Bulletin of Environment, Pharmacology and Life Sciences
Bull. Env. Pharmacol. Life Sci., Special Issue [1]2022 : 1034-1037
©2021 Academy for Environment and Life Sciences, India
Online ISSN 2277-1808
Journal's URL:http://www.bepls.com
CODEN: BEPLAD

ORIGINAL ARTICLE **OPEN ACCESS**

A Rare case of Pigmented Trichoblastoma mimicking Basal cell carcinoma – Case report

Thamilselvi Ramachandran*, Anbu Lenin Kulandaivel, Roopmala Murugan
Faculty of Department of Pathology, Vinayaka Mission's Kirupananda Variyar Medical College and Hospital, Salem, Tamilnadu, India
Email: drselvipathology@gmail.com

ABSTRACT
Trichoblastoma is a rare benign trichogenic tumour with epithelial and mesenchymal components recapitulating the germinal hair bulb and associated mesenchyme. The clinical and histological findings may often be confused with basal cell carcinoma, a malignant epidermal skin tumour.We report here a case of 52 year old female who presented with a scalp swelling of one year duration. This was slowly and progressively increasing in size over past one year. On examination, the swelling was oval, well circumscribed, with a firm consistency. No other masses or lymph nodes were palpable. The mass was excised completely and sent for histopathological examination, which showed nodular collection of basaloid cells. There is a need for differentiation of this tumor which is benign, from other pigmented tumors having basaloid arrangement ofcells such as basal cell carcinoma. The histological examination was in favor of trichoblastoma. After 24 months of follow up, no recurrence was observed.
Key words: *Trichogenic tumors, Pigmented trichoblastoma, Pigmented epithelial tumors, Melanotrichoblastoma*

Received 12.02.2022 Revised 27.03.2022 Accepted 11.04.2022

INTRODUCTION

Trichoblastoma is a rare, benign, slow-growing tumor showing differentiation toward the primitive hair follicle. It presents clinically as a slowly growing, solitary, well-circumscribed nodule, located predominantly in the head and neck with special predilection for the scalp. Headington described Trichoblastoma in 1970 as a follicular differentiated neoplasm. In 1993, Ackerman *et al*. further described trichoblastoma to include all follicular germinative cell-derived benign cutaneous tumors .This case is presented for its rarity and to review its current literature of its clinical presentation and differentiation from close mimics.[1,2]

CASE DETAILS

A 52 year old Female presented with a scalp swelling of one year duration. This was a slow growing tumor with progressive increase in size over past one year. On examination, the swelling was ovoid, well circumscribed, with a firm consistency. No other masses or lymph nodes were palpable in the cervical region. The mass was excised completely and sent for histopathological examination.

MORPHOLOGY

Gross Examination: Received single skin covered soft tissue mass measuring 2 x 1 x 1cm. External surface had an elevated skin covered area measuring1x 0.5cm. Cut section revealed a grey white lesion arising beneath the skin measuring 0.9 x 0.5cm.

Microscopy: Sections studied showed skin with epidermis and dermis. The superficial dermis showed a well circumscribed, symmetric lesion with no attachment to epidermis. Basaloid epithelial cells were arranged in nodular architecture and in nests with peripheral palisading and also noted were the presence of cystic spaces containing brown pigment. Focal pigmentation was also noted in the basal cells and stroma.

