Case Report

Cutaneous Angiosarcoma Mimicking an Inflammatory Scalp Lesion: Diagnostic Insight from Dermoscopy, Tzanck Smear, and Immunohistochemical Analysis

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Abstract

Cutaneous angiosarcoma is a rare and aggressive malignant tumor of vascular endothelial origin that most commonly affects the scalp of elderly individuals and may clinically mimic benign or inflammatory dermatoses, leading to delayed diagnosis. We report the case of an 85-year-old man who presented with a three-month history of a progressively enlarging, painful lesion on the right parietal region of the scalp, which had initially been misdiagnosed as herpes zoster–associated cervical trophic syndrome. Dermatological examination revealed a 13 × 9 cm violaceous plaque with ulceration and yellow crusting. Dermoscopy demonstrated red clods and irregular red-violaceous structureless areas. Cytologic examination using a Tzanck smear showed atypical spindle cells with hyperchromatic nuclei and prominent nucleoli, suggestive of a vascular malignancy. Histopathological evaluation confirmed the diagnosis of cutaneous angiosarcoma, and immunohistochemical staining was positive for ERG, CD31, and CD34 but negative for EMA, CK5/6, HHV8, and BerEP4. Head computed tomography revealed no evidence of metastasis or calvarial invasion. The patient was referred to oncology; however, the patient was referred to oncology; however, systemic chemotherapy was not initiated because of advanced age; surgical excision with consideration of adjuvant radiotherapy was planned. This case highlights that cutaneous angiosarcoma may clinically mimic herpes zoster–related conditions and emphasizes the importance of dermoscopy, cytology, and histopathology in the early diagnosis of atypical scalp lesions.

Keywords: Cutaneous angiosarcoma, dermoscopy, Tzanck smear

Introduction

Angiosarcoma is a rare and aggressive malignant tumor that arises from vascular or lymphatic endothelial cells and is associated with a poor prognosis. Cutaneous angiosarcomas are classified as primary or secondary; primary cutaneous angiosarcomas most frequently occur in elderly men, particularly on sun-exposed regions of the scalp.[1] Owing to its variable clinical presentation, the diagnosis is often delayed or mistaken for other dermatoses.[1-3] Although zosteriform and inflammatory presentations of cutaneous angiosarcoma, as well as its dermoscopic patterns, have previously been described, reports focusing on Tzanck smear findings in primary cutaneous angiosarcoma remain extremely limited. Previous cytological studies of angiosarcoma have mainly described fine-needle aspiration or fluid cytology findings, including pleomorphic epithelioid or spindle cells, hyperchromatic nuclei, intracytoplasmic lumina, and other vasoformative features. Herein, we report a case of cutaneous angiosarcoma that clinically resembled herpes zoster–associated cervical trophic syndrome, highlighting the importance of considering angiosarcoma in the differential diagnosis of atypical cutaneous lesions.

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The present case adds to the literature by demonstrating that bedside Tzanck smear evaluation, when combined with dermoscopy, may provide early cytological clues to angiosarcoma and may help distinguish it from herpes zoster-related lesions before histopathological confirmation.

Case Report

An 85-year-old man presented with a three-month history of a progressively enlarging, painful, erythematous lesion on the right parieto-occipital scalp. He had been misdiagnosed with herpes zoster–associated cervical trophic syndrome. Owing to rapid progression, he was referred to our dermatology clinic. No family history of skin cancer was reported. He had no history of radiotherapy, chronic lymphedema, chronic immunosuppression, or previous malignancy. He also had no known exposure to established environmental carcinogens associated with angiosarcoma, such as vinyl chloride, thorotrast, or arsenic.

