Clinical Report

Patient Information

- **Name:** Jessica Miller
- **Date of Birth:** 08/21/1999
- **Age:** 26
- **Gender:** Female
- **Contact Information:** (555) 555-6666, jess.miller@email.com
- **Address:** 246 Riverwalk Path, Anytown, USA

Referring Physician

- Dr. Michael Lee, MD
- Emergency Department Physician
- Anytown General Hospital

Medical Institution

- Anytown Neurology Institute
- **Report Date:** 07/18/2025

Clinical History and Background

Jessica Miller is a 26-year-old paralegal who was seen in the Anytown General Hospital Emergency Department two weeks ago for acute onset of double vision and vertigo. She was evaluated, and an urgent outpatient neurology referral was made. Ms. Miller reports being in her usual excellent state of health prior to this event. However, upon detailed questioning, she does recall a "strange" episode about 18 months ago where the skin on her abdomen and back felt intensely numb and tingly for several weeks. She did not seek medical attention at the time as the sensation resolved completely on its own, and she attributed it to a "pinched nerve." She has no significant past medical history. Her family history is negative for any known neurological or autoimmune disorders. She is a non-smoker and drinks alcohol socially.

Current Symptoms & Patient-Reported Outcomes (PROs)

- **Double Vision (Diplopia):**
    - **Patient's Description:** "It started suddenly. I was looking at my computer screen, and suddenly there were two of everything. It's horizontal, side-by-side, and it gets worse when I look to the left. I have to close one eye to see straight."
    - **Severity:** Severe, making it impossible to read, drive, or watch television comfortably.
    - **Duration:** Began two weeks ago and has been constant.

    - **Clinical Note:** The description of horizontal diplopia that is worse on lateral gaze is highly suggestive of an internuclear ophthalmoplegia (INO), a classic sign of a demyelinating lesion in the brainstem.
- **Vertigo and Imbalance:**
    - **Patient's Description:** "The whole room feels like it's spinning. I feel incredibly unsteady on my feet, like I'm walking on a boat. I have to hold onto walls or furniture to get around my apartment."
    - **Severity:** Severe. She has been unable to work due to the risk of falling and profound dizziness.
    - **Duration:** Began two weeks ago along with the double vision. It has started to slowly improve over the last few days.
    - **Clinical Note:** The acute onset of vertigo and ataxia points to an inflammatory lesion in the cerebellum or its brainstem connections.
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- **Lhermitte's Sign:**
    - **Patient's Description:** "This is a new thing that started last week. Whenever I bend my neck forward to look down at my phone, I get this buzzing, electric shock-like sensation that shoots down my spine and into my legs."
    - **Severity:** Not painful, but startling and unpleasant.
    - **Duration:** Began one week ago.
    - **Clinical Note:** Lhermitte's sign is a classic symptom indicating a lesion (demyelination) in the dorsal columns of the cervical spinal cord.
- **Fatigue:**
    - **Patient's Description:** "I've never been this tired. It's a heavy, crushing fatigue. It feels like my power source has been unplugged. I can sleep for 10 hours and still wake up feeling exhausted."
    - **Severity:** Profound and debilitating.
    - **Duration:** Worsening significantly over the past two weeks with the current attack.
    - **Clinical Note:** MS-related fatigue, or lassitude, is one of the most common and disabling symptoms of the disease, distinct from normal tiredness.

Clinical Findings

- **Vital Signs:**
    - **Blood Pressure:** 115/75 mmHg
    - **Heart Rate:** 76 bpm
    - **Respiratory Rate:** 14 breaths/min
    - **Temperature:** 98.7°F (37.1°C)
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- **Physical Examination (Neurological):**
    - **Cranial Nerves:** Examination of extraocular movements reveals a left internuclear ophthalmoplegia (INO): on attempted right gaze, the left eye fails to adduct fully, and there is coarse nystagmus in the abducting right eye. Convergence is intact. Other cranial nerves are normal.

