

## Trichoblastoma or Basal Cell Carcinoma: A Case Report with Literature Review Highlighting the Differences

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### Abstract

Trichoblastoma is a rare benign adnexal tumor with follicular differentiation, predominantly comprising of basaloid cells and hence needs distinction from the basal cell carcinoma which is aggressive. We report a case of trichoblastoma of the nose in a 65 year old patient and discuss the morphological differences between the two tumors.

**Keywords:** Trichoblastoma; Basal Cell Carcinoma; Differences.

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### Introduction

Trichoblastoma is a skin adnexal tumors exhibiting follicular differentiation, first described by Headington in 1976. It is benign tumor with unifying histology that is predominantly composed of basaloid cells (follicular germinative cells) [1]. This tumor needs to be differentiated from the more common, locally aggressive malignant tumor of skin i.e., basal cell carcinoma (BCC) [2]. The histology of trichoblastoma overlaps with that of BCC. Though these tumors share a common origin from primitive germinative hair follicle related pluripotent stem cells, the two entities are at the extreme end of the biologic spectrum. Hence distinction is important for proper patient care. We report a rare case of trichoblastoma occurring in a 65 year old male patient with emphasis on the differential diagnosis.

### Case Report

A 65 years old male patient presented with history

of solitary swelling over the nose of six months duration. There was no history of pain in the swelling, fever or rapid increase in size. On examination, the swelling was 2x2cms, firm, and mobile, non tender. Skin above the swelling was normal. There was no regional lymphadenopathy. Clinically a provisional diagnosis of soft tissue tumor was made. The swelling was excised and specimen sent for histopathology examination.

#### Gross

Specimen consisted of skin covered soft tissue mass, measuring 2x2cm. Cut surface was well circumscribed, solid uniform and grey white.

