**INTRODUCTION**

Squamous cell carcinoma (SCC) is the second most cutaneous malignancy after basal cell carcinoma (BCC) with increasing incidence. It may present in a variety of morphologies including a keratinizing nodule. Conventionally, SCC is diagnosed clinically and in the view of nodule as a clinical manifestation, it can appear similar to nodular BCC, atypical fibroxanthoma, sclerosing liposarcoma, and desmoplastic melanoma. Prognostic and therapeutic implications are different in all these conditions and thus their distinction becomes important. Trichoscopy is a simple and non-invasive technique to visualize certain morphological features of skin lesions and it improves the diagnostic accuracy for melanocytic and nonmelanocytic pigmented lesions. Here, a case is reported wherein trichoscopic patterns were useful in the diagnosis of SCC on the scalp. To the best of our knowledge, this is the first report on trichoscopic patterns in SCC from India.

**Key words:** Diagnosis, pattern, squamous cell carcinoma, Trichoscopy

**CASE REPORT**

A 56-year-old woman presented with skin lesion over the vertex of the scalp for 5 years. There was a history of occasional bleeding from the lesion upon combing hair. There was no history of trauma before the appearance of lesion. On detailed examination, there was an indurated nodule measuring 7 cm × 5 cm. It was skin to erythematous in color. It was attached to underlying structures. Small ulcer of size 1.5 cm × 1.5 cm was also found [Figure 1].

Systemic examination was unremarkable. Hematological and biochemical analyses were normal. Trichoscopy with polarizing and nonpolarizing lights with ×10 magnification was performed. It demonstrated white structureless areas on pink background, atypical vessels, radially arranged hairpin vessels, and hemorrhage [Figures 2-4]. Skin biopsy was done using 4 mm punch and sent for histopathology. It showed atypical cells in small clusters, cords, and small nests. It was suggestive of SCC. Histopathology was confirmed by Immunohistochemistry. The patient was advised for chemotherapy and surgery.
Figure 1: Clinical image of squamous cell carcinoma presenting as indurated and erythematous nodule with ulceration and hair loss

Figure 2: Trichoscopy demonstrating white structureless areas arranged diffusely covering entire area (black stars) and atypical vessels (yellow arrows) and hemorrhage (yellow star) on pink background

Figure 3: Trichoscopy showing atypical (black arrow), arborizing (yellow arrows) vessels and white structureless areas in a speckled pattern (black stars)

Figure 4: Trichoscopy showing radially arranged hairpin vessels (black arrows), white structureless areas (black stars) and hemorrhage (yellow star)

Figure 5: Histopathology showing focus of malignant changes with atypical keratinocytes (H and E, ×10)

Figure 6: Histopathology showing atypical cells arranged in cords and trabeculae with pleomorphism and occasional mitosis (H and E, ×40)
trabeculae with nuclear hyperchromasia, pleomorphism, and occasional mitosis suggestive of SCC [Figures 5 and 6]. The patient was referred to oncology department for further management.

**DISCUSSION**

Trichoscopy is a simple and noninvasive technique to visualize certain morphological features of skin that are not visible under normal examination. Many patterns seen under trichoscopy play a supportive role in the diagnosis of nonpigmented tumors affecting scalp. There are certain dermoscopic criteria to diagnose SCC described in literature. These criteria are based on patterns such as hemorrhage, white structureless areas, keratin crusts, white collarette, white pearls, and white circles and also on the morphology of vessels and their arrangement. Keratoacanthoma and SCC show almost same dermoscopic patterns with very few patterns in higher or lower frequencies.

In this study, white structureless areas were arranged in diffuse as well as speckled pattern. White structureless areas correspond to either hyperkeratosis and acanthosis or collagen fibers in the dermis depending on the clinical condition. In this context, they represent keratinization (hyperkeratosis). White structureless areas are observed in many other nonpigmented skin tumors. In pyogenic granuloma, it appears as “white rail lines” representing fibrous septa. In pigmented BCC, it covers entire lesion diffusely in a “veil-like” pattern. Other trichoscopic patterns such as red homogeneous areas in pyogenic granuloma and blue-gray nests, spoke wheel patterns in pigmented BCC help in differentiating these conditions form SCC. Hence, pattern of whitish areas can give clue to the diagnosis of a condition.

Vessel morphology and their arrangement in trichoscopy differentiate different skin tumors. They may be monomorphic or polymorphic. In SCC, glomerular, atypical, linear irregular, and hairpin vessels are observed. In this case, atypical and arborizing vessels and hairpin vessels in a radial arrangement were observed. Hairpin vessels and keratin are common to both seborrheic keratosis and nodular SCC. However, moth eaten borders, comedo-like openings, and milia-like cysts are characteristic of seborrheic keratosis and aid in the diagnosis of seborrheic keratosis. In eccrine spiradenoma, vessels take serpiginous pattern appearing as “serpentine.” In discoid lupus erythematosus presenting as a hairless plaque on the scalp, trichoscopy demonstrates branching telangiectasia combined with keratotic plugs, white structures, and blue-gray areas. Thus, types and patterns of vessels will give clue to the diagnosis of nonpigmented skin tumors under trichoscopy.

Another condition in the differential diagnosis of nodular SCC is nodular BCC wherein arborizing vessels are observed along with blue-gray nests. Merkel cell carcinoma (MCC) mimics nodular SCC both clinically and dermoscopically demonstrating linear irregular vessels. However, hairpin vessels favor nodular SCC and arborizing vessels support the diagnosis of MCC. Hyperkeratosis, which is characteristic of SCC is absent in MCC. Hence, trichoscopy is an important diagnostic technique to differentiate nonpigmented skin tumors affecting scalp, and it should be employed in day to day practice.

**CONCLUSION**

Hairpin, arborizing and atypical vessels; pink color, hemorrhage, and white structures are useful trichoscopic patterns in SCC on the scalp. Hence, trichoscopy is a useful diagnostic aide in the nonpigmented skin tumors. Further studies are suggested involving large sample size from Indian perspective. To the best of our knowledge, this is the first case report from India.

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**Conflicts of interest**

There are no conflicts of interest.

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