsten T. Epidemiology of basal cell carcinoma: Scholarly review. Br J Dermatol. 2017;177(2):359-72. Doi: 10.1111/bjd.15321.

[5] Palit A, Sushruth PR, Adya KA, Janagond AB, Deshmukh NS, Inamadar AC. Retrospective analysis of demographic, clinical, and histopathological parameters in patients with basal cell carcinoma. Clin Dermatol Rev. 2019;3(2):130-35. Doi: 10.4103/CDR.CDR_3_19.
[6] Christenson LJ. Incidence of basal cell and squamous cell carcinomas in a population younger than 40 years. JAMA. 2005;294(6):681. Doi: 10.1001/jama.294.6.681.
[7] Tang JY, So PL, Epstein EH Jr. Novel Hedgehog pathway targets against basal cell carcinoma. Toxicol Appl Pharmacol. 2007;224(3):257-64. Available from: https://doi.org/10.1016/j.taap.2006.12.011.
[8] Tanese K, Fukuma M, Yamada T, Mori T, Yoshikawa T, Watanabe W, et al. G-protein-coupled receptor GPR49 is up-regulated in basal cell carcinoma and promotes cell proliferation and tumour formation. Am J Pathol. 2008;173(3):835-43. Doi: 10.2353/ajpath.2008.080226.
[9] Sellheyer K, Krahl D. Basal cell (trichoblastic) carcinoma: Common expression pattern for epithelial cell adhesion molecule links basal cell carcinoma to early follicular embryogenesis, secondary hair germ, and outer root sheath of the vellus hair follicle: A clue to the adnex. J Am Acad Dermatol. 2008;58(2):158-67. Doi: 10.1016/j.jaad.2007.07.047.
[10] Lear JT, Smith AG. Basal cell carcinoma. Postgrad Med J. 1997;73(863):538-42. Available from: https://doi.org/10.1136/pgmj.73.863.538.
[11] Clark CM, Furniss M, Mackay-Wiggan JM. Basal cell carcinoma: An evidence-based treatment update. Am J Clin Dermatol. 2014;15(3):197-216. Doi: 10.1007/s40257-014-0070-7.
[12] Connolly SM, Baker DR, Coldiron BM, Fazio MJ, Storrs PA, Vidimos AT, et al. AAD/ACMS/ASDSA/ASMS 2012 appropriate use criteria for Mohs micrographic surgery: A report of the American Academy of Dermatology, American College of Mohs Surgery, American Society for Dermatologic Surgery Association, and the American Society for Mohs Surgery. J Am Acad Dermatol. 2012;67:531-50. Doi: 10.1016/j.jaad.2012.06.009.
[13] Dourmishev LA, Rusinova D, Botev I. Clinical variants, stages, and management of basal cell carcinoma. Indian Dermatol Online J. 2013;4(1):12-17. Doi: 10.4103/2229-5178.105456.

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