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The Hidden Sting: A Case of Atypical Scorpion Envenomation in Saudi Arabia

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Abstract: **Background: Scorpion stings are frequent medical emergencies in the Middle East, often presenting with autonomic dysfunction and cardiovascular complications. However, some cases mimic unrelated conditions, leading to diagnostic confusion and delayed intervention.**

Case Presentation: A 42-year-old presented with severe abdominal pain, hypertensive crisis, and tachycardia, initially raising concerns for acute abdomen, hypertensive emergency, or myocardial infarction. A hidden sting site on the patient's foot was later discovered, revealing an underlying scorpion sting-induced autonomic storm. Prompt treatment with scorpion antivenom, prazosin, and supportive care led to full recovery within 48 hours.

Conclusion: This case underscores the diagnostic challenges posed by atypical scorpion envenomation and the importance of a meticulous physical examination. Emergency physicians must maintain a high index of suspicion in endemic regions to ensure timely diagnosis and treatment.

Keywords: **Scorpion envenomation, Androctonus crassicauda, abdominal pain, autonomic storm, Saudi Arabia, prazosin.**

1. INTRODUCTION

Scorpion envenomation is a major public health concern in Saudi Arabia, where species like Androctonus crassicauda and Leiurus quinquestriatus are responsible for severe, sometimes fatal, systemic effects [1,2]. The venom acts primarily on the autonomic nervous system, causing a cascade of cardiovascular, neurological, and metabolic disturbances [3,4].

Most patients present with localized pain, tachycardia, and diaphoresis, but unusual symptoms can lead to misdiagnosis, delaying critical interventions. This report presents a rare case of scorpion envenomation mimicking an acute surgical emergency, emphasizing the need for vigilance in endemic areas.

2. CASE PRESENTATION

Patient History & Initial Presentation

A 42-year-old male, previously healthy, arrived at the emergency department of Royal Commission Hospital, Jubail, Saudi Arabia, complaining of:

Severe, cramping abdominal pain (9/10 intensity)

Profuse sweating and dizziness

Palpitations and restlessness

The patient denied trauma, insect bites, or ingesting contaminated food, leading the team to consider acute medical and surgical emergencies.

Vital Signs on Admission

Blood Pressure: 180/110 mmHg

Heart Rate: 120 bpm

Respiratory Rate: 28 breaths/min

Temperature: 37.8°C

Oxygen Saturation: 98% (room air)

Clinical Examination & Initial Differential Diagnoses

Abdomen: Diffuse tenderness, but no guarding, rigidity, or rebound tenderness

Cardiac: Normal heart sounds, no murmurs

Neurological: No focal deficits

Initial Differential Diagnoses:

1. Acute abdomen (e.g., pancreatitis, bowel ischemia)

2. Hypertensive emergency

3. Acute coronary syndrome (atypical presentation)

4. Pheochromocytoma crisis

Laboratory & Imaging Results

ECG: Sinus tachycardia, no ischemic changes

Troponins: Normal

CBC: Leukocytosis (WBC: 18,000/µL)

Liver & Renal Function Tests: Mildly elevated liver enzymes, normal creatinine

Abdominal Ultrasound & CT Scan: No pathology

Chest X-ray: Normal

With no clear diagnosis, the team was considering further gastrointestinal workup until a sharp-eyed nurse noticed a small puncture wound on the patient's foot.

Diagnosis & Treatment

Key Findings Indicating Scorpion Envenomation:

Unexplained severe hypertension & tachycardia

Generalized abdominal pain without peritoneal signs

Profuse sweating without fever

Management Strategy:

1. IV scorpion antivenom (administered immediately)

2. Prazosin (alpha-blocker) to counteract venom-induced autonomic storm

3. IV fluids and opioid analgesia

4. Continuous cardiac monitoring

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Clinical Improvement:

Within 6 hours: Blood pressure normalized (140/85 mmHg), pain resolved

48-hour hospital stay: No complications

Discharge plan: Patient education on scorpion sting prevention

3. DISCUSSION

This case highlights the atypical nature of scorpion envenomation, which can easily be misdiagnosed as a surgical or cardiovascular emergency.

Key Lessons:

1. Clinical suspicion in endemic areas is crucial—Scorpion stings must be considered even when the patient does not report a sting.

2. Thorough physical examination is key—Identifying the sting site prevented unnecessary invasive interventions.

3. Rapid administration of prazosin & antivenom—Proven to improve survival rates in severe autonomic envenomation.

4. CONCLUSION

Scorpion envenomation can mimic critical medical conditions, causing delays in diagnosis and treatment. This case reinforces the importance of recognizing atypical presentations in endemic areas and ensuring early intervention to prevent life-threatening complications.

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