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IP Archives of Cytology and Histopathology Research

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Case Report

Pigmented squamous cell carcinoma of pinna: A rare case report

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ARTICLE INFO

Article history:
Received 18-01-2022
Accepted 28-01-2022
Available online 04-03-2022

Keywords:
Squamous cell carcinoma
pigmented
pinna

ABSTRACT

Pigmented squamous cell carcinoma is one of the rare variants of squamous cell carcinoma accounting for 0.01 to 7% of all squamous cell carcinomas. We report a case of pigmented SCC over right pinna in a 45-year-old Indian male presenting with a brownish ulcero-fungating growth which on histopathological examination revealed atypical squamous cells with intracytoplasmic melanin pigment and interspersed basal and suprabasal melanocytes and a final diagnosis of pigmented squamous cell carcinoma was made. Ruling out the differential diagnosis is essential for both the clinical and pathologist for an accurate diagnosis and early management of the patient.

1. Introduction

Squamous cell carcinoma (SCC) is the most common malignant neoplasm of the oral cavity and oropharynx, its occurrence over pinna is almost exclusively limited to the elderly Caucasian population with a male preponderance.[1] Alcohol and tobacco intake, ultraviolet radiation are common risk factors.[2] Clinically they present in varied morphology as ulcero-proliferative or verrucous growths, brown whitish lesions, whitish plaques, ulcers with indurated raised margins or exophytic growth[2] Cutaneous invasive pigmented squamous cell carcinoma (SCC) is rare with limited cases reported to date and limited literature.[3] Pigmented squamous cell carcinoma can be confused with various cutaneous lesions like pigmented basal cell carcinomas and melanoma, especially melanomas which shows pseudoepitheliomatous hyperplasia.[3,4] Squamous cell carcinoma (SCC) accounts for the majority of Non-melanoma squamous cell-related metastases and death. Though most of the squamous cell carcinoma have an indolent behaviour with a low malignant potential, a wide variety of subtypes of Squamous cell carcinoma including pigmented squamous cell carcinoma exhibit aggressive behaviour, thus differentiating the high-risk variants from its other subtypes clinically as well as histopathologically is of utmost importance for a rapid therapeutic intervention thus reducing the likelihood of metastasis and death.[5]

2. Case Report

We report a 45-year-old Indian male who presented with discharge, difficulty in hearing with progressive loss of hearing along with earache from the last one and a half years. A brownish ulcero-fungating growth was seen located on the posterior side of the right pinna. There were no associated palpable cervical lymph nodes.A clinical diagnosis of squamous cell carcinoma was made and wide local excision was done of the tumour including the pinna. The resected specimen was sent to the Department of Pathology, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. On gross examination (Figure 1), right pinna with attached tumour was noted. Tumour was located on the posterior aspect of the right pinna. Ear pinna measured

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https://doi.org/10.18231/j.achr.2022.013

6.5x3.5cm. Tumour measured 8x1.7x1.5 cm. Tumour was seen at a distance of 0.5cm from the anterior margin, 1 cm from the posterior skin margin, 0.5cm from the superior and 2cm from the inferior margin. These sections were given from the tumour along with all the margins (anterior, posterior, superior, inferior).Microscopic examination showed sheets and nests of atypical squamous cells were seen showing pleomorphism, increased nuclear-cytoplasmic ratio, vesicular chromatin with abundant eosinophilic cytoplasm with a moderate amount of keratinisation (Figure 2). Several basal and suprabasal melanocytes were interspersed throughout the lesion. These exhibited large, richly dendritic cytoplasm, full of melanin granules and small nuclei, without atypia. The melanocytes were distributed uniformly and did not extend to the neighbouring epithelium (Figure 3). Tumour margins (Anterior, posterior, superior, inferior) were all free from the tumour. The invasion was seen till the reticular dermis (Anatomic level IV). No lymphovascular and neurovascular invasion was seen. No lymph node was involved. Pathological stage pT2NxMx was given with the final impression of Moderatory differentiated Pigmented Squamous cell Carcinoma. Immunohistochemical staining for P63 and CK5/6 was advised for confirmation.

