# Eosinophilic granulomatosis with polyangitis after COVID-19 vaccination – Case Report

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Despite concerns about the possible side effects of COVID-19 vaccines are generally rare, here is the report suggesting COVID-19 vaccine may be able to trigger de-novo Eosinophilic granulomatosis with polyangitis (EGPA). EGPA is a kind of vasculitis with histological richness of eosinophils, asthma, polyneuropathy, and skin or lung involvement. The patient developed a skin rash and presented with weakness of the upper and lower extremities after the Pfizer COVID-19 vaccination. We believe our case is the first report of a neurological presentation of EGPA following COVID-19 vaccination in Korea and only the third case of EGPA related with COVID-19 vaccination in the world. A 71-year-old woman with a history of diabetes mellitus type 2, visited the emergency department because of right shoulder pain and motor weakness of the right forearm 2 days after receiving the second dose of Pfizer COVID-19 vaccine. The patient also had an erythematous skin lesion and experienced aggravated pain and numbness on both lower arms and legs with numbness. She had an asymmetric upper motor neuron pattern of weakness affecting the upper limbs with the right shoulder and elbow and presenting the foot drop sign without loss of deep tendon reflexes in the lower limbs. Blood tests were remarkable for Leukocytosis ($24.08\times10^9$/L) with hypereosinophilia (43%, absolute count $10.35\times10^9$/L), elevated anti-myeloperoxidase (>135 RU/ml), erythrocyte sedimentation rate (44/h). A skin biopsy of the calf showed perivascular eosinophilia and some lymphocytic infiltration. She was diagnosed with new-onset EGPA based on diagnostic criteria of ACR/EULAR. The patient received intravenous methylprednisolone 1mg/kg (60mg) daily for 3 days and cyclophosphamide 75mg. After the initiation of systemic corticosteroid therapy, we observed depletion of blood eosinophils after the first steroid therapy and slightly regressed neurologic symptoms. But still have neurologic symptoms, we planned to dose up to 180mg for treatment. The symptom improved, the patient was discharged and her neurological symptoms were completely fine at followed-up on an outpatient basis.

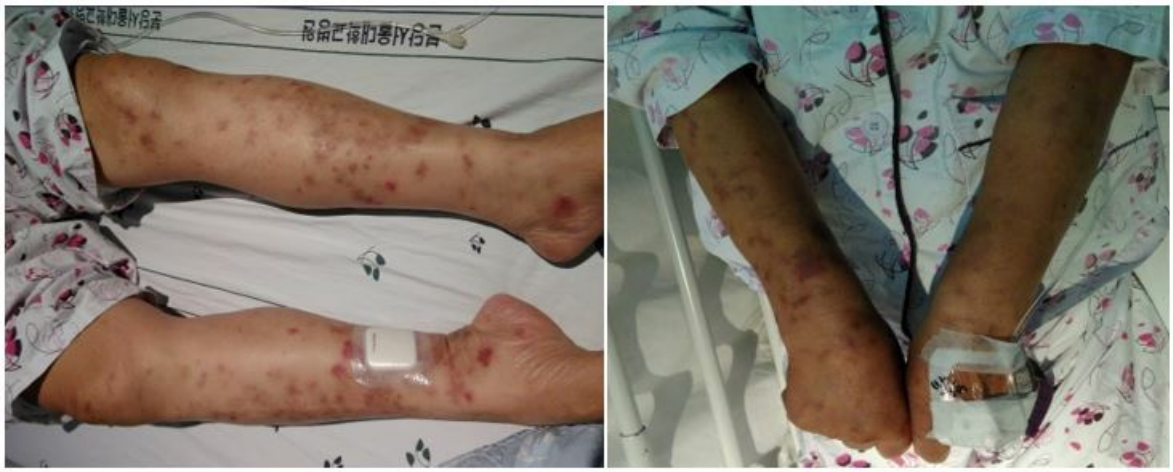

Figure1. The patient's erythematous skin lesion at the initial visit.