Solitary Papule with Central Crater in a Young Man: Dermoscopy Picks the Clue

Dear Editor,

A 26-year-old male presented with an asymptomatic papule on his right cheek of 1-year duration. The lesion was gradually increasing and there was no history of trauma preceding the lesion. Clinical examination revealed an 8 mm × 8 mm pinkish-brown, well-defined papule with a central crateriform aspect filled with keratotic material [Figure 1]. Noncontact dermoscopy under polarized mode using DermLite™ DL3 (3Gen Inc., San Juan Capistrano, CA, USA) revealed a light-pink background, central white scales, follicular plugging and a dilated follicular opening with a small cluster of short fine nonpigmented hairs. Yellow-white and gray–white structureless areas and linear branching vessels extending from the periphery toward but not crossing the center were also noted [Figure 2]. The lesion was completely excised for histopathological analysis that revealed classical features of trichofolliculoma characterized by multiple cystic cavities in the dermis filled with keratin and fragmented hair shafts and lined by stratified squamous epithelium. Numerous follicular structures radiating from the walls of the cystic cavities were also seen. The interstitium was composed of fibrocollagenous stroma and sparse lymphocytic infiltrate. The overlying epidermis was acanthotic [Figures 3 and 4].

Trichofolliculoma is an uncommon benign hair follicle hamartoma which is believed to represent aborted differentiation of stem cells toward hair follicles at different stages of maturation. It is frequently seen in young age typically involving the face, without any racial or gender predilections. It usually presents as a solitary asymptomatic skin-colored to erythematous papule or nodule typically with a central pore draining sebum and keratinous debris or exhibiting a tuft of vellus hairs. Clinical differential diagnoses for trichofolliculoma include other benign follicular tumors such as pilar sheath acanthoma, dilated pore of Winer, and trichoepithelioma. Trichofolliculoma may also mimic epidermal cyst and basal cell carcinoma. Histopathology of trichofolliculoma is characteristic and shows a dilated primary hair follicle lined by epithelium continuous with infundibulum or isthmus opening on to the skin surface. Numerous secondary follicles in different stages of differentiation are seen radiating from the wall of the primary follicle. Within the lumen, small hair structures, keratin, and sebum may be present. Abundant perifollicular fibrocollagenous stroma and lymphocytic infiltrate is also seen. The clinical course of trichofolliculoma is benign and treatment is indicated for cosmetic concerns only.[1-3] Malignant transformation is exceedingly rare.[4] The excision of the lesion for histopathological assessment in our case was curative.

Based on the clinical appearance, differential diagnoses of benign hair follicle tumors such as pilar sheath acanthoma or a solitary trichoepithelioma were considered. Following dermoscopy, keratoacanthoma was also considered based on the observations of a pink background, central keratin, white structureless areas, and marginal linear vessels.[5] However, the age of the patient and duration of the lesion were not entirely in favor. Further, the observation of a conspicuous small tuft of vellus hairs on dermoscopy, not evident clinically, pointed toward the diagnosis of trichofolliculoma which was confirmed by histology. The central white scaling and follicular plug correspond to the dilated primary follicular opening filled with keratin debris on histology. The adjacent cluster of short fine nonpigmented hairs represents a similar dilated follicular opening with a tuft of vellus hairs extruding from within. The gray–white structureless areas correspond to the acanthotic epidermis, yellow-white areas to enlarged sebaceous glands, as can be seen in Figure 3, and the pinkish background to the fibro collagenous stroma. Literature on dermoscopy of trichofoliculoma is quite scarce. Panasati *et al*.[6] described the central brown zone with radial brown projections in a 4-month-old lesion located in the preauricular region as "firework pattern." Another report by Garcia-Garcia *et al*.[7] describes a bluish nodule located on the right lower eyelid of 1-year duration showing central white-pink area, shiny white structures, dotted vessels, and central scales. The authors attributed the discrepancy in features observed with those described previously by Panasiti *et al*. to the longer duration and chronicity of the lesion. The light pink structureless background and central scaling observed in our case were identical to those observed by Garcia-Garcia *et al*. The vascular pattern observed in our case has been described as "crown vessels" and is typically seen in sebaceous hyperplasia and molluscum contagiosum.[8] A similar pattern is also described in xanthogranuloma.[9,10] Hence, this pattern we believe may be seen in raised dome-shaped lesions. This vascular pattern observed in our case differed from the dotted vessels described by Garcia-Garcia *et al*. Further, the vellus hair tuft which is a rather characteristic clinical feature of trichofolliculoma was not obvious in our case to the naked eye but was revealed by dermoscopy. This feature has not been described in either of the above cases. In similarity to our case, one of the eight cases of trichofolliculoma described by Jégou-Penouil *et al.* demonstrated central hairy structures on dermoscopy that were not clinically evident.[11] Based on the currently available information, dermoscopy of trichofolliculoma appears to vary depending on the clinical aspects of the