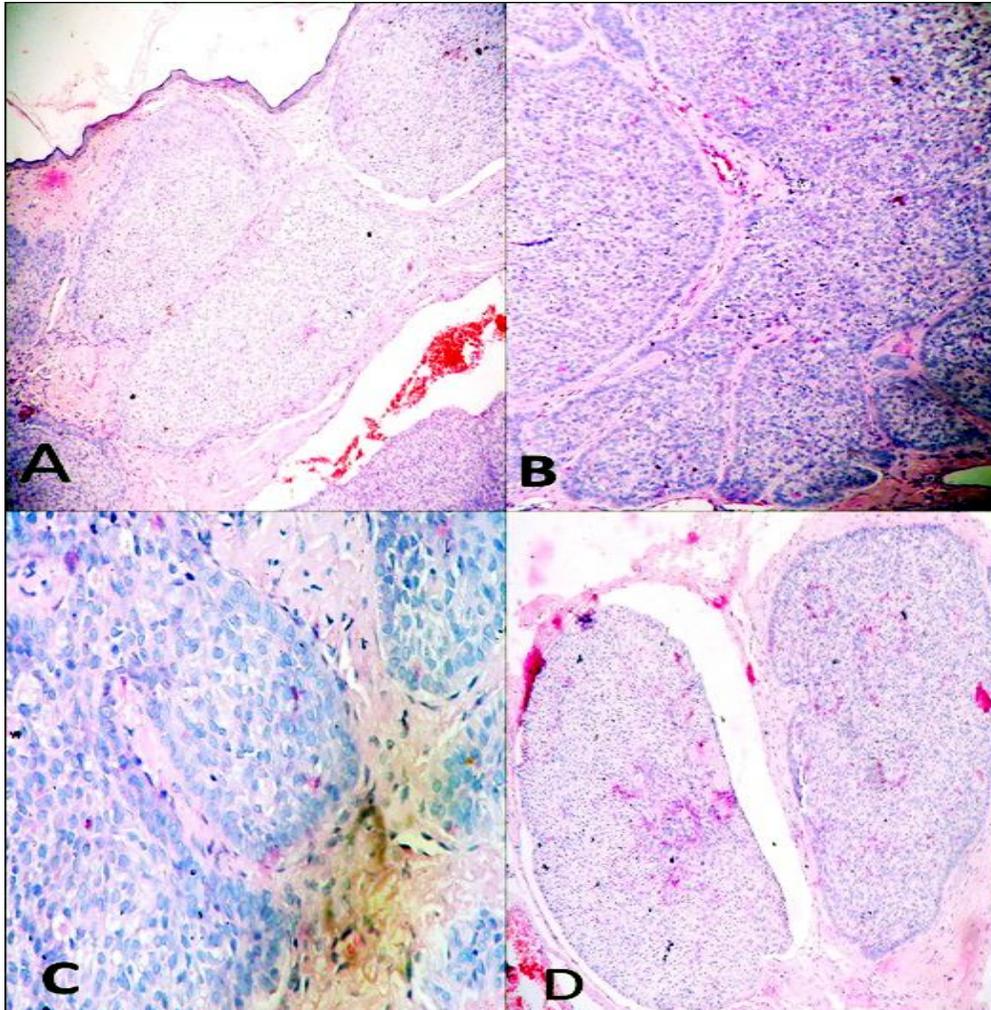
#### Microscopy

Multiple sections studied showed epidermis which was atrophic. Dermis showed tumor cells arranged in islands with peripheral palisading. At places lace like and adenoid pattern was noted. Tumor cells in the islands were uniform, round to oval with moderate amount of eosinophilic to clear cytoplasm. There was no evidence of keratinization/ atypia /mitosis. Focally retraction artifact was noted around the tumor cells. Diligent search of the entire tissue did not reveal any foci of basal cell carcinoma or any other tumor. Hence a final diagnosis of trichoblastoma was made (Fig. 1 and 2).

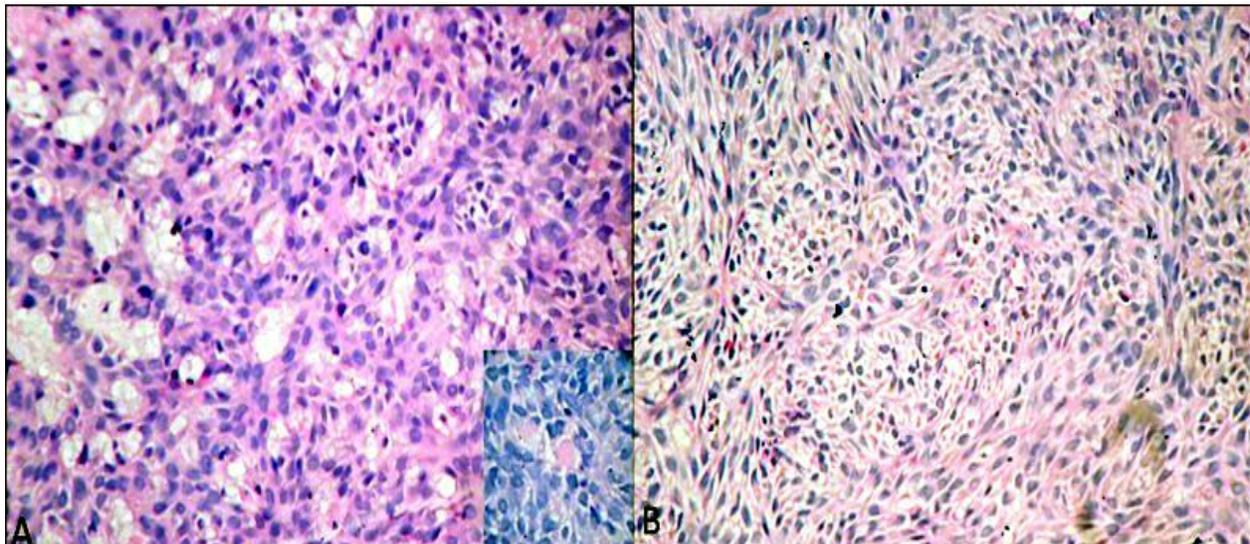
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**Fig. 1:** **A:** Section shows atrophic epidermis with a sub epithelial tumor with tumor cells in islands. (Hematoxylin and Eosin,  $\times 40$ ) **B and C:** Section shows peripheral palisading around the tumor islands under scanner and low power respectively (Hematoxylin and Eosin,  $\times 40$ ; Hematoxylin and Eosin,  $\times 100$ ) **D:** Section shows two islands, one with retraction artifact/cleft (left side) and one without it (right). Hematoxylin and Eosin,  $\times 40$ )



