

# Symmetrical Peripheral Gangrene – A Rare Clinical Manifestation of Hodgkin’s Lymphoma

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**ABSTRACT**

Symmetrical peripheral gangrene (SPG) is a cutaneous manifestation of a wide array of infective and noninfective etiological factors and occurs due to hypoxemia, vasoconstriction, primary endothelial damage and/or decreased cardiac output. It is a devastating complication of underlying septicemia and disseminated intravascular coagulation (DIC) with a high mortality rate and commonly requiring amputation of the affected limb in those who survive. We here describe a case that presented with fever, cough, blackish discoloration of fingers and generalized lymphadenopathy. Investigation revealed anemia, leukocytosis, coagulopathy and positive D-dimer test. Fine-needle aspiration cytology (FNAC) showed evidence of Hodgkin’s lymphoma.

**Keywords:** Symmetrical peripheral gangrene, DIC, Hodgkin’s lymphoma

Symmetrical peripheral gangrene (SPG) is a rare clinical condition known for decades. It was first described by Hutchison in year 1891 in a 37-year-old male who developed gangrene in fingers, toes and ear lobule after shock. It manifests as marked coldness, pallor and cyanosis of the acral parts of the body, followed by acral ischemic damage and frank gangrene in two or more extremities without any evidence of obstruction or vasculitis of the relative artery. Rarely, it may be the presenting manifestation of malignancy or heralds its recurrence or metastasis. Here, we are discussing a case of SPG with Hodgkin’s lymphoma.

**CASE REPORT**

A 60-year-old female without any premorbidities presented with the chief complaints of fever for 5 months, cough with sputum and blackish discoloration of the fingers of both hands for 1 month. General examination revealed fever, pallor and dehydration. Pulse was 120/min, regular, normal in volume and

character without radio-radial or radio-femoral delay. All peripheral pulses, including dorsalis pedis, were palpable bilaterally. Respiratory rate was 22/min, regular, thoracoabdominal. Jugular venous pressure (JVP) was normal. Generalized lymphadenopathy was present in cervical, axillary and inguinal areas. Systemic examination revealed splenomegaly and scattered bilateral crepitations in lungs with normal cardiovascular and nervous systems. Local examination of both hands showed blackish discoloration, shrunken and dry index and middle fingers with a definite line of demarcation without any local rise of temperature or ulceration (Figs. 1 and 2). Investigation revealed hemoglobin (Hb) - 10.5 gm%; white blood cell (WBC) count - 28,700/cumm; differential leukocyte count (DLC) - N<sub>89%</sub>L<sub>08%</sub>Eo<sub>1%</sub>Mo<sub>1%</sub>; erythrocyte sedimentation rate (ESR) - 47 in first hour; red blood cell (RBC) - 3.8 million/cm<sup>3</sup>; peripheral blood smear (PBS) - normocytic normochromic with mild anisocytosis, mild poikilocytosis with few schistocytes and helmet cell; leukocytosis with neutrophilia with occasional myeloid precursors, no hemoparasite; platelet count 1.2 lacs; hepatitis B surface antigen (HBsAg) and anti-hepatitis C virus (HCV) - nonreactive; antinuclear autoantibodies (ANA) - negative; random blood sugar (RBS) - 109 mg/100 mL; renal function test (RFT) - within normal limits (WNL); urine R/E - WNL; blood and urine culture - sterile; prothrombin time (PT)/partial thromboplastin time (PTT) - prolonged; D-dimer - positive; lipid profile - normal; liver function test (LFT) - WNL. Chest X-ray P/A view showed

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**Figure 1.** Symmetrical peripheral gangrene of index and middle fingers of both hands (Palmar aspect).



**Figure 2.** Symmetrical peripheral gangrene of index and middle fingers of both hands (Dorsal aspect).

bilateral lung infiltrates and bilateral pleural effusion. Ultrasonography (USG) showed bilateral pleural effusion with moderate ascites. Fine-needle aspiration cytology (FNAC) of the cervical lymph node revealed cytomorphologically lymphoproliferative disorders suggestive of Hodgkin's lymphoma.

