Dear Editor,

The surgical scar site can develop various inflammatory, infectious, and neoplastic dermatoses. In contrast to a short latency period, cutaneous lesions appearing at the surgical site after a long latent period are difficult to diagnose.

A 32-year-old man with skin phototype IV presented with an 8-year history of two slowly enlarging, asymptomatic swellings on the lower back. There was no history of ulceration or discharge from the swellings. They were located over a preexisting scar resulting from a prior surgery done 12 years ago. Cutaneous examination revealed two distinct skin-colored to reddish-blue, firm, non-tender mammillated plaques of sizes 3 cm × 2 cm and 2.5 cm × 1.5 cm over the right paraspinal area. In addition, multiple satellite papules were noticed adjacent to the two plaques [Figure 1]. Dermoscopy under polarized mode (Heine Delta 20T, 10x, Germany) showed central homogenous white areas, peripheral brown pigment network and structureless area, and a polymorphous vascular pattern comprising arborizing, linear irregular, and comma vessels. In addition, a blue structureless area, shiny white lines, erosion, and brown peppering were noted. The satellite papules showed a central white homogenous area and peripheral brown pigment network and rosette [Figure 2a-d]. The differential diagnoses included were dermatofibrosarcoma protubersans (DFSP), squamous cell carcinoma (SCC), scar sarcoidosis, and cutaneous lymphoma. Contrast-enhanced computed tomography of the neck, chest, and abdomen showed two well-defined minimal to non-enhancing lesions in the dermis and subcutaneous fat plane in the paraspinal lumbar region at the L3–L4 disc level without any evidence of distant metastasis. Magnetic resonance imaging showed skin and superficial adipose tissue edematous changes without intramuscular or intraspinal spread. Histopathology from the plaques revealed epidermal hyperplasia, increased basal pigmentation, dermal proliferating spindle cells, and dilated and congested blood vessels. The spindle cells were arranged in interlacing cords, fascicles, and a storiform pattern and extended to the biopsy margin. These spindle cells had elongated nuclei with minimal atypia or mitotic activity. Biopsy from a satellite papule showed a similar feature, except the proliferation was up to the mid dermis and did not involve the subcutis. The absence of predominant atypical mitotic figures, keratin pearls along with the absence of non-necrotizing, non-caseating granulomas ruled out SCC and scar sarcoidosis, respectively. Further, immunohistochemical [IHC] staining

Figure 1: Skin-colored to reddish-blue mammillated plaques with overlying nodules. Note the multiple satellite papules

Figure 2: Dermoscopy under polarized mode (Heine Delta 20T, 10x magnification) shows (a) Central homogenous white areas, peripheral brown pigment network and structureless area, brown peppering (red arrow), and arborizing (blue arrow) vessels. (b) Central homogenous white area, peripheral brown pigment network and structureless area, and linear irregular (red arrow) and comma (blue arrow) vessels. (c) Blue homogenous area, pigment network (red arrow), and shiny white lines (blue arrow). (d) A satellite papule shows a central white homogenous area (red arrow) and a peripheral brown pigment network along with a rosette (blue arrow)
was positive for CD34 and negative for S100 [Figure 3a-c]. Thus, based upon the history and pathological findings, a final diagnosis of DFSP was made. The two plaques were excised along with the scar with a 3 cm margin.

Scar, a site of chronic inflammation, acts as an underlying factor responsible for the development of cutaneous tumors. The challenge lies in differentiating these neoplastic conditions such as SCC, basal cell carcinoma, malignant melanoma, and Paget’s disease from each other and from the non-neoplastic infective and non-infective dermatoses like lupus vulgaris, deep fungal infection, and sarcoidosis.

DFSP is an uncommon malignant cutaneous tumor that originates from dermal fibroblasts. It is a locally aggressive tumor and invades deeper tissues like subcutaneous tissue, fascia, muscle, and bone. It is known for its slow progression and high rate of local recurrence. However, the chances of metastasis to vital organs are rare.[1,2] Trauma arising from burns, surgery, radiation, vaccination, and tattoos are the known risk factors for developing DFSP.[3]

The exact mechanism by which trauma predisposes to the development of DFSP is unknown. A plausible hypothesis is that the chronic inflammatory process stimulates the immune system at a local level which triggers the immunopathologic networks resulting in the malignant transformation of dermal cells.[3]

Dermoscopic features of scar site DFSP are rarely reported. Dermoscopically, DFSP shows a delicate pigment network, structureless hypo to depigmented or brown areas, shiny white streaks, pink color background, and arborizing and linear vessels.[4] In the index case, dermoscopy increased the pretest probability of DFSP before the pathological examination by demonstrating a central structureless white area, peripheral brown network/areas, and polymorphous vessels. The satellite papules showed a central white homogenous area and a peripheral pigment network, a pattern known to be associated with DFSP. A structureless bluish area was noticed that corresponded to dilated and congested blood vessels (containing deoxygenated blood).

