Trilogy Revisited: A Case Report of Co-Existing Nevus Sebaceous with Syringocystadenoma Papilliferum and Tubular Apocrine Adenoma

Abstract
Nevus sebaceous of Jadassohn is a cutaneous hamartoma that is associated with various benign and malignant cutaneous tumors. Syringocystadenoma papilliferum and tubular apocrine adenoma are rare benign adnexal tumors. Simultaneous occurrence of all three tumors at the same site is extremely rare, which has raised several questions regarding their origin and pose a diagnostic challenge owing to considerable overlap in clinical and histological features. However, limited case reports have hindered our understanding of these tumors and their natural behavior. Herein, we report a case of a hairless scalp plaque in a 43-year-old male which on histological examination showed presence of syringocystadenoma papilliferum and tubular apocrine adenoma in the background of nevus sebaceous. We also made an attempt to review the available literature and understand the origin and look for clues to aid in accurate diagnosis of such tumors.

Keywords: Nevus sebaceous of Jadassohn, syringocystadenoma papilliferum, tubular apocrine adenoma

Introduction
Nevus sebaceous of Jadassohn (NS) is a complex cutaneous hamartoma with involvement of epidermis, pilosebaceous units, and other adnexal structures. The most common site is the scalp, although there have been reports from other sites like forehead and face. It usually presents at an early age and has been known to give rise and/or associated with several benign and malignant neoplasms with progressing age of the patient.[1]

Syringocystadenoma papilliferum (SCAP) and tubular apocrine adenoma (TAA) are rare and benign neoplasm of sweat gland. TAA, first described in 1972 by Landry and Winkelmann, has a disputed origin from primary epithelial germ cells to pleuripotent stem cells to cells of pre-existing structures.[2] Till now, very few case reports have documented simultaneous occurrence of all three lesions. We in this case report, have described simultaneous occurrence of the triple lesions in a middle-aged male, along with comprehensive review of literature.

Case Report
A 43-year-old male presented for evaluation of a hairless plaque over scalp since childhood and slowly growing in size. On examination, a hairless yellowish plaque measuring 1.5 × 1 cm was noted with one end showing verrucous changes [Figure 1a]. A clinical diagnosis of nevus sebaceous with SCAP was considered and the lesion was completely excised.

The entire lesion was subjected to histological examination. Section examined from the plaque showed lobules of hyperplastic sebaceous glands, and immature hair follicles, consistent with that of NS [Figure 1b]. Sections from the filiform area showed two types of lesion [Figure 2a]. The surface of the lesion showed exophytic and endophytic papillomatous projections lined with 2 rows of epithelial cells, peripheral layer of cuboidal cells, and luminal layer of columnar cells. Stroma of the papillomatous projections were densely infiltrated by plasma cells [Figure 2b]. These findings were consistent with that of SCAP. The other lesion in the dermis was distinct and separate from the former lesion, and was a well-circumscribed nodular lesion consisting of varying size tubules lined by two layers of epithelial cells. The outer layer mostly comprised of flattened basal cells, and confirmed the diagnosis of TAA [Figure 2c]. The combined histological features supported the diagnosis of nevus sebaceous with SCAP and TAA [Figure 2d].

Address for correspondence:
Dr. Debajyoti Chatterjee,
Department of Histopathology,
5th Floor, Research 'A' Block, Post Graduate Institute of Medical Education and Research, Chandigarh - 160 012, India.
E-mail: devchat1984@gmail.com

How to cite this article: Bardia A, Chatterjee D, Vinay K. Trilogy revisited: A case report of co-existing nevus sebaceous with syringocystadenoma papilliferum and tubular apocrine adenoma. Indian Dermatol Online J 2021;12:577-9.

Received: 03-Jul-2020. Revised: 18-Dec-2020
Accepted: 26-Jan-2021. Published: 14-Jul-2021.

For reprints contact: WIKILRP/Medknow_reprints@wolterskluwer.com

Access this article online
Website: www.idoj.in
DOI: 10.4103/idoj.IDOJ_519_20
Quick Response Code:
cells and inner layer of columnar cells with abundant granular eosinophilic cytoplasm and basally placed nuclei [Figure 2c and d]. Some of the tubules showed the presence of inspissated secretion. Surrounding stroma showed dense fibro-collagenous tissue. The lesion had no connection with overlying epidermis. These findings were diagnostic of TAA.

On performing immunohistochemistry, both SCAP and TAA components showed positivity for keratin 7 and EMA [Figure 3a–c]. The SCAP component showed strong nuclear GATA3 expression while in TAA component, GATA3 expression was weak and focal [Figure 3d and e]. The basal cells in both lesions were highlighted by calponin [Figure 3f] and p63. None of the lesions were positive for p53 and BRAFV600E (VE1 clone) immunostain.

Discussion

Adnexal tumors may exhibit apocrine, eccrine, follicular, or sebaceous differentiation. Simultaneous occurrence of multiple benign adnexal tumors at the same site has raised queries regarding their classification and relationship. TAA is a rare adnexal tumor with debated cell of origin. Fischer argued it to be a variant of SCAP based on overlapping clinicopathological features.[3] Few attempted to establish that both the lesions are distinct. The present case shows characteristic histological features of SCAP in the upper portion near surface and that of TAA in the lower portion, without communication with SCAP. This is further supported by characteristic immunoprofiles of the two lesions.