FIG: 1

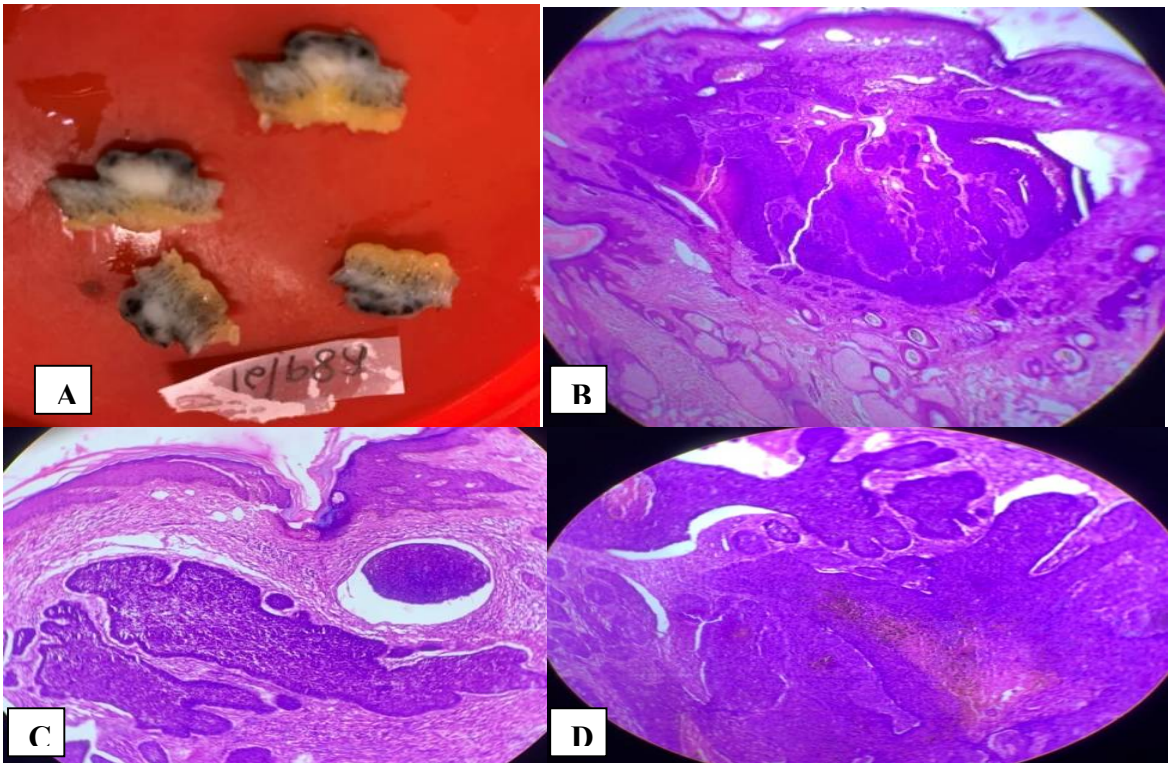

FIG: 1

- **A.** Grey black, grey white lesion elevating the overlying skin
- **B.** A well circumscribed lesion in the superficial dermis with no connection with the epidermis
- **C.** Basaloid epithelial cells in nodules and nests with peripheral palisading
- **D.** Brown pigmentation in the stroma

Immunohistochemistry

Immunohistochemical findings were consistent with that of Trichoblastoma based on the findings in Fig:2