Various cutaneous conditions can show overlapping features on dermoscopy, which needs to be differentiated from DFSP [Table 1] and hence necessitate final confirmation by, skin biopsy and IHC studies.

Histopathology of DFSP consists of a storiform pattern of tightly packed monomorphous spindle cells with diffuse infiltration of dermis and subcutis. In the later stages, the involvement of fascia and muscles can be seen. It is strongly positive for CD34 but negative for S100, smooth muscle actin, desmin, cytokeratin, and factor XIIIa.[10]

The prognosis of DFSP after surgical excision with a negative margin is good, with a recurrence-free survival rate of 86% for 5 years and 76% for 10 years.[2] Wide local excision (WLE) and Mohs micrographic surgery (MMS) are the widely accepted treatment modality for resectable primary tumors. Since our patient had a localized tumor without a distant spread, WLE was preferred.

In conclusion, we report a case of DFSP over the postsurgical site scar in a patient with a skin of color in which dermoscopy pointed to the diagnosis before pathological examination. In addition, the satellite papules also demonstrated a similar dermoscopic pattern as the primary tumor. However, a dermoscopic examination may not be diagnostic and the final diagnosis needs to be confirmed by pathological examination.

Table 1: Dermoscopic differential diagnoses of DFSP

| Cutaneous conditions | Dermoscopic findings |
|----------------------|----------------------|
| Solitary neurofibroma[5] | Yellow, yellow-brown, skin-colored, brown or gray homogenous area, exaggerated skin markings, pigment network-like area, fingerprint-like structures, brown globules, and linear branching vessels |
| Nevus lipomatosus cutaneous superficialis (NLCS)[6] | Cerebriform appearance, web-like regular pigment network, whitish veil, yellowish structureless area, comedo-like openings |
| Nevus sebaceous[7] | Yellowish-brown globules on a yellow background, grayish papillary appearance, homogeneous yellowish appearance, fine linear irregular or arborizing vessels |
| Spitz nevus[8] | Starburst pattern, regularly distributed dotted vessels, globular pattern with reticulate depigmentation |
| Basal cell carcinoma[9] | Arborizing vessels, ulceration, blue-gray ovoid nests and globules, small erosions, leaf-like, spoke wheel, and concentric structures |
| Melanoma[9] | Atypical networks, blue-whitish veils, polymorphous vessels, irregular dots and globules, irregular streaks and blotches, and regression structures |

DFSP - dermatofibrosarcoma protuberans
Letter to the Editor

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.

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Conflicts of interest
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References
1. Mahajan BB, Sumir K, Singla M. Metastatic dermatofibrosarcoma protuberans: A rare case report from North India. J Can Res Ther 2015;11:670.
2. Reid AT, Berger A, Johnson-Jahangir H. Dermatofibrosarcoma protuberans with fibrosarcomatous transformation: A tale of unbridled expansion. JAAD Case Rep 2020;6:1006-8.
3. Diwakar DK, Wadhwani N, Paruthi S. Recurrent dermatofibrosarcoma protuberans: Challenging a surgeon’s dexterity for the ‘tricky’ margins. Ecancermediascience 2018;12:858. doi: 10.3332/ecancer.2018.858.
4. Escobar GF, Ribeiro CK, Leite LL, Barone CR, Cartell A. Dermoscopy of dermatofibrosarcoma protuberans: What do we know? Dermatol Pract Concept 2019;9:139-45.
5. Behera B, Kumari R, Thappa DM, Gochhait D, Srinivas BH, Ayyanar P. Dermoscopic features of solitary neurofibroma: A retrospective analysis of 32 cases. Australas J Dermatol 2020;61:e406-9.
6. Kinnera B, Suggu S, Konakanchi V. Dermoscopy of nevus lipomatosus cutaneous superficialis in a patient with skin type IV. Dermatol Pract Concept 2022;12:e2022001.
7. Kelati A, Baybay H, Gallouj S, Mernissi FZ. Dermoscopic analysis of nevus sebaceus of jadassohn: A study of 13 cases. Skin Appendage Disord 2017;3:83-91.
8. Lallas A, Apalla Z, Ioannides D, Lazaridou E, Kyrgidis A, Broganeli P, et al. Update on dermoscopy of spitz/reed naevi and management guidelines by the International Dermoscopy Society. Br J Dermatol 2017;177:645-55.
9. Kato J, Horimoto K, Sato S, Minowa T, Uhara H. Dermoscopy of melanoma and non-melanoma skin cancers. Front Med (Lausanne) 2019;6:180.
10. Hao X, Billings SD, Wu F, Stultz TW, Procop GW, Mirkin G, et al. Dermatofibrosarcoma protuberans: Update on the diagnosis and treatment. J Clin Med 2020;9:1752.