

Serpentine Supravenous Hyperpigmentation in an HIV Patient Receiving R-CHOP for DLBCL

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ABSTRACT

Serpentine supravenous hyperpigmentation (SSH) is a rare vasculo-cutaneous entity that has been associated with peripheral infusion of chemotherapy agents, in particular 5-FU¹⁻³, but also seen with docetaxel^{4,5}, fotemustine⁶, and vinorelbine⁷. It consists of a marked hyperpigmentation along the superficial network of veins proximal to the chemotherapy infusion site and was originally described in a 1976 case report in association with 5-FU¹. Here, for the first time, we report SSH in association with R-CHOP chemotherapy.

Keywords: Serpentine supravenous hyperpigmentation, SSH, Chemotherapy, R- CHOP, DLBCL

Case presentation

A 50-year-old male with HIV, ESRD on PD, HTN, and recently diagnosed DLBCL presented to the Emergency Department with RUE pain and swelling ten days after receiving his first cycle of R-CHOP (cyclophosphamide dose reduced for PD) through a peripheral IV in the right hand. The patient reported that the swelling began in his right hand six days after the chemotherapy infusion, and was associated with tender, itchy, and notably darkened forearm veins. He also described shooting pains coming from the darkened veins. He denied any other rash or erythema, and endorsed chills but no fever. Physical examination was remarkable for mildly tender, deeply hyperpigmented veins originating at the site of his chemotherapy infusion site, and edema of the dorsum of the right hand without warmth or erythema (Figure 1a). Labs were significant only for neutropenia (ANC 900). An upper extremity ultrasound was performed to rule

out a DVT associated with this possible thrombophlebitis which was negative.



Figure 1: a) SSH in right arm following peripheral infusion of R-CHOP



Figure 1 b) Near-resolution four months later

The patient was diagnosed with serpentine supravenuous hyperpigmentation (SSH) and discharged home with supportive care on hospital day 2. Upon follow-up in the office four months later, the original SSH in his right arm had improved significantly (Figure 1b), but he developed new SSH in his left arm where he was now getting his chemotherapy infusions (Figure 2).



Figure 2: The second cycle of R-CHOP was peripherally infused through the left arm, with development of new SSH

In this instance, however, he did not feel any pain or discomfort from the darkened veins.

DISCUSSION

SSH is a rare and poorly understood entity usually presenting in the setting of recent chemotherapy infusion. Dermatopathology has shown that there is an increase in melanin production without destruction of basal cells or inflammatory infiltrate⁶. This is distinguished from persistent supravenuous erythematous eruption (PSEE), which presents clinically with an erythematous rash and histologically with vacuolar alteration of basal cells and perivascular inflammatory infiltrate⁸. PSEE lesions can eventually become hyperpigmented and take on the appearance of SSH. The reasons have not yet been elucidated, but it is thought to be a reaction to the cytotoxic drugs as opposed to direct extravasation. In addition, there have been reports of PSEE/SSH in patients treated for leprosy^{9,10}, autoimmune hemolytic anemia, and HIV¹² although in these cases the distribution is usually bilateral and unrelated to any peripheral infusions.

Based on the published case reports, SSH can appear anywhere between a few hours and several weeks after infusion of chemotherapy. Management consists of recognition and symptomatic treatment; a Doppler ultrasound can be performed if there is suspicion for thrombophlebitis. The rash usually resolves within 1-3 months. In this case, resolution of the original SSH was noted in the patient's right arm, however upon switching chemotherapy infusions to the other arm he developed new SSH at that site. This suggests that certain patients may be intrinsically more prone to developing this reaction, regardless of the infusion site.

CONCLUSION

Serpentine supravenuous hyperpigmentation is a rare vasculo-cutaneous entity most commonly associated with peripheral chemotherapy infusions but also seen in other conditions such as leprosy, autoimmune hemolytic anemia, and HIV. Here we described the first case of SSH after peripheral infusion of R-CHOP chemotherapy. Prompt recognition is important to ensure that a superficial thrombophlebitis is ruled out and to avoid further

unnecessary testing. Treatment is supportive as SSH usually resolves within 1-3 months.

CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

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