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*Case Report*

# SYMMETRICAL PERIPHERAL GANGRENE IN THE POSTPARTUM PERIOD: A RARE AND DEVASTATING COMPLICATION

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## ABSTRACT

***Background:*** *Symmetrical Peripheral Gangrene (SPG) is a rare but life-threatening condition marked by ischemic necrosis of extremities without major vessel occlusion. It is often associated with disseminated intravascular coagulation (DIC), sepsis, or vasopressor use.* ***Case Presentation:*** *We report a case of a 35-year-old woman who developed SPG in both feet and the right hand after a spontaneous vaginal delivery at home. She developed fever and abdominal pain one week postpartum and subsequently received intravenous antibiotics and two blood transfusions at a private facility. Shortly after the second transfusion, she developed progressive discoloration and pain in her extremities. She was eventually diagnosed with SPG and underwent a below-knee amputation.* ***Conclusion:*** *This case highlights the importance of early recognition and management of sepsis and coagulopathy in the postpartum period to prevent irreversible complications such as SPG.*

**Keywords:** Symmetrical Peripheral Gangrene, Postpartum Complications, Sepsis, DIC, Amputation

## INTRODUCTION

Symmetrical peripheral gangrene (SPG) is a rare but serious condition characterized by bilateral ischemic damage to distal extremities, typically presenting in patients who exhibit underlying clinical vulnerabilities. Recent discussions have highlighted SPG's association with various precipitating factors, including infectious processes, septic conditions, and conditions marked by disseminated intravascular coagulation (DIC), among other vascular insults (1-3). Notably, the postpartum period is critical for women, often marked by significant physiological and emotional changes, which pose increased risks for severe complications, including SPG (4). The postpartum patient, already susceptible to various forms of sepsis and hemodynamic instability, is particularly vulnerable to developing SPG, as indicated by case reports correlating septic and hemodynamic events with the onset of this condition (5).

In the Pakistani context, maternal health remains a pressing issue, with high maternal morbidity and mortality rates attributed to a lack of postnatal care and inadequate management of postpartum complications (6,7). Studies suggest that many women in Pakistan experience serious health complications post-delivery, but these conditions are often unrecognized due to insufficient routine follow-up care, particularly among those who have home births (6). This lack of routine monitoring can lead to critical conditions going untreated, resulting in rapid deterioration that may culminate in catastrophic outcomes, such as SPG.

The clinical complexities of postpartum SPG necessitate heightened awareness and vigilance among healthcare professionals, particularly in resource-limited settings where access to healthcare may be limited. Early identification and prompt management of the risk factors associated with SPG are essential, and targeted interventions following childbirth could potentially mitigate the profound outcomes seen with this condition. Recent case studies highlight the importance of ongoing education for healthcare providers to recognize the signs of SPG early, thereby improving both diagnosis and treatment pathways (5). Therefore, integrating systemic postpartum evaluations, especially in high-risk areas, is critical in addressing the gaps in maternal healthcare and tackling rare complications such as SPG in the Pakistani healthcare system.

## CASE PRESENTATION

A 35-year-old previously healthy multiparous woman presented to the emergency department of Bahawal Victoria Hospital, Bahawalpur, on April 11, 2025, with complaints of progressive black discoloration of the right hand and both lower limbs. Her past obstetric history included one cesarean section and three spontaneous vaginal deliveries. Her most recent delivery was an unassisted spontaneous vaginal delivery (SVD) at home on February 24, 2025.

Approximately seven days postpartum, she developed lower abdominal pain and febrile illness. These symptoms progressively worsened over the next few days, with associated right lower limb pain. She was admitted to a private healthcare facility where she received intravenous fluids, broad-spectrum antibiotics, and two units of blood transfusion. Within 24 hours of the second transfusion, she developed swelling and discoloration of both feet and the right hand, accompanied by severe pain and paresthesia (Figure 2).

On March 5, she was referred to Bahawal Victoria Hospital, where she was evaluated for suspected autoimmune vasculitis. Initial laboratory workup included an elevated total leukocyte count (28,000/µL), thrombocytopenia (platelet count 77,000/µL), elevated C-reactive protein (239 mg/L), borderline D-dimer (481 ng/mL), mildly deranged coagulation profile (PT/APTT), and a borderline antinuclear antibody (ANA) titer of 1:80. Pus culture from the affected limbs grew Gram-negative rods. Doppler ultrasonography demonstrated evidence of peripheral arterial narrowing suggestive of arteritis; however, no central vessel occlusion was detected. A transthoracic echocardiogram was unremarkable. Peripheral smear showed anisocytosis with thrombocytopenia.

