Eosinophilic Granulomatosis with Polyangiitis (EGPA) in a Patient with Recurrent Sinonasal Obstruction and Asthma with Transient Unilateral Paresthesias

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References

Patient History

- Male in his late 20 presented in 2025 with acute-onset right-sided paresthesias affecting the face, arm and leg.
- PMH of asthma, allergic rhinitis, gastroesophageal reflux disease, chronic sinusitis with nasal polyps, obstructive sleep apnea (OSA), depression and anxiety.
- Described the sensation as an abrupt “zap” without associated weakness, dysarthria, facial asymmetry, or headache; remote history of childhood migraines.
- Family history notable for multiple sclerosis in his mother, raising initial concern for demyelinating disease.
- Recurrent sinonasal congestion refractory to systemic corticosteroids; previously underwent septoplasty with polypectomy.
- Asthma stable on budesonide/formoterol and montelukast, no recent exacerbations.
- Uses APAP for OSA, though previously limited adherence due to nasal obstruction.

Physical Examination

- Well-developed, in no acute distress, with stable vital signs.
- Neurologic exam: intact cranial nerves II–XII, normal strength, coordination, reflexes, and gait; subjective right-sided sensory changes. Speech and affect normal; no bulbar deficits.
- ENT exam: persistent nasal obstruction, septal deviation, and residual polypoid changes; oral cavity, oropharynx, neck, and lymphatics normal.
- Cardiovascular and pulmonary exams unremarkable; abdomen soft, non-tender, no organomegaly.

Diagnostic Workup

- CT head: no hemorrhage or mass effect; extensive paranasal sinus disease noted.
- CTA head/neck: no large vessel occlusion or stenosis.
- MRI brain/cervical spine: no acute ischemia or demyelinating lesions; scattered subcortical T2 FLAIR hyperintensities consistent with chronic migraines.
- Laboratory studies:
  - Persistent eosinophilia >1000/µL (normal 0–500/µL)
  - CBC, CMP, HbA1c, lipid panel, urinalysis unremarkable
  - ANCA testing negative
- Pulmonology: stable asthma on inhaled therapy.
- ENT: residual nasal polyps and septal deviation despite prior surgery.

- Clinical suspicion is critical in patients with:
  - Adult-onset or worsening asthma
  - Chronic rhinosinusitis with nasal polyps
  - Persistent eosinophilia
  - Transient neurologic symptoms, even if ANCA-negative

- Management:
  - Glucocorticoids for mild disease
  - Immunosuppressants (cyclophosphamide, rituximab) for organ-threatening disease
  - Biologics targeting type 2 inflammation:
    - Mepolizumab (anti-IL5) – reduces eosinophilic inflammation, improves asthma control and sinonasal disease, lowers steroid exposure
      Dupilumab (anti-IL4/IL13) – benefits ENT manifestations; requires monitoring for eosinophilic flares

Clinical Course

- Hospital evaluation: excluded cerebrovascular and demyelinating etiologies.
- Neurology attributed transient paresthesias to possible early neurologic involvement of EGPA.
- Supportive care and VTE prophylaxis provided; symptomatic improvement noted prior to discharge.
- Outpatient management: ENT optimization and initiation of dupilumab.
- Follow-up: improved asthma and sleep apnea control; persistent eosinophilia and sinonasal disease managed with targeted biologic therapy.

Discussion

- EGPA is a rare systemic vasculitis with eosinophil-rich granulomatous inflammation affecting small- to medium-sized vessels, commonly associated with asthma and chronic rhinosinusitis with nasal polyps.
- Neurologic involvement can be subtle or transient and may precede systemic organ manifestations.
- Epidemiology: incidence 0.9–2.4/million/year; prevalence 10–14/million; typically adults 30–50 years old.
- ANCA status: only 30–40% of patients are ANCA-positive. ANCA-negative EGPA is dominated by eosinophil-driven tissue inflammation rather than classic vasculitis.
- Pathophysiology: dysregulated interactions among eosinophils, B cells, and T cells; activation of Th1 and Th2 pathways leads to tissue injury.

Key Takeaways

- ANCA-negative EGPA: eosinophil-driven inflammation with prominent asthma and sinonasal disease.
- Refractory asthma, chronic rhinosinusitis with polyps, persistent eosinophilia, and neurologic symptoms should prompt evaluation for EGPA even if ANCA-negative.
- Multidisciplinary care (pulmonology, ENT, rheumatology) is essential for accurate diagnosis and optimal outcomes.
- Targeted biologics can reduce steroid dependence and improve both respiratory and sinonasal outcomes.