Dermatological examination revealed a 13 × 9 cm violaceous plaque with ulceration and yellow crusts (Figure 1A-C). Dermoscopy showed red and purple clods and red, white, and violaceous structureless areas (Figure 1D and E). The Tzanck smear showed atypical spindle and epithelioid cells with hyperchromatic nuclei, prominent nucleoli, poikilokaryosis, and cytoplasmic projections, raising suspicion of a malignant neoplasm, including a vascular tumor (Figure 1F-I). The absence of multinucleated giant cells and acantholytic cells did not support a diagnosis of herpes infection. A definitive diagnosis was established by histopathological examination and immunohistochemical staining, which showed positivity for ERG, CD31, and CD34, whereas EMA, CK5/6, HHV8, and BerEP4 were negative (Figure 2A-E). FLI-1 immunohistochemical staining was not performed in this case. PAS and Alcian blue staining were also performed. Based on these findings, a diagnosis of primary cutaneous angiosarcoma was established. The patient was referred to oncology; however, because of advanced age, chemotherapy was not initiated and surgical excision was planned. Computed tomography of the head revealed no metastases or calvarial invasion. The patient was evaluated by the multidisciplinary oncology team. Because of the patient's advanced age and clinical condition, systemic chemotherapy was not initiated. Surgical excision was planned for localized disease, and adjuvant radiotherapy was considered according to postoperative pathological findings and patient suitability. Written informed consent was obtained from the patient for publication of the clinical images.

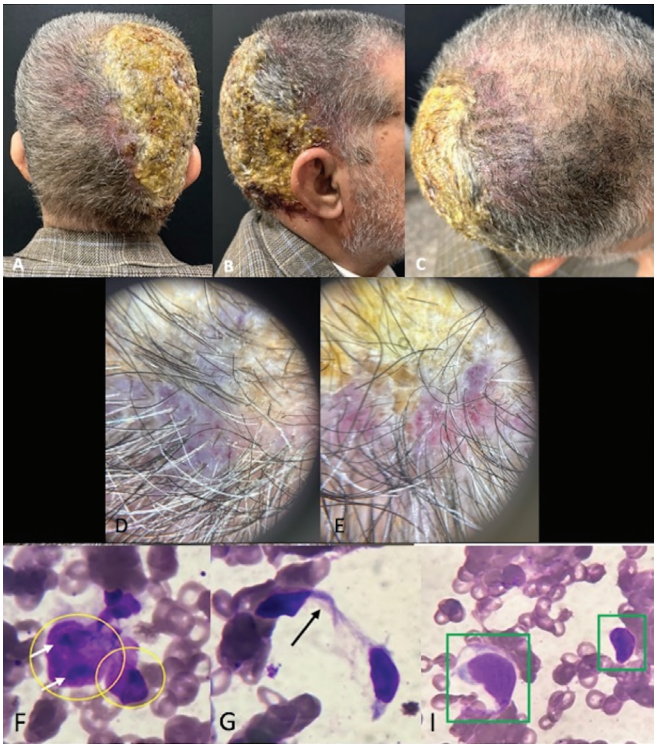

Figure 1. (A–C) Violaceous plaque with ulceration and yellow crusts localized on the right parieto-occipital scalp. (D, E) Dermoscopy: violaceous background with red, purple, and blue structureless areas, white streaks, and yellow clods. (F–I) Diff-Quik-stained Tzanck smear showing pleomorphic epithelioid and spindle cells with prominent nucleoli and cytoplasmic projections, at original magnification ×1000

Discussion

Cutaneous angiosarcoma is an aggressive vascular malignancy that originates from the endothelial cells of blood or lymphatic vessels, has a poor prognosis, and often masquerades as benign or inflammatory dermatoses in its early stages.[1] Cutaneous angiosarcomas may arise as primary tumors, typically affecting the chronically sun-damaged scalp and face of elderly men, or as secondary tumors associated with chronic lymphedema, prior radiotherapy, chronic immunosuppression, and exposure to environmental carcinogens such as vinyl chloride, thorotrast, and arsenic.[1-3] The differential diagnoses of cutaneous angiosarcoma include post-traumatic lesions, infections, inflammatory dermatoses, malignant solid tumors, and cutaneous lymphomas.[1]

Previous reports have shown that scalp angiosarcoma may mimic herpes zoster, facial cellulitis, inflammatory alopecia, infected cysts, or chronic ulcerative/wound-like lesions.[4-8] Similar to these cases, the inflammatory and crusted appearance of the lesion led to an initial herpes zoster–related misdiagnosis in our patient. In this context, dermoscopy and the Tzanck smear were useful adjunctive bedside tools, raising suspicion for a malignant vascular tumor and prompting early biopsy.