Fig. 1: Gross specimen showing whitish brow nulcero-proliferative growth and partially skin covered lesion

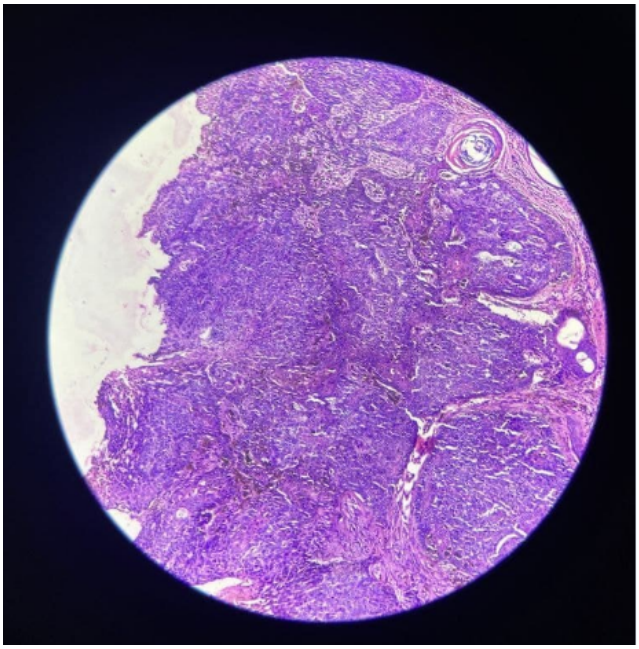

Fig. 2: Sheets and lobules of atypical squamous cell with areas of pigmentation and keratin pearl formation (H and E X10)

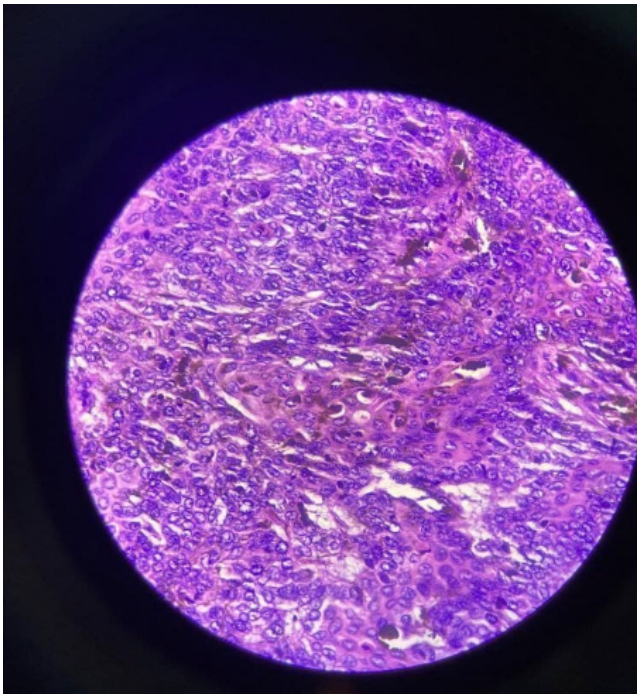

Fig. 3: Nests and Sheet of atypical squamous cells showing intracytoplasmic pigmentation and moderate differentiation (H and E X40)

3. Discussion

Pigmented SCC has only dendritic melanocytes with abundant melanin within the cytoplasm of squamous cells and accounts for only 0.01% to 7% of cutaneous and non-cutaneous pigmented SCCs.[6] Squamous cell carcinoma as a whole has a higher incidence in males than the female population, similarly Pigmented squamous cell carcinoma is found to have a frequent occurrence in males as compared to females.[7] In our case also the patient was male, as long hair in females are protective in case of a pigmented squamous cell carcinoma of the pinna. Malignancy involving pinna is reported to be 6% of total skin cancers. Basal cell carcinoma is considered the most common neoplasm involving the pinna by some authors, though Blake and Wilson J reported a higher incidence of squamous cell carcinoma at the same site.[8]

The mechanisms of pigmentation in Pigmented Squamous cell carcinoma is still unclear. Some studies showed that stimulation of melanocytes by several cytokines and growth factors produced from tumour cells is required for colonizing melanocytes.[9] This was supported by a report by Satomura et al, which studied a prominent expression of stem cell factor and endothelin-1 in the neoplastic squamous cells play an important role in the activation of melanocytes.[10] There are various differential diagnosis of Pigmented SCC that should be taken into consideration including the Pigmented seborrheic keratosis (PSK) which shows the same characteristics of seborrheic keratosis, but the melanin pigment content is more in keratinocytes.[11] Another differential to be considered is the Pigmented pilomatricoma which is a benign dermal or subcutaneous tumour derived from the hair matrix and shows clusters of basaloid cells with eosinophilic material containing shadow cells in the centre, along with focal areas of calcification and ossification. The pigmented variant is characterized by the presence of pigmented dendritic melanocytes within the neoplastic cells, and melanin pigment within the basaloid cells and shadow cells.[12]

Pigmented actinic keratosis is another differential that shows increased melanin in the basal keratinocytes and melanocytes, with melanophages in the papillary dermis.[13]

Pigmented Bowen's disease comes next in the list which is squamous cell carcinoma in situ. The pigmented form is characterized by full-thickness keratinocyte atypia with the retention of melanin pigment in the cytoplasm of atypical keratinocytes along with an increased number of dendritic melanocytes without atypia.[14]

Pigmented basal cell carcinoma is also an important entity that needs to be kept in mind. Pigmentation has been usually observed in superficial and nodular variants and show colonisation of tumour clusters with melanocytes and numerous stromal melanophages.[15] The biological behaviour of Pigmented SCC has not yet been well defined due to a low number of reported cases. Some authors reported the prognosis of Pigmented SCC similar to that of SCC while Mikami et al reported a better prognosis for PSCC than for conventional SCC.[16]

The rationale of reporting this case was to highlight the importance of accurate and early diagnosis by both the clinicians and the pathologists, in ruling out the differential diagnosis as it determines the overall prognosis and treatment, taking into consideration differentials like melanoma which has a worse prognosis as compared to the pigmented SCC.

