Pembrolizumab induced eosinophilic vasculitis in melanoma patient

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Introduction: Pembrolizumab, anti-PD1 antibody, is a standard treatment for metastatic melanoma. Skin is one of the most frequently affected tissues with immune-related adverse events, but vasculitis is rare. Here, we report a case of cutaneous eosinophilic vasculitis that occurred in a melanoma patient treated with pembrolizumab.

Case description: A 52-year-old woman was diagnosed of melanoma in the right breast and underwent surgical excision but soon progressed with lung metastasis. BRAF gene mutation test was negative for V600 mutations, and pembrolizumab was given as her systemic treatment. However, two weeks after the first dose, she presented with a painful, edematous skin lesion on the dorsum of her right foot. Laboratory tests showed leukocytosis with eosinophilia (62.8%), but other tests for autoantibodies including antineutrophil cytoplasmic antibodies (ANCA), antinuclear antibody (ANA), Anti-SS-A/Ro, Anti-SS-B/La were all negative. C3 and C4 complements were also within normal range. Computed tomography scan of the lower extremities and magnetic resonance imaging (MRI) of the left foot showed diffuse subcutaneous edema in the dorsum of the right foot without involvement of large vessels or deep tissue. Based on clinical symptoms, laboratory tests, and imaging studies, she was diagnosed with eosinophilic vasculitis which was considered an adverse event to pembrolizumab. Corticosteroid was prescribed starting with prednisolone 30mg per day. Two weeks later, the skin lesion was markedly improved and the eosinophil level was also decreased to 1.3%. Pembrolizumab was held and she underwent active surveillance without additional systemic therapy. However, the tumor progressed 12 months from the initial event. Pembrolizumab was carefully rechallenged, and this time no adverse event occurred.

Discussion: Eosinophilic vasculitis is a rare manifestation of immune-related adverse events. In this case, early intervention with corticosteroids led to rapid improvements and prevented systemic manifestations of vasculitis. Although re-administration of the culprit drug is a challenging issue, it could be carefully attempted when effective options are limited.

Figure 1

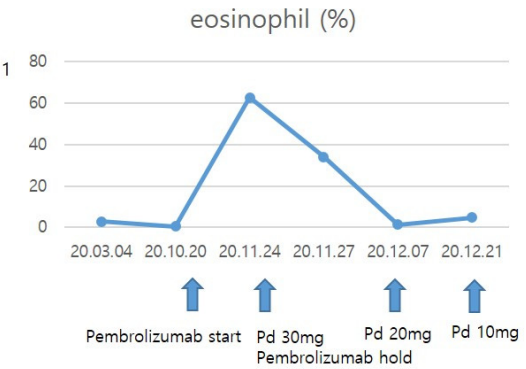

Figure 1. Changes of eosinophilic count
* Prednisolone : Pd

Figure 2

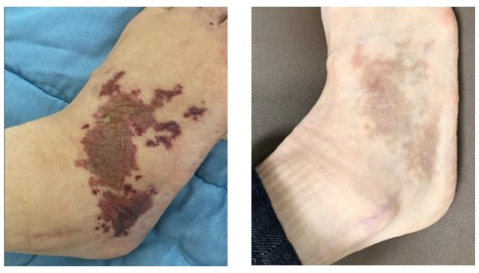

Figure 2. Photos of dorsum of foot.
A : At the time of emergency room, B : 2 months after treatment