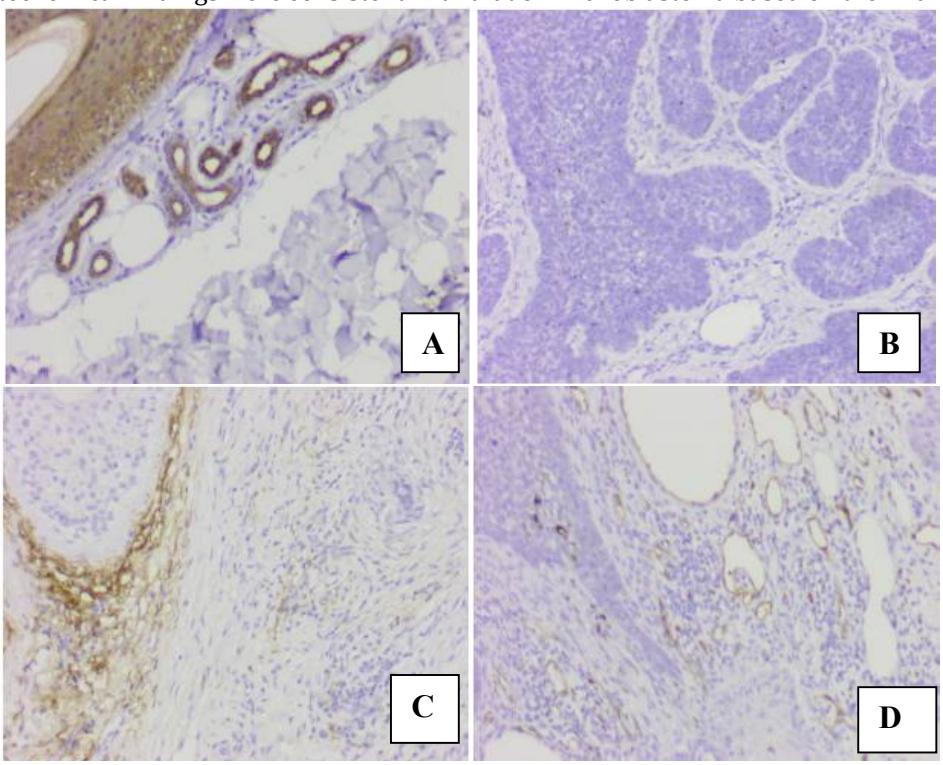

FIG: 2: . A. CK 20 – Scattered positivity, **B**- BCL – 2 - Negative, **C**- CD10 – Focal positivity, **D**-CD34 – Scattered positivity

DISCUSSION

Trichoblastomas are skin lesions that arise from the developing hair follicle.[3] The follicular germ cells proliferate by a combination of epithelial and mesenchymal elements of varying proportion. [4]Based on the preponderance of the epithelial and mesenchymal elements, these tumors fall in various areas of the spectrum such as trichoblastoma, trichogenic trichoblastoma, trichogenic myxoma and trichofibroma.[5]
Rare variant of trichoblastoma include, clear cell trichoblastoma, pigmented trichoblastoma and adamantinoid trichoblastoma. Melanotrichoma which is a variant of pigmented trichoblastoma is characterized by dendritic melanocytic cells colonization.[6] As melanotrichoma is a rarely encountered tumor, its molecular basis is not completely understood.[7]
Trichoblastomas should be clinically and histologically differentiated from trichoepithelioma and basal cell carcinoma.[8] Trichoblastomas differ from trichoepithelioma by the size, location and absence of keratinizing cyst. The size of the trichoblastoma reaches up to 1 cm whereas the size of the trichepithelioma ranges between 0.2mm to 0.8mm. Trichoblastomas commonly occur on the scalp while trichoepitheliomas commonly occur on the nasolabial folds. Microscopically trichoblastomas are usually characterized by lack of keratinizing cysts that are commonly found in trichoepithelioma.Trichoblastoma differs from basal cell carcinoma by the presence of circumscription, symmetricity and smooth borders with shelling out of normal tissue in the former. Trichoblastoma also lacks the features of basal cell carcinoma such as connection with the epidermis, clefting between Tumor Island and stroma, stromal edema and lymphocytic infiltration.[4]
Trichoblastomas express CK7 in contrast to trichoepithelioma. Other immunohistochemical markers that help differentiate these entities from one another are expression of androgen receptors only in basal cell carcinoma whereas trichoblastoma and trichoepithelioma do not express it.Merkel cells are quite common in trichoblastoma.[6]CK 20 is a marker for Merkel cells and were used in some studies to differentiate trichoblastoma from basal cell carcinoma.[9]Bcl – 2 is an anti-apoptotic oncoprotein which is overexpressed in basal cell carcinoma, it's negativity in our case rules out the entity.[10]CD10 is usually expressed in the stroma of trichoepithelioma whereas, it's expression is found in the basaloid cells in basal cell carcinoma. Expression of CD34 is found in the immediate stroma of trichoepithelioma and in the surrounding stroma of basal cell carcinoma.[11]
Familial or genetic conditions associated with trichoblastoma are, Curry Jones syndrome and Brooke Spiegler's syndrome. Curry Jones syndrome, is caused by somatic mosaic mutation in the SMOH gene on chromosome 7q32.[12] The syndrome is characterized by cutaneous streaky hypopigmentation, hyperpigmented linear atrophic lines on the soles, multiple trichoblastomas and musculoskeletal, ocular, and gastrointestinal defects.[13] Brooke Spiegler's syndrome also known as familial autosomal dominant cylindromatosis is a rare disorder characterized by various adnexal tumors including cylindromas, trichoepitheliomas, spiradenomas, trichoblastomas, basal-cell carcinomas, follicular cysts, and organoid nevi.[14]Phacomatosis pigmentokeratotica is a rare syndrome caused by mutation of HRAS G123R gene is also associated with pigmented trichoblastoma.[15]However, our patient in this case study has been ruled out of the familial and genetic syndromes based on her history of family members not having such lesions and also our patient presented with a solitary lesion.