Despite initial conservative management, she re-presented on April 7 with worsening ischemia. A right below-knee amputation (BKA) was performed on April 11 due to demarcated dry gangrene (Figure 1). On examination, she was oriented and hemodynamically stable. The right hand and left forefoot displayed dry gangrenous changes, while the right BKA stump appeared healthy with clean dressings in place. There was no evidence of systemic involvement such as jaundice, central cyanosis, or organ failure.

She denied any history of autoimmune disease, diabetes mellitus, hypertension, asthma, allergies, or substance abuse. Her social

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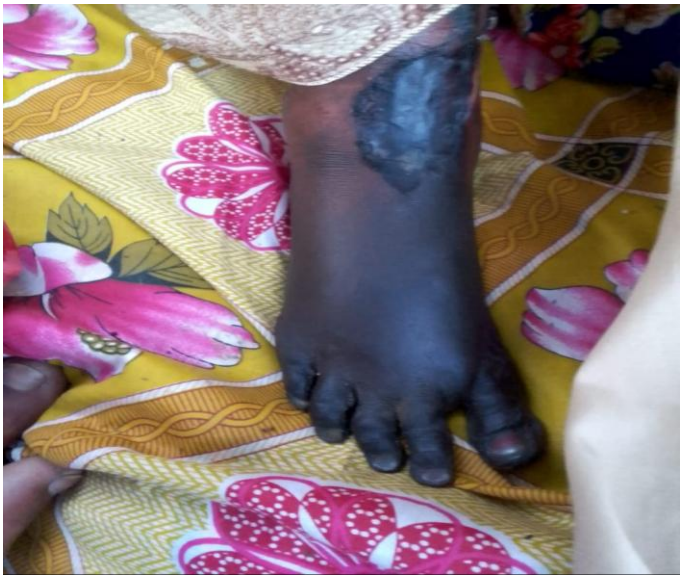
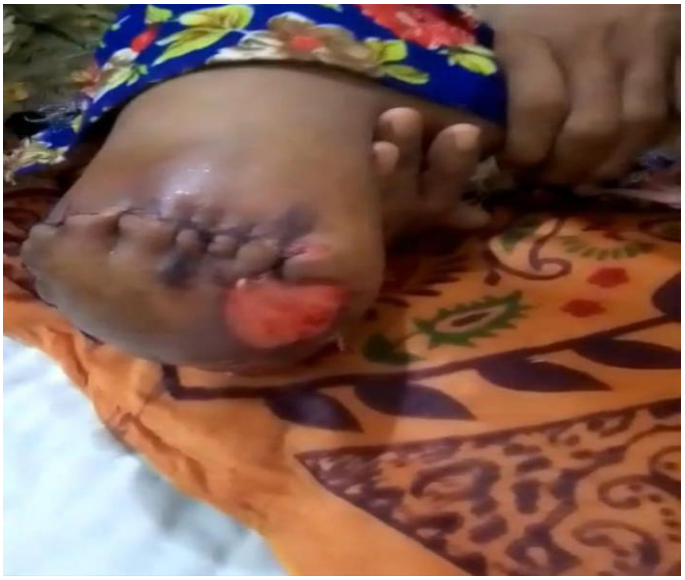
background revealed a lower-middle-income household with no access to institutional perinatal care. Her general health before delivery was unremarkable.

Based on clinical presentation, absence of large-vessel occlusion, laboratory findings, and sepsis following delivery, a diagnosis of Symmetrical Peripheral Gangrene (SPG) secondary to postpartum sepsis and disseminated intravascular coagulation (DIC) was made. The patient's current management plan includes wound care, infection control, physiotherapy, and prosthetic rehabilitation.



