Collision Tumor between Trichofolliculoma and Melanocytic Nevus

Christel Bolte, Roberto Cullen, Ivo Sazunic
Departments of Dermatology and Pathology, Clínica Las Condes, Santiago, Chile

ABSTRACT

Trichofolliculoma (TF) is a hamartomatous hair follicle-related tumor, clinically described as a dome-shaped papule with a central pore crossed by one or more silky white hairs. Histologically, it is described as a cystic cavity containing keratinous debris, hair shaft fragments, and numerous hair follicles arising from its linings. Collision or compound tumors are a coexistence of two or more identifiable tumors in the same lesion. We present a case of a 47-year-old man with a lesion on his left cheek clinically characterized as a TF. However, the histopathological study reveals a collision tumor involving a TF and a melanocytic nevus. Collision tumors involving melanocytic nevi and hair follicle-related tumors have been previously reported, such as desmoplastic trichoepithelioma, epidermoid cyst, folliculosebaceous cystic hamartoma, and trichoadenoma.

Key words: Melanocytic nevus, skin neoplasms, trichofolliculoma

INTRODUCTION

Trichofolliculoma (TF) is a hamartoma usually located in the face. It is clinically described as a dome-shaped papule with a central pore, characteristically with one or more silky white hairs growing through it. Histologically, it is described as a cystic cavity lined by stratified squamous epithelium including a granular cell layer, containing keratinous debris and hair shaft fragments. There are also numerous hair follicles arising from the cyst wall, each one surrounded by a well-defined perifollicular sheath.

Benign melanocytic neoplasms are called nevi. These neoplasms are characterized by the presence of melanocytic cells in epidermal nests within the dermis or in other tissues. Melanocytic nevi can be subdivided into acquired and congenital nevi. Acquired nevi are defined by the proliferation of melanocytes at the dermal-epidermal junction; however, some authors believe that Miescher and Unna-type melanocytic nevus arises from melanocytes in the adnexal epithelium.

Collision or compound tumors have been described as the coexistence of two or more identifiable tumors in the same lesion. Folliculosebaceous cystic hamartomas (FSCH) are cutaneous hamartomas with a follicular, sebaceous, and mesenchymal component. Schulz and Hartschuh considered FSCH as the last stage of TF; however, it is not universally accepted since there are congenital forms of FSCH. The relationship between FSCH and melanocytic nevi in a compound tumor was first described by Noro et al. Later, Ansai et al. presented 7 cases with distinctive features of Miescher-type nevi in a series of 153 FSCH.

We present the first case report of a collision tumor involving a TF and a melanocytic nevus.

CASE REPORT

A 47-year-old man presented with a slow-growing pink papule on his left cheek which developed over 3 years on a previously normal skin. During the last year, the lesion started showing a central pore with a single silky hair growing through it [Figure 1].

The clinical diagnosis was TF, and an excisional biopsy was performed. Histopathological study showed a cystic cavity...
containing keratinous debris and hair shaft fragments, with numerous hair follicles arising from the cyst wall. Surrounding it, an intradermal melanocytic proliferation arranged in nests [Figure 2]. Final diagnosis was a collision tumor involving TF and melanocytic nevus.

**DISCUSSION**

Wu\(^1\) hypothesized that FSCH and TF originate from a dilated hair follicle under the induction of perifollicular stroma. If the induction produces isthmic and sebaceous differentiation, FSCH might develop. If the induction is focal at a lower segment, secondary follicles may evolve to TF.

FSCH and TF are closely related, and both can develop contiguous to melanocytic nevi. Other hair follicle-related tumors, such as desmoplastic trichoepithelioma, epidermoid cyst, and trichoadenoma reportedly, develop contiguous to these melanocytic neoplasms. Remarkably, one of the most common melanocytic nevus collision tumors is associated with epidermal cysts.\(^1\) This could suggest some kind of underlying induction phenomena.

Under the premise that Miescher-type melanocytic nevi arise from melanocytes of the adnexal epithelium, they would have the potential to induce the contiguous follicle. Therefore, a presumable hypothesis is that collision tumors involving this type of nevus and FSCH might have developed by induction. The same mechanism could apply to the collision tumor reported above.

In this case, during the first 2 years, the lesion was a pink dome-shaped papule, without a central pore, and only through its last year, it started showing the classical TF appearance. Thus, it might have begun as a melanocytic nevus which later induced the emergence of TF.

**CONCLUSION**

We report the first case of a collision tumor containing a TF surrounded by a melanocytic nevus. This case might correspond to a tumor originated from a hair follicle, the TF, which developed as a result of the induction of the adjacent stroma, the melanocytic nevus. Tumor induction by adjacent tissue is a phenomenon yet to be studied; this has been suggested as a possible mechanism in other follicle-related tumors such as epidermal cysts and FSCH, among others, under the influence of melanocytic nevi.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Calonje E, MacKee PH, editors. Tumors of the hair follicle. In: McKee's Pathology of the Skin: With Clinical Correlations. 4th ed., Vol. 31. Edinburgh: Elsevier, Saunders; 2012. p. 1445-87.
2. Grichnik J, Rhodes A, Sober A. Benign neoplasias and hyperplasias of melanocytes. In: Goldsmith LA, Fitzpatrick TB, editors. Fitzpatrick's Dermatology in General Medicine. 7th ed., Vol. 1, 122. New York: McGraw-Hill Medical; 2008. p. 1099-121.
3. Yus ES, del Cerro M, Simón RS, Herrera M, Rueda M. Unna's and Miescher's nevi: Two different types of intradermal nevus. Hypothesis concerning their
Bolte, et al.: Trichofolliculoma and melanocytic nevus

4. Boyd AS, Rapini RP. Cutaneous collision tumors. An analysis of 69 cases and review of the literature. Am J Dermatopathol 1994;16:253-7.

5. Schulz T, Hartschuh W. Folliculo-sebaceous cystic hamartoma is a trichofolliculoma at its very late stage. J Cutan Pathol 1998;25:354-64.

6. Cole P, Kaufman Y, Disho M, Hatzf DA, Hollier L. Giant, congenital folliculosebaceous cystic hamartoma: A case against a pathogenetic relationship with trichofolliculoma. Am J Dermatopathol 2008;30:500-3.

7. El-Darouzy MA, Marzouk SA, Abdell-Halim MR, El-Komy MH, Mashaly HM. Folliculo-sebaceous cystic hamartoma. Int J Dermatol 2001;40:454-7.

8. Noro S, Futagami A, Ansai S, Kawana S. Folliculosebaceous cystic hamartoma associated with melanocytic nevus. J Dermatol 2011;38:396-8.

9. Ansai S, Kimura T, Kawana S. A clinicopathologic study of folliculosebaceous cystic hamartoma. Am J Dermatopathol 2010;32:815-20.

10. Wu YH. Folliculosebaceous cystic hamartoma or trichofolliculoma? A spectrum of hamartomatous changes inducted by perifollicular stroma in the follicular epithelium. J Cutan Pathol 2008;35:843-8.

11. Cohen PR, Rapini RP. Nevus with cyst. A report of 93 cases. Am J Dermatopathol 1993;15:229-34.