In our case, the diagnosis was achieved through the combined use of Tzanck smear, dermoscopy, and histopathology,

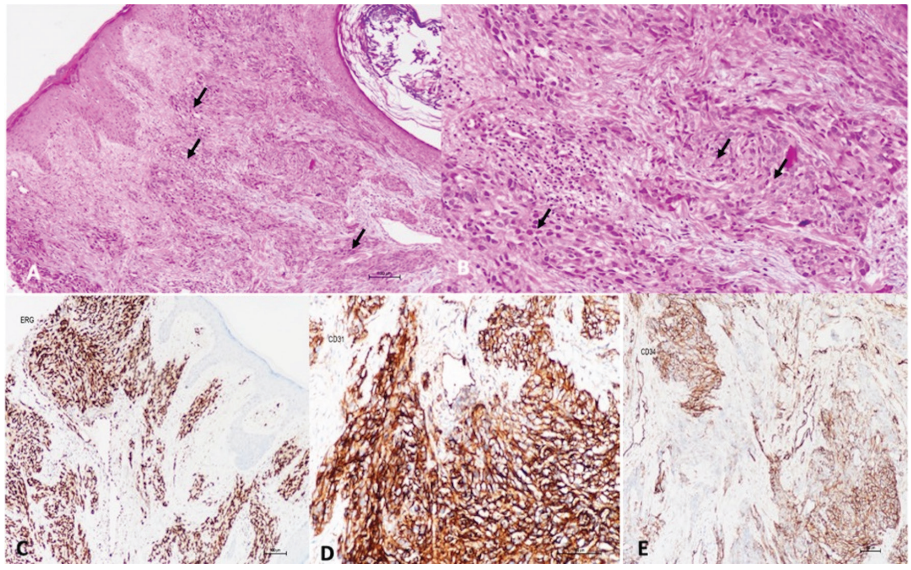

Figure 2. (A) Irregularly shaped vascular structures composed of hyperchromatic, pleomorphic cells (hematoxylin and eosin, 100×). (B) Pleomorphic tumor cells infiltrating the dermis (hematoxylin and eosin, 200×). (C–E) Tumor cells showing positive expression of ERG, CD31, and CD34 (100×, 200× and 100×).

underscoring the importance of multimodal evaluation. Dermoscopy demonstrated irregular, structureless red, purple, and blue areas interlaced with white streaks and yellow clods, while cytologic examination revealed pleomorphic epithelioid clusters with prominent nucleoli, atypical mitoses, and spindle cells.[1,3,9] Definitive confirmation was obtained by histopathology and immunohistochemistry with endothelial markers such as CD31, CD34, FLI-1, and ERG.[1] Optimal management includes wide surgical excision with adjuvant radiotherapy, while systemic treatment may be considered for advanced or unresectable disease.[10]

The novelty of this case lies not merely in the clinical mimicry of an inflammatory or a herpes zoster-related scalp lesion, but also in the bedside demonstration of atypical cytological features on Tzanck smear. While cytological features of angiosarcoma have been reported in fine-needle aspiration and fluid cytology specimens, Tzanck smear findings in primary cutaneous angiosarcoma have rarely been emphasized. Boucher et al.[11] reported the cytological features of angiosarcoma in 14 fine-needle aspiration biopsy specimens and one pleural fluid specimen. In addition, Panwar et al.[12] emphasized that Tzanck smear is an inexpensive and useful bedside diagnostic tool that may aid rapid clinical diagnosis in selected cutaneous lesions. The identification of atypical spindle and epithelioid cells with hyperchromatic nuclei and cytoplasmic projections, together with the absence of multinucleated giant cells, supported early reconsideration of the initial herpes zoster-associated diagnosis and prompted definitive biopsy and immunohistochemical evaluation.

This case highlights the diagnostic value of cytology and dermoscopy, and the necessity of considering angiosarcoma in atypical, persistent cutaneous lesions.

Conclusion

Cutaneous angiosarcoma may mimic inflammatory or infectious dermatoses, leading to diagnostic delay. Cytology and dermoscopy may provide valuable auxiliary clues for early recognition, but histopathology with immunohistochemistry remains the gold standard for diagnosis.

Footnotes

Informed Consent: Written informed consent was obtained from the patient for publication of clinical information and images.

Authorship Contributions

Concept: A.D., Data Collection or Processing: P.H., Ö.Ö., G.T., Analysis or Interpretation: P.H., A.K., Literature Search: A.D., Writing: A.K.

Conflict of Interest: The authors declare that they have no conflict of interest.

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