**A**



**B**

**Figure 1:** Before (A) and After (B) RT Below Knee Amputation

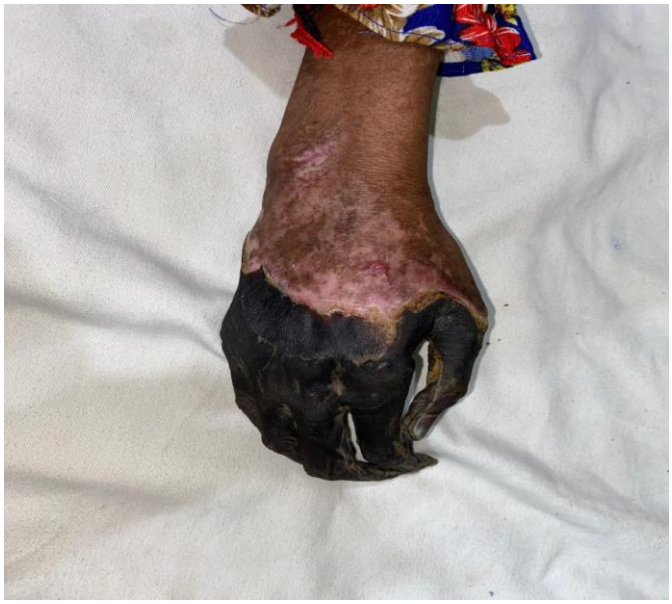


**Figure 2:** Condition of the patient's upper limb

## DISCUSSION

The case of the 35-year-old female patient who presented with symmetrical peripheral gangrene (SPG) following a postpartum course highlights the critical intersection of obstetric complications and severe vascular phenomena. This case is particularly notable as it underscores the rarity and severity of SPG, a condition often associated with disseminated intravascular coagulation (DIC), which manifests as symmetrical ischemic damage to extremities in the absence of large-vessel occlusions (8,9). In the backdrop of postpartum health in Pakistan, where maternal complications can frequently escalate due to inadequate care, timely recognition and management of SPG are paramount to improving outcomes for women in similar circumstances (10,8).

The patient's history of a home delivery is significant, revealing a potential gap in healthcare access often experienced in rural parts of Pakistan, thus leaving women susceptible to complications such as sepsis and subsequent DIC following childbirth (10). Studies illustrate how postpartum infections can predispose women to severe sequelae, correlating strongly with high leukocyte counts indicative of sepsis, as also observed in this case (8,11). Alluding to the clinical progression of sepsis exacerbated by a lack of timely medical intervention, the

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patient's initial symptoms of febrile illness and abdominal pain post-delivery evolved into severe ischemic changes, prompting the necessity for amputation (5).

Notably, the laboratory findings of thrombocytopenia, elevated D-dimer, and prolonged coagulation times in this case strongly support a diagnosis of DIC, which is a contributing factor to the development of SPG in postpartum sepsis (9,3). The presence of Gram-negative rods in culture further indicates polymicrobial sepsis, commonly responsible for rapid deterioration in such patients, thereby complicating clinical management (12,3). Over the past few years, clinical literature has added depth to understanding the pathophysiology of SPG, suggesting a multifactorial etiology where factors such as cardiac failure, coagulopathy, and systemic infection are intertwined (13,14).

In addressing the management strategies, the patient's treatment plan reflects interdisciplinary care, highlighting the need for aggressive infection control measures, adequate wound management, and rehabilitation following amputation. The coordination of services in managing SPG is crucial, as recent studies have emphasized the importance of a comprehensive approach in preventing further complications, particularly in settings with resource constraints, such as those in Pakistan (1,2). Continuous education for healthcare providers about the identification and management of such critical conditions remains vital for improving maternal health outcomes and mitigating the impact of severe complications such as SPG through more proactive postpartum care protocols (15,5).

## CONCLUSION

SPG is a rare and severe complication of the postpartum period. This case underscores the importance of early diagnosis and aggressive treatment of sepsis and DIC to prevent catastrophic outcomes such as gangrene and limb loss.

## PATIENT PERSPECTIVE

"It was terrifying to see my limbs change color and feel pain I couldn't explain. I'm thankful for the care I received later, but I wish the signs were caught earlier.".

## DECLARATIONS

**Data Availability Statement**

All data generated or analysed during the study are included in the manuscript.

**Ethics approval and consent to participate**

Approved by the department Concerned.

**Consent for publication**

Approved

**Funding**

Not applicable

## CONFLICT OF INTEREST

The authors declared an absence of conflict of interest.

## AUTHOR CONTRIBUTION

***MUHAMMAD BILAL YASIN** (PGR)*
*Conception of Study, Development of Research Methodology Design, Study Design, Review of manuscript, final approval of manuscript.*
***LAILA TUL QADAR** (PGR)*
*Manuscript revisions, critical input.*
***MUHAMMAD ADNAN RIAZ** (PGR)*
*Study Design, Review of Literature.*
***MUHAMMAD HAMZA HAFEEZ** (PGR)*
*Manuscript drafting.*
***MUHAMMAD RAHEEL** (PGR)*
*Conception of Study, Final approval of manuscript.*
***FIZA ASHFAQ** (PGR)*
*Data entry and Data analysis, drafting article.*

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