CHEST

A 62-Year-Old Women With Persistent Severe Asthma, Skin Rash, and Eosinophilia

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A 62-year-old white woman was admitted with shortness of breath, wheezing, and cough. While in the hospital a generalized pruritic skin rash developed on her trunk and upper and lower extremities. She did not have any fevers, chills, or night sweats. The patient was known to have chronic, difficult-to-control asthma despite being compliant with a treatment regimen consisting of inhaled albuterol, high-dose inhaled steroids, salmeterol, and montelukast. Her medical history was significant for hypertension and gout. She had no family history of asthma. The patient was a life-long nonsmoker and did not drink alcohol. During this hospitalization, she was started on prednisone 40 mg/d po in addition to her home medications.

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Physical Examination

On examination, the patient was a well-developed white woman with conversational dyspnea. Vital signs were as follows: temperature, 37°C; heart rate, 96 beats/min; BP, 146/78 mm Hg; respiratory rate, 26 breaths/min; and oxygen saturation by pulse oximetry, 94% while on 5 L/min oxygen.

Significant physical examination findings were cushingoid facies, bilateral decreased breath sounds with diffuse wheezing, and regular heart sounds with no murmurs. The patient had a generalized maculopapular, non-blanching skin rash on her arms, back, and lower limbs with no associated edema or warmth.

Diagnostic Studies

Pertinent findings were a WBC count of 12,000/μL (52% eosinophils); hemoglobin level, 9.6 g/dL; and platelet count, 237,000/μL. Her erythrocyte sedimentation rate was 32 mm/h and IgE level normal. Serum anti-*Aspergillus* antibody, antinuclear antibodies, and antineutrophil cytoplasmic antibody (ANCA) findings were all negative. Renal function and liver enzymes were within normal limits. Chest CT scan did not reveal any significant parenchymal lung disease. Pulmonary function tests revealed severe obstruction and an FEV_1 of 41% predicted. Skin biopsy was performed (Fig 1).

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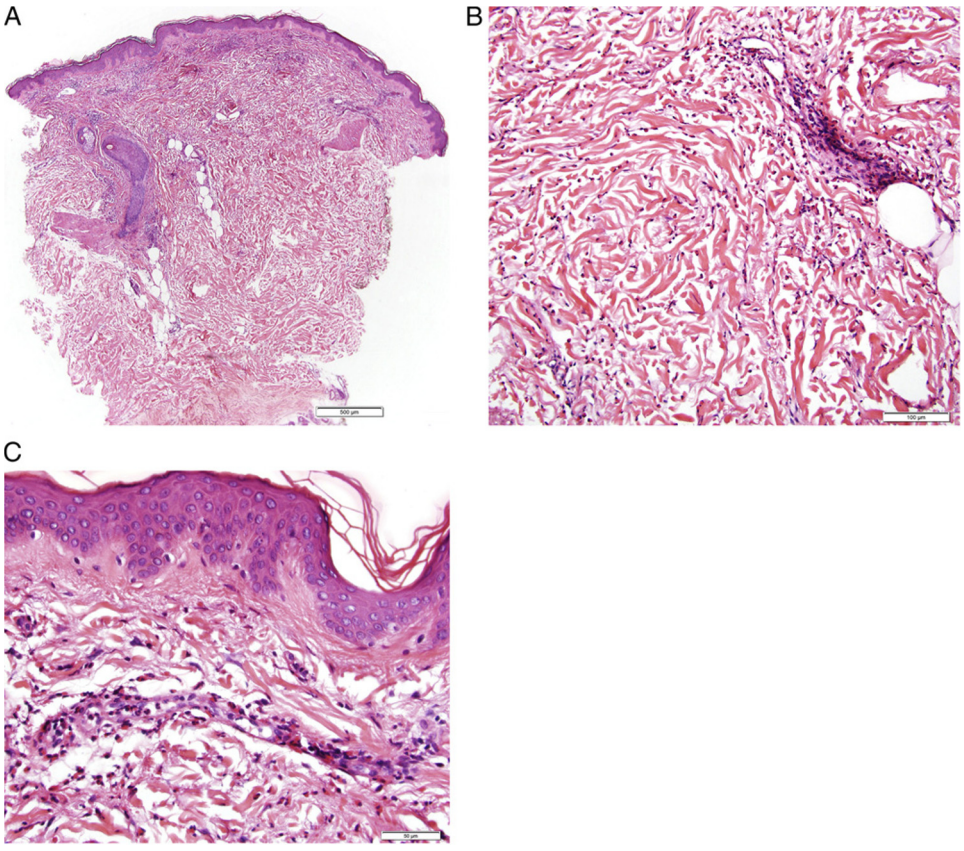

Figure 1 – *A, Low-power magnification shows a punch biopsy sample of skin with a perivascular and interstitial inflammatory infiltrate. Extravascular granulomas are not present. B, An interstitial and perivascular infiltrate almost exclusively comprises eosinophils, recognizable by their granular eosinophilic cytoplasm. C, On high-power magnification of the perivascular eosinophils, endothelial cells appear swollen and slightly damaged by the eosinophils traversing the vascular walls; however, well-developed vasculitis with fibrinoid necrosis is not identified. All stains are hematoxylin and eosin.*

What is the diagnosis?