**Fig. 2:** **A:** Section depicts adenoid pattern. (Hematoxylin and Eosin,  $\times 40$ ) Inset shows tubular lumina formation. (Hematoxylin and Eosin,  $\times 400$ ) **B:** Section shows cytoplasmic clearing. (Hematoxylin and Eosin,  $\times 100$ )

**Discussion**

Trichoblastoma is a rare benign adnexal tumor of skin with hair follicular differentiation. It occurs in elderly population and positioned primarily in the head and neck region. However trunk, proximal extremities, genital areas and vary rarely distal extremities are affected [3]. Biologically, a slow growing tumor, clinically it presents as a small nodule or a papule in the skin measuring not more than 30mm and occupies deeper part of the skin [4]. At histopathology, the diagnosis is dependent on the demonstration of basaloid cells. Trichoblastoma needs to be differentiated from the locally aggressive and commoner malignant tumor of skin i.e., basal cell

carcinoma and trichoepithelioma. Both tumors exhibit basaloid differentiation. Basaloid cells in lobular, peripheral palisading, stromal condensation and brisk mitotic activity are features common to both trichoblastoma and basal cell carcinoma [5]. However presence of artifactual clefts is seen mainly in basal cell carcinoma.

Similarly cytoplasmic clearing and papillary mesenchymal bodies are representative of hair follicle derivation is seen in trichoblastoma and not in basal cell carcinoma as was in our case, while necrosis and jagged silhouette is seen in BCC. Stroma in BCC is hypocellular and mucinous while in trichoblastoma, the stroma is fibroblastic Table 1. Trichoepithelioma usually grows to a larger size and shows horn cyst formation [6].

**Table 1:** Differences between trichoblastoma and basal cell carcinoma

| Magnification               | Pathologic Features         | Trichoblastoma     | Basal cell carcinoma |
|-----------------------------|-----------------------------|--------------------|----------------------|
| <b>Lower magnification</b>  | Silhouette                  | Regular            | Jagged               |
|                             | Islands and nests           | Present            | Present              |
|                             | Palisading                  | Present            | Present              |
|                             | Retraction artifacts/Clefts | Occasional         | Present              |
| <b>Medium magnification</b> | Mucinous Stroma             | Absent             | Present              |
|                             | Fibrotic Stroma             | Present            | absent               |
|                             | Stromal Cellularity         | Rich               | poor                 |
|                             | Papillary mesenchymal body  | Present            | Absent               |
| <b>Higher magnification</b> | Necrosis                    | Absent             | Present              |
|                             | Cytoplasm                   | Clear              | Scanty to absent     |
|                             | Nucleus                     | Fine chromatin     | Hyperchromatic       |
|                             | Mitosis                     | Occasionally brisk | Present              |

Trichoblastoma may coexist with other tumors like nevus sebaceous, syringocystadenoma papilliferum and even basal cell carcinoma. Hiroko Shimizu et al reported multiple trichoblastoma consisting with basal cell carcinoma in a 70 year old male. Based on the findings of immunohistochemical analysis the author had proposal that both these tumors were closely related and each tumor occurred by conversion of the another and that the finding was not just incidental [7].

Misago N et al reviewed 11cases of trichoblastoma of which to (18.11%) demonstrated basal cell carcinoma like foci. These foci were noticed in an area outside the fibrous stroma and at the periphery. These findings demands complete surgical excision of all suspected trichoblastoma by the clinician. Also there should be a strong drive for the pathologist to completely examine the entire trichoblastoma specimen to rule out a coexisting basal cell carcinoma [8]. Very rarely trichoblastoma has been reported to coexist with other adnexal tumors like trichoepithelioma, sebaceous tumors,

syringocystadenoma papilliferum, all occurring in one patient [9].

Trichoblastoma and basal cell carcinoma arises from the same pluripotent germinative follicular cells and are closely related tumors [6]. Some have even advocated the use of trichoblastic carcinoma for Basal cell carcinoma in the context of its association to trichoblastoma.

However, trichoblastic carcinoma arising from a preexisting trichoblastoma do exists and they stand to have high metastatic potential [10].

**Conclusion**

Trichoblastoma is a rare skin tumor which needs to be differentiated from basal cell carcinoma in view of its similarity and coexistence. Awareness of this entity is important for both clinicians and pathologists for proper patient care.

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