Occurrence of TAA and SCAP is rare. SCAP is the most common benign secondary tumor associated with NS. However, simultaneous occurrence of all three lesions is extremely rare. Till date, only 7 such cases have been reported [Table 1].[4-10]

Kim et al.[8] proposed that TAA has the potential to develop from NS and/or SCAP, which has led to difficulty in differentiating these tumors and establishing relationship among them. This assertion is based on the fact that apocrine glands are noted in deeper part of NS and may play a role in the development of TAA in later life.[6] Ishiko et al.[5] suggested that development of TAA and SCAP must be preceded by an

| Manuscript       | Age (years) | Sex   | Site   |
|------------------|-------------|-------|--------|
| Yasuhara[4]      | 34          | Female| Chest  |
| Ishiko et al.[5] | 75          | Male  | Scalp  |
| Ahn et al.[6]    | 52          | Male  | Scalp  |
| Yamane et al.[7] | 77          | Female| Breast |
| Vazmitel et al.[8] | 61      | Male  | Scalp  |
| Kim et al.[9]    | 40          | Female| Scalp  |
| Gozel et al.[10] | 70          | Female| Scalp  |

Figure 1: (a) Yellowish hairless plaque on the vertex showing filiform growth at one end (b) Representative section from the plaque shows hyperplastic sebaceous glands and immature hair follicles, characteristic of nevus sebaceous of Jadassohn (H and E, 200×)

Figure 2: (a) Representative section from the elevated area shows two types of lesions—upper portion towards skin surface depicting exophytic and endophytic papillomatous projection and lower portion depicting a distinct well-circumscribed nodule (H and E, 20×); (b) papillomatous projection lined by two layers of cells and containing dense stromal plasma cell rich inflammatory infiltrate, representing syringocystadenoma papilliferum (H and E, 200×); (c) nodule in dermis showing tubules of varying size with stromal fibrosis and decapitation secretion in lumina (H and E, 100×); (d) the tubules lined by two layers of cells—peripheral of flattened to cuboidal cells and luminal columnar cells with abundant granular eosinophilic cytoplasm (H and E, 200×)

Figure 3: (a) Representative section showing both syringocystadenoma papilliferum (upper left) and tubular apocrine adenoma (lower right) (H and E, 40×); both the components show strong positivity for cytokeratin 7 (b, 40×) and epithelial membrane antigen (c, 40×) GATA 3 shows diffuse and strong expression in SCAP component, while weak in TAA component (d, 40 × and e, 100×) (f) Calponin highlights the basal cells in both SCAP and TAA components (40×)
organized NS. This assertion is supported by the fact that all these lesions were present over a period of 5 years prior to excision and a majority of lesions were present since birth or childhood. In the present case, the patient had the lesion since childhood with history of insidious growth over the years. These observations suggest that these lesions might develop from pleuripotent epithelial cells. Although both SCAP and TAA are of sweat gland origin, they showed slight difference in their immunoprofile in this case. This indicates that these two tumors are different with possibly different pathogenesis. It is important to be aware of their coexistence for accurately diagnosing all the components. The present case report is an effort in this regard to enrich the literature and enhance our understanding about these lesions.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. Kantrow SM, Ivan D, Williams MD, Prieto VG, Lazar AJ. Metastasizing adenocarcinoma and multiple neoplastic proliferations arising in a nevus sebaceus. Am J Dermatopathol 2007;29:462-6.
2. Landry M, Winkelmann RK. An unusual tubular apocrine adenoma. Arch Dermatol 1972;105:869-79.
3. Fischer TL. Tubular apocrine adenoma. Arch Dermatol 1973;107:137.
4. Yasuhara M. Typical But Rare Cases. Tokyo: Seishindou; 1989:22.
5. Ishiko A, Shimizu H, Inamoto N, Nakamura K. Is tubular apocrine adenoma a distinct clinical entity? Am J Dermatopathol 1993;15:482-7.
6. Ahn BK, Park YK, Kim YC. A case of tubular apocrine adenoma with syringocystadenoma papilliferum arising in nevus sebaceus. J Dermatol 2004;31:508-10.
7. Yamane N, Kato N, Yanagi T, Osawa R. Naevus sebaceus on the female breast accompanied with a tubular apocrine adenoma and a syringocystadenoma papilliferum. Br J Dermatol 2007;156:1397-9.
8. Kim MS, Lee JH, Lee WM, Son SJ. A case of tubular apocrine adenoma with syringocystadenoma papilliferum that developed in a nevus sebaceus. Ann Dermatol 2010;22:319-22.
9. Vazmitel M, Michal M, Mukensnabl P, Kazakov DV. Syringocystadenoma papilliferum with sebaceous differentiation in an interadermal tubular apocrine component. Report of a case. Am J Dermatopathol 2008;30:51-3.
10. Gozel S, Donmez M, Akdur NC, Yikilan H. Development of six tumors in a sebaceous nevus of Jadassohn: Report of a case. Korean J Pathol 2013;47:569-74.