4. Conflict of Interest

The authors declare that there is no conflict of interest.

5. Source of Funding

None.

References

1. Clark DP, Hanke CW. Neoplasms of the conchal bowl: treatment with Mohs micrographic surgery. *J Dermatol Surg Oncol*. 1988;14(11):1223–8.
2. El-Naggar AK, Chan JKC, Grandis JR, Takata T, Slootweg PJ. WHO Classification of Head and Neck Tumours (IARC WHO Classification of Tumours), 4th Edn. Lyon, France: IARC Press; 2017.
3. Rosendahl C, Cameron A, Bulinska A, Weedon D. Cutaneous pigmented invasive squamous cell carcinoma: a case report with dermatoscopy and histology. *Dermatol Pract Concept*. 2011;1(1):69–72.
4. Chapman MS, Quitadamo MJ, Perry AE. Pigmented squamous cell carcinoma. *J Cutan Pathol*. 2000;27(2):93–5. doi:10.1034/j.1600-0560.2000.027002093.x.
5. Yanofsky VR, Mercer SE, Phelps RG. Histopathological variants of cutaneous squamous cell carcinoma: a review. *J Skin Cancer*. 2011;13:210813. doi:10.1155/2011/210813.
6. Satter EK. Pigmented squamous cell carcinoma. *Am J Dermatopathol*. 2007;29(5):486–9.
7. Soares AB, Araújo VCD, Passador-Santos F, Thomaz LA, de Freitas AS, Mautoni MC, et al. Uncommon Pigmented Carcinoma In Situ: Case Report and Brief Review. *Clin Pathol*. 2021;14. doi:10.1177/2632010X211009819.
8. Blake GB, Wilson JSP. Malignant tumours of the ear and their treatment: I. Tumours of the auricle. *Br J Plast Surg*. 1974;27(1):67–76.
9. Ishida M, Iwai M, Yoshida K, Kagotani A, Okabe H. Subungual pigmented squamous cell carcinoma presenting as longitudinal melanonychia: a case report with review of the literature. *Int J Clin Exp Pathol*. 2014;7(2):844–7.
10. Satomura K, Tokuyama R, Yamasaki Y, Yuasa T, Tatehara S. Possible involvement of stem cell factor and endothelin-1 in the emergence of pigmented squamous cell carcinoma in oral mucosa. *J Oral Pathol Med*. 2007;36(10):621–4. doi:10.1111/j.1600-0714.2007.00587.x.
11. Kossard S, Epstein EH, Cerio R, Yu LL, Leboit PEWD, Burg G, et al. Pathology and genetics: classification of tumours. Geneva: WHO; 2006. Keratinocytic tumours; 2006. p. 42.
12. Ishida M, Okabe H. Pigmented pilomatricoma: an underrecognized variant. *Int J Clin Exp Pathol*. 2013;6(9):1890–3.
13. Morgan MB, Lima-Maribona J, Miller RA, Kilpatrick T, Tannenbaum M. Pigmented squamous cell carcinoma of the skin: morphologic and immunohistochemical study of five cases. *J Cutan Pathol*. 2000;27(8):381–6. doi:10.1034/j.1600-0560.2000.027008381.x.
14. Fraga-Braghiroli N, Stephens A, Oliviero M, Rabinovitz H, Scope A. Small brown circles: an important diagnostic clue for pigmented squamous cell carcinoma. *J Am Acad Dermatol*. 2013;69(4):161–3.

15. Kossard S, Epstein EH, Cerio R, Yu LL, Leboit PEWD, Burg G, et al. Pathology and genetics: classification of tumours. Geneva: WHO; 2006. Keratinocytic tumours; 2006. p. 19.
16. Mikami T, Furuya I, Kumagai A, Furuuchi H, Hoshi H, Iijima S, et al. Pigmented squamous cell carcinoma of oral mucosa: clinicopathologic study of 3 cases. *J Oral Maxillofac Surg*. 2012;70(5):1232–9.

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Cite this article: Afrose R, Ahmed S, Shams A. Pigmented squamous cell carcinoma of pinna: A rare case report. *IP Arch Cytol Histopathology Res* 2022;7(1):67-70.