

## Stage 1: Initial Case Presentation and Information Gathering

### Step 1: Case Presentation

- **Medical Assistant (MA):** *"Welcome to the diagnostic simulator! Today's case involves a 30-year-old woman presenting with a two-week history of an itchy rash, joint pain, and fatigue. Your goal is to gather her history and perform relevant physical examinations to identify key findings."*
    - **Imaging Provided:** A realistic depiction of a 30-year-old woman sitting in a clean, modern outpatient clinic, appearing slightly fatigued and concerned. She has a neutral yet worried expression, wearing casual clothing, and seated on a standard clinic chair. The setting features a professional environment with soft blue and white tones, a desk with medical instruments in the background, and natural lighting creating a calm and empathetic atmosphere.
    - **Caption:** 'The rash started two weeks ago and hasn't gone away.'
- 

### Step 2: Student Asks Questions

1. **Student:** *"When did the rash first appear?"*
    - **Patient Persona:** *"It started about two weeks ago. It hasn't gone away."*
    - **Imaging Provided:** A photo of the rash showing red, raised patches on the arms and legs.
      - **Caption:** *"Photo of rash taken at initial presentation."*
  2. **Student:** *"Have you noticed anything after the rash resolves?"*
    - **Patient Persona:** *"Yes, the patches leave bruises as they fade."*
    - **Imaging Provided:** A follow-up photo of the rash showing bruising after resolution.
      - **Caption:** *"Photo of resolved rash showing post-lesional bruising."*
  3. **Student:** *"Do you feel stiff or achy in your joints?"*
    - **Patient Persona:** *"Yes, especially in the morning. My wrists and knees ache a lot."*
  4. **Student:** *"Have you been exposed to new medications or foods?"*
    - **Patient Persona:** *"No, nothing new that I can think of."*
- 

### Step 3: Student Requests Physical Examinations

1. **Vitals:**
  - **Medical Assistant (MA):**
    - *"Here are the vital signs: Heart rate: 80/min, Blood pressure: 118/76 mm Hg, Temperature: 37.2°C. No abnormalities noted."*
2. **Skin Examination:**

- **Medical Assistant (MA):**
    - *"Skin examination findings: Red, raised patches on the forearms and legs, some fading with bruising. Slight tenderness but no pain."*
  - **Imaging Provided:** Close-up images of the rash.
    - **Caption:** *"Skin findings during physical examination."*
  - 3. **Musculoskeletal Examination:**
    - **Medical Assistant (MA):**
      - *"Musculoskeletal examination findings: Mild tenderness in wrists and knees, no swelling or warmth. Full range of motion preserved."*
- 

#### Step 4: Student Selects Relevant Information

- **Medical Assistant (MA):** *"Based on the history and examination findings, select the details you think are relevant to the diagnosis."*
  - **Student selects:**
    - Relevant:
      - *"Rash lasting over 24 hours, resolving with bruising."*
      - *"Morning joint pain in wrists and knees."*
      - *"No new exposures."*
    - Trivial:
      - *"Normal blood pressure."*
  - **Medical Assistant (MA):** *"Well done! You've identified the key findings. Let's move to the next step to determine your primary diagnosis."*
- 

### Stage 2: Primary Diagnosis and Reasoning

#### Step 1: Student Selects Primary Diagnosis

- **Medical Assistant (MA):** *"Based on the patient's history and physical findings, what is your primary diagnosis?"*
- **Options:**
  1. *Urticarial Vasculitis (Correct).*
  2. *Chronic Idiopathic Urticaria (Incorrect).*
  3. *Drug-Induced Urticarial Rash (Incorrect).*
- **Student selects:** *Urticarial Vasculitis.*

## Step 2: Student Explains Reasoning

- **Medical Assistant (MA):** *"Please explain why you selected Urticarial Vasculitis as the primary diagnosis."*
  - **Student:**  
*"The rash persists for more than 24 hours and resolves with bruising. Combined with joint pain and fatigue, this strongly suggests vasculitis."*
  - **Medical Assistant (MA):** *"Great reasoning! Let's now explore other possible conditions through differential diagnoses."*
- 

## Stage 3: Differential Diagnoses and Refinement

### Step 1: Student Selects Differentials

- **Medical Assistant (MA):** *"What other conditions could explain the patient's symptoms? Select all that apply."*
  - **Options:**
    1. *Urticarial Vasculitis (Correct).*
    2. *Systemic Lupus Erythematosus (Correct).*
    3. *Hypersensitivity Vasculitis (Correct).*
    4. *Chronic Idiopathic Urticaria (Incorrect).*
  - **Student selects:**
    - *Urticarial Vasculitis.*
    - *Systemic Lupus Erythematosus.*
    - *Hypersensitivity Vasculitis.*
  - **Medical Assistant (MA):** *"Good choices! Let's confirm or refine your diagnosis with some diagnostic tests."*
- 

## Stage 4: Diagnostic Testing and Interpretation

### Step 1: Student Orders Tests

- **Medical Assistant (MA):** *"Which tests would you like to order? Select the most relevant ones."*

- **Test Options:**

1. CBC and ESR (Correct).
2. Complement Levels (Correct).
3. ANA Test (Correct).
4. Skin Biopsy (Correct).
5. Allergy Panel Testing (Incorrect).
6. Imaging (Incorrect).

- **Student orders:**

- *CBC and ESR.*
- *Complement Levels.*
- *ANA Test.*
- *Skin Biopsy.*

## Step 2: Results Returned

- **Medical Assistant (MA):**

- *"Here are the results of the tests you ordered:"*
    1. *CBC and ESR: "Mildly elevated ESR."*
    2. *Complement Levels: "Low C3 and C4."*
    3. *ANA Test: "Positive."*
    4. *Skin Biopsy: "Leukocytoclastic vasculitis with immune deposits."*
  - **Imaging Provided:** Microscopic slide image of the biopsy results.
    - **Caption:** *"Biopsy showing leukocytoclastic vasculitis with immune deposits."*
- 

## Stage 5: Diagnosis Revision and Confirmation

### Step 1: Student Revises Diagnosis

- **Medical Assistant (MA):** *"Based on the test results, do you want to revise your primary diagnosis?"*
- **Student revises:** *Systemic Lupus Erythematosus.*
- **Reasoning:**  
*"Low complement levels and positive ANA suggest systemic autoimmune involvement beyond Urticarial Vasculitis."*

## Step 2: Additional Tests Ordered

- **Student orders additional tests:**
  - *Anti-dsDNA Test: "Negative."*
  - *Anti-Sm Antibodies: "Negative."*

## Step 3: Final Diagnosis

- **Medical Assistant (MA):** *"Do you want to finalize your diagnosis?"*
- **Student confirms:** *Urticarial Vasculitis.*
- **Reasoning:**  
*"Despite initial suspicion of lupus, lack of systemic evidence and biopsy findings confirm Urticarial Vasculitis."*
- **Medical Assistant (MA):** *"Excellent work! You identified the hallmark features and diagnostic tests for Urticarial Vasculitis."*