    - **Motor:** Strength is full (5/5) throughout.
    - **Reflexes:** Deep tendon reflexes are symmetrically brisk (3+) throughout. Toes are downgoing (negative Babinski).
    - **Sensory:** Normal to all modalities today.
    - **Coordination:** Notable gait ataxia. Patient walks with a wide-based stance and is unsteady on tandem gait. Mild dysmetria noted on finger-to-nose testing. Positive Lhermitte's sign on neck flexion.
- **Imaging:**
    - **MRI of the Brain with and without contrast:** Revealed several ovoid T2/FLAIR hyperintense lesions in characteristic periventricular and juxtacortical locations. There is a small, ovoid lesion in the left medial longitudinal fasciculus (MLF) in the brainstem that demonstrates active gadolinium enhancement, correlating perfectly with her clinical signs of an INO. Another enhancing lesion is noted in the cerebellum.
    - **MRI of the Cervical Spine with and without contrast:** Showed two non-enhancing T2 hyperintense lesions in the dorsal aspect of the spinal cord at the C2 and C4 levels.
- **Other Diagnostics:**
    - **Lumbar Puncture and Cerebrospinal Fluid (CSF) Analysis:** Performed to confirm diagnosis. Results showed 12 unique oligoclonal bands present in the CSF that were absent from the serum.

Diagnosis

Ms. Miller's clinical presentation and diagnostic findings fulfill the 2017 McDonald Criteria for a diagnosis of **Relapsing-Remitting Multiple Sclerosis (RRMS)**. She demonstrates:

- **Dissemination in Space:** Two or more clinical attacks affecting different parts of the CNS (prior sensory event, current brainstem/cerebellar event). This is confirmed by MRI lesions in at least two characteristic locations (periventricular, juxtacortical, brainstem, spinal cord).
- **Dissemination in Time:** Two or more clinical attacks. This is confirmed on MRI by the simultaneous presence of both gadolinium-enhancing (active) and non-enhancing (old) lesions. The positive oligoclonal bands in her CSF provide additional supportive evidence.

Treatment Strategy

The treatment approach is to manage the acute relapse and, most importantly, to initiate a long-term disease-modifying therapy (DMT) to prevent future relapses and slow disability progression.

1. **Acute Relapse Management:**

    - A 3-day course of high-dose intravenous methylprednisolone (1000mg per day) will be administered to shorten the duration and severity of her current relapse (diplopia and vertigo).
2. **Long-Term Disease-Modifying Therapy (DMT):**
    - Given her age and the presentation with brainstem and cerebellar involvement, initiating a high-efficacy DMT is strongly recommended. We had an extensive discussion about the different classes of DMTs, including their efficacy, safety profiles, and mode of administration. Ms. Miller expressed a preference for a high-efficacy oral medication. An oral sphingosine 1-phosphate (S1P) receptor modulator, such as ozanimod or ponesimod, will be initiated after completion of baseline safety screening (including bloodwork, ophthalmology exam, and cardiac evaluation).
3. **Symptomatic Management:**
    - **Vestibular Rehabilitation:** An urgent referral will be made to a physical therapist specializing in vestibular rehabilitation to help her brain compensate for the vertigo and improve her balance.
    - **Fatigue:** Education on energy conservation strategies ("the 4 P's": Pacing, Planning, Prioritizing, Positioning) and the benefits of regular, moderate exercise.

Summary and Plan

Ms. Jessica Miller is a 26-year-old female with a new, definitive diagnosis of Relapsing-Remitting Multiple Sclerosis. Her diagnosis is based on a classic clinical history and is unequivocally supported by MRI and CSF findings. She is currently experiencing an active relapse, which we will treat with high-dose corticosteroids. We will work expeditiously to start her on a high-efficacy oral DMT to gain long-term control of her disease. The focus is on aggressive early intervention to preserve her neurological function and ensure she can continue to live a full and productive life.

Follow-up

She will be seen in the clinic in 2 weeks to monitor the clinical response to the steroids and in 4 weeks to initiate her chosen DMT after all baseline safety checks are complete. She will require regular follow-up appointments every 3-6 months and annual surveillance MRIs to monitor for any new disease activity.