Figure 1: An 8 mm × 8 mm, dome-shaped papule with central crater on the right cheek

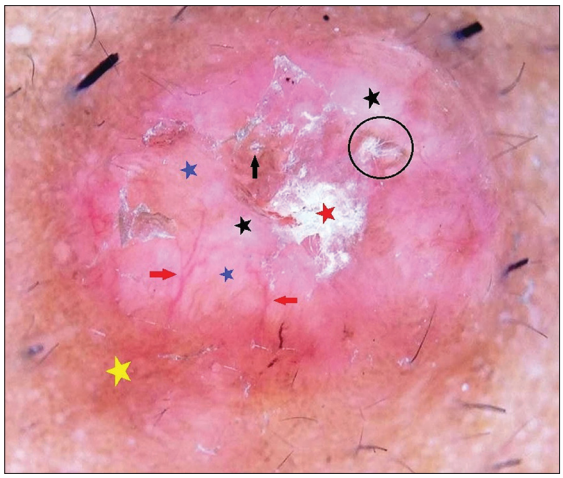

Figure 2: Noncontact dermoscopy under polarized mode showing a light pink background, central white scales (red star), follicular plug (black arrow), gray–white structureless areas (black stars), yellow–white structureless areas (blue stars), linear branching vessels at the margin (red arrows) extending toward without crossing the center, and marginal faint pigment network (yellow star). Also note a conspicuous cluster of short fine nonpigmented hairs (black circle) adjacent to the white scales. (DermLite™ DL3, 3Gen Inc. San Juan Capistrano, CA, USA. ×10)

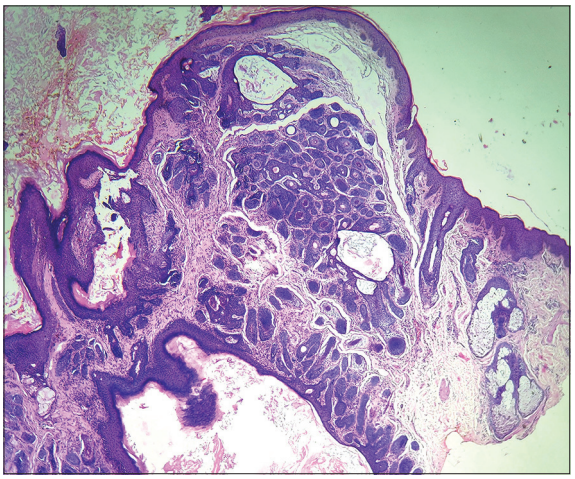

Figure 3: Photomicrograph showing numerous cystic cavities in the dermis filled with eosinophilic and basophilic material with numerous follicular structures radiating from the walls of the cavities. Also note the dense fibrocollagenous stroma with sparse mononuclear infiltrate around the follicular elements and a focus of sebaceous hyperplasia in the dermis. Overlying epidermis shows acanthosis (H and E, ×10)

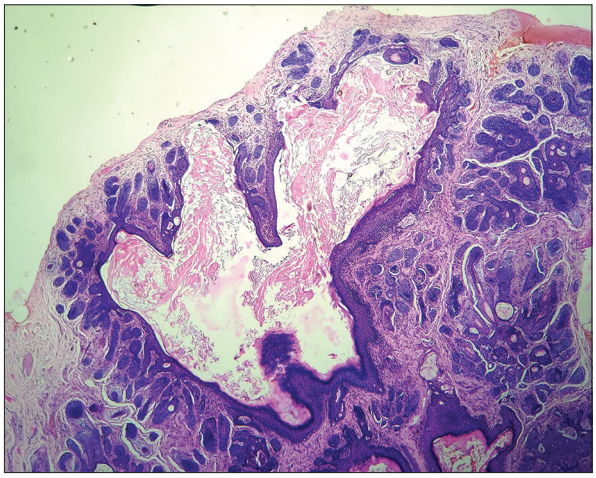

Figure 4: Closer view of a cystic cavity shows keratin and fragmented hair structures in the center with numerous follicular structures in different stages of maturation radiating from the walls of the cavity (H and E, ×10)

lesion such as site, duration, lesional morphology, and possibly the skin phototype. Dermoscopy appears very useful in the diagnosis of trichofolliculoma when it can visualize the central tuft of hair in cases where the same is not evident clinically. Further observations however are required with appropriate sample size and study designs to establish dermoscopic diagnostic criteria for trichofolliculoma.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

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