Hemorrhagic herpes zoster with contralateral multidermatomal distribution associated with rivaroxaban: An unusual presentation

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INTRODUCTION

Herpes zoster is an infection that develops when varicella-zoster virus reactivates from its latent state in a nerve ganglion. Symptoms typically begin with pain along the affected dermatome, followed within 2-3 days by a vesicular eruption, which is usually diagnostic. Herpes zoster eruption involving 2 disparate dermatomes on different sides of the body is referred to as herpes zoster duplex bilateralis, with a reported occurrence rate of < 0.5% when compared with general herpes zoster.[1] Multidermatomal herpes zoster has been most commonly reported in immunocompromised individuals. In a comprehensive literature review by Vu. et al conducted between 1969 and 1999, 6 cases of multidermatomal herpes zoster were reported, with only one of these 6 cases presenting in an immunocompetent adult.[2,3] Atypical herpes zoster has been reported in the immunocompetent elderly, suggesting a general immunocompromised state of advanced age with no evident underlying immunocompromised condition.[4] The classic clinical presentation consists of clear vesicles in a dermatomal distribution; however, a hemorrhagic or purpuric presentation has been reported in association with anticoagulants, in particular clopidogrel.[5]

CASE REPORT

A 90-year-old man presented with painful purpuric and bullous lesions of the left occipital, parietal, and temporal scalp (Fig 1), as well as non-hemorrhagic painful vesicles of the left neck (Fig 2) and mixed hemorrhagic and non-hemorrhagic vesicles of the right knee (Fig 3), all of 5 days duration.

Recent history was significant for excision with clear margins of an atypical fibroxanthoma of the vertex of the scalp 6 months prior to the onset of the eruption, followed by adjunctive radiation, which was completed 2 months prior to the onset of the eruption. Radiation of a total dose of 60 Gy was completed on July 9, with zoster developing on September 7.

Medical history was significant for atrial fibrillation, which developed after the atypical fibroxanthoma excision, necessitating the initiation of rivaroxaban for anticoagulation. The patient denied any recent history of fever, chills, abdominal pain, neurologic deficits, recent weight loss, and cough. His only medications were rivaroxaban and bimatoprost ophthalmic drops. Complete blood counts, hepatic profile, and electrolytes were within normal limits.

With the classic features of dermatomal pain and vesicles of recent onset, a clinical diagnosis of herpes zoster was made. Due to the atypical nature of the eruption, with the purpuric and nodular appearance of the scalp lesions and the presence of the lesions in multiple distant dermatomes, confirmatory biopsies of the scalp, neck, and knee lesions were performed.

He commenced valacyclovir 1 g 3 times per day for 7 days, gabapentin, and prednisone 40 mg daily on September 10, beginning a 12-day taper on September 14, which was completed on the September 26. The gabapentin was discontinued

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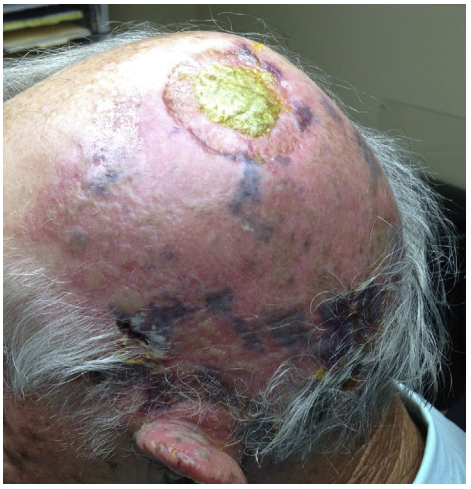

Fig 1. Purpuric herpes zoster lesions were visible on the left occipital, parietal, and temporal scalp along the C2 and V3 dermatomes.