CONCLUSION

This case study here is intended to strengthen the reader's knowledge on trichoblastoma and inspite of its rarity, its importance to be distinguished from basal cell carcinoma and for the follow up and treatment of the patient. Also to keep in mind the associated familial and genetic conditions that can occur as the background of trichoblastoma.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

REFERENCES

1. Kamat G, Yelikar B, Shettar S, Karigoudar MH. (2009). Pigmented trichoblastoma with sebaceous hyperplasia. Indian J Dermatol Venereol Leprol;75: Pg. No – 506-8.
2. Aloi F, Tomasini C, Pippione M. (1992). Pigmented trichoblastoma. Am J Dermatopathol ;14: Pg. No – 345-9.
3. Headington JT. (1976). Tumors of the hair follicle: a review. Am J Pathol;85: Pg. No – 480-503.
4. Elder David E, Elenitsas Rosalie, Johnson Bernett L., Murphy George F. (2005). Lever's Histopathology of the Skin, 9th Edition, Lippincott Williams & Wilkins. Philadelphia, Pennsylvania; Pg. No – 876 – 877
5. Mia Demant, Iselin Saltvig, Hannah Trøstrup, Volker J. Schmidt, Jørgen Hesselfeldt. (2020). Don't Judge a Tumor by Its Biopsy! Case Rep Dermatol. DOI: 10.1159/000509764 Published online: December 2, 12:266–274
6. David Weedon. Skin Pathology. (2010). Tumors of cutaneous appendages. 3rd edition. Elsevier. Australia: 762 – 763.

7. Bouatay R, Soua Y, Jellali S, Moussa, Koubaa J (2019) Melanotrichoblastoma of Nose: A Case Report. J Otolaryng Head Neck Surg 5: 031
8. Erin E. Quist, MD; Dominick J. DiMaio, MD. (2017). Melanotrichoblastoma: A Rare Pigmented Variant of Trichoblastoma. Cutis. 100:243-246
9. Maria Elisa Vega Memije, Eduwiges Martínez Luna, Oslei Paes de Almeida, Adalberto Mosqueda Taylor, and Juan Carlos Cuevas González. (2014). Immunohistochemistry Panel for Differential Diagnosis of BasalCell Carcinoma and Trichoblastoma. Int J Trichology. 6(2): 40–44.
10. Z Zheng, Y Kye, Xianglan Zhang, Aeree Kim, Insun Kim. (2005). Expression of p63, bcl-2, bcl-6 and p16 in Basal Cell Carcinoma and Squamous Cell Carcinoma of the Skin.The Korean Journal of Pathology 2005; 39: 91-8.
11. Mohebat h. Gouda, M.D; Ghada A. Abd el-Fattah, M.D. and Adel Z. el-Saediy, M.D. (2014). Value of CD34 and CD10 Immunostaining in the Differentiation between Basal Cell Carcinoma and Trichoepithelioma. Med. J. Cairo Univ., Vol. 82, No. 2, 71-76.
12. Kristen Wigby,Stephen R. F. Twigg,Ryan Broderick,Katherine P. Davenport,Andrew O. M. Wilkie,Stephen W. Bickler,Marilyn C. Jones. (2017). Gastrointestinal disorders in Curry–Jones syndrome: Clinical and molecular insights from an affected newborn. American Journal of Medical Genetics.Volume173, Issue6, Pages 1586-1592.
13. William D. James, Timothy G. Berger, Dirk M. Elston. (2011). Andrew's Diseases of the skin Clinical Dermatology. 11th edition. Epidermal nevi, neoplasm and cysts. Elsevier. USA: 662 – 663.
14. Kajal Manchanda, Manish Bansal, Aakash Amar Bhayana, and SS Pandey. (2012). Brooke-Spiegler Syndrome: A Rare Entity. Int J Trichology. 4(1): 29–31.
15. C Sathyaki, MohammedRiyas, MereenSusanRoy, R Jyothi Swarup, Nibha Raghu. (2017). Journal of Clinical and Diagnostic Research. Vol-11(7): MD09-MD10.

CITATION OF THIS ARTICLE

T Ramachandran, A L Kulandaivel, R Murugan. A Rare case of Pigmented Trichoblastoma mimicking Basal cell carcinoma – Case report. Bull. Env.Pharmacol. Life Sci., Spl Issue [1] 2022 : 1034-1037