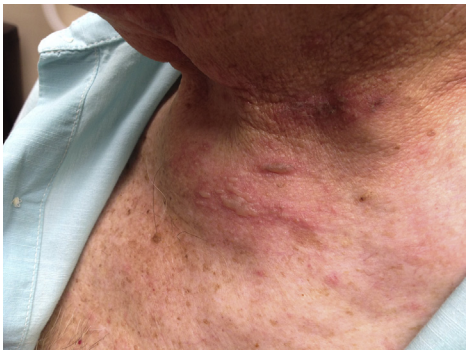

Fig 2. Herpes zoster lesions were visible in the C3 dermatome on the left lower aspect of the neck.

after one dose of 300 mg due to sedation, but the patient remained on valacyclovir and prednisone. The anticoagulant was not held during treatment. Seven days after clinic visit he was pain-free and most of the bullae had crusted over. The patient was totally healed by September 22, 17 days from onset of eruption and 12 days from initial clinic visit.

Histologic examination of all lesions revealed intraepidermal vesicle formation with acantholytic cells, many of which were multinucleated showing nuclear margination characteristic of herpes zoster (Fig 4). Immunostaining for Herpes Simplex Virus-1 and Herpes Simplex Virus-2 was negative in specimens from all 3 locations.

DISCUSSION

Hemorrhagic herpes zoster is rare and is generally seen in association with anticoagulant therapy, in particular clopidogrel.[5,6] The occurrence of hemorrhagic herpes zoster has also been reported in a

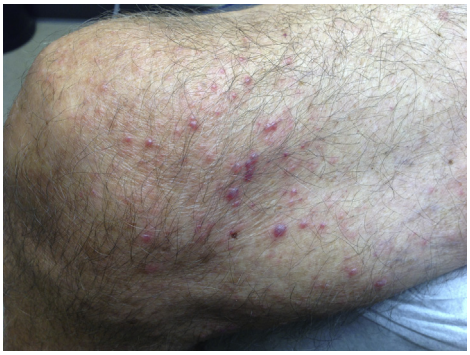

Fig 3. Purpuric and typical vesicular herpes zoster lesions were visible in the L3 dermatome on the medial aspect of the right knee.

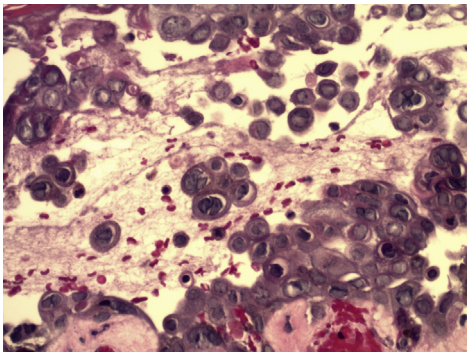

Fig 4. Intraepidermal vesicle formation with hemorrhage and acantholytic keratinocytes, many of which were multinucleated and exhibited nuclear margination.

patient with severe idiopathic thrombocytopenic purpura treated with high dose corticosteroids[7] as well as in a patient with COVID-19.[8]

The concomitant involvement of multiple dermatomes is also rarely seen with herpes zoster, particularly in immunocompetent individuals.[2,3] According to a recent review, when multidermatomal herpes zoster does occur, it is mostly observed in multiple cervical dermatomes.[9] Our patient is unusual due to his involvement of both adjacent dermatomes, C2, C3, and V3, as well as the distant dermatome L3. While radiation therapy is known to trigger herpes zoster for up to 5 months after treatment, eruptions are classically confined to the irradiated dermatomes. Radiation could have been the trigger in our patient's case, but would not be expected to produce a multidermatomal, purpuric eruption.[10]

It is the opinion of the authors that this is one of few reported cases of a patient with hemorrhagic herpes zoster associated with rivaroxaban, a selective inhibitor of clotting factor Xa.

This case serves as a reminder that herpes zoster can appear purpuric in patients on anticoagulants,

including those on rivaroxaban. As the use of novel anticoagulants continues to increase, dermatologists will undoubtedly see more side effects related to their use. This case also reminds us that when classic symptoms and clinical appearance exist for the diagnosis of herpes zoster, the presence of multidermatomal involvement, even of distant dermatomes, should not dissuade us from making the diagnosis.

Conflicts of interest

None disclosed.

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