Final diagnosis - Hodgkin's lymphoma with septicemia and SPG.

## DISCUSSION

Symmetrical peripheral gangrene is characterized by symmetrical distal ischemic damage at  $\geq 2$  sites with no major vascular occlusive disease. It is a rare syndrome associated with a multitude of underlying medical problems including various infections, myocardial infarction, congestive heart failure, hypersplenism, dog bite, Hodgkin's lymphoma, polymyalgia rheumatica, etc. It can also occur as a complication of malignant diseases, ergotism or protein deficiency. Existing data show that disseminated intravascular coagulation (DIC) might be associated with up to 85% of cases of SPG.

This rare syndrome is typically sudden in onset, symmetrical in nature and predominantly affects the upper extremities, and progresses rapidly to acral gangrene. The lower extremities, tip of the nose, borders

of the ears, genitalia and scalp are the other areas of predilection. There is no evidence of occlusion of large vessels or vasculitis with intact distal pulses. This makes the pathogenesis behind its causation difficult to explain with the current understanding of its pathology.

The pathogenesis of SPG may involve the Schwartzman reaction, release of bacterial endotoxin and platelet plugging in peripheral arterioles on account of vascular collapse and DIC. DIC seems the most common final pathway of the pathogenesis of SPG because of high association between DIC and SPG. The paradoxical syndrome seen in DIC is of consumptive coagulopathy with abnormal uncontrollable hemorrhages and intravascular clotting at microscopic level. It would explain the acral gangrenous changes of SPG, the lack of vasculitis in small vessels and the lack of thrombi in large vessels. Histopathological examination of amputated parts often reveals thrombi in the small vessels with sparing of large vessels without any features of vasculitis or inflammatory cell infiltrates on walls of the blood vessels.

In our case, the cause of gangrene was not clear. Sepsis seems to be responsible for SPG in this case. Sepsis and the underlying malignancy might have caused some degree of abrupt hypofibrinogenemia. The low level of fibrinogen might be associated with inappropriate microscopic clot formation. The patient was given treatment for septicemia, other supportive care and was planned for further management which was declined and lost to follow-up.

## CONCLUSION

Symmetrical peripheral gangrene is a cause of significant morbidity and mortality, often requiring multiple limb amputations. DIC is a common finding in SPG and is likely the final common event that results in the characteristic clinical features. No treatment is effective. Early recognition, awareness of the condition and vigorous therapy of sepsis and DIC may prevent progression of gangrene and lead to a dramatic fall in high mortality rate associated with this syndrome. We present this case because of rare manifestation of Hodgkin's lymphoma with SPG.

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### SUGGESTED READING

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### Home-based Physical Activity to Decrease Cancer Fatigue

A meta-analysis published in *Medicine & Science in Sports & Exercise* suggests that low to moderate physical activity done at home can help reduce fatigue in cancer survivors whose treatment is complete. Eleven studies involving 1,066 cancer survivors, mostly women with breast cancer history, were included in the meta-analysis. Home-based physical activity was found to improve fatigue for up to 9 months following the intervention, especially when it was assisted by frequent counseling. Researchers noted that adherence to the intervention was high and self-reported physical activity appeared to increase with time.

The researchers concluded that home-based physical activity associated with frequent counseling serves as an effective intervention to relieve fatigue in cancer survivors... (*Medscape, February 2, 2022*)

### Ten Percent of People Who Died of Omicron were Vaccinated, Shows Study

Director General of the ICMR, Dr Balram Bhargava, said that only 10% deaths have been reported among fully vaccinated individuals who were hospitalized with infection due to the Omicron variant, compared with around 22% deaths among the unvaccinated or partially-vaccinated individuals, as he cited the results of a study. The study is based on data from the national clinical registry of COVID-19. Comorbidities continue to be a cause for concern as most people who succumbed to COVID-19 had at least one underlying disease. Nearly 91% of the fully vaccinated and 83% of the unvaccinated or partially-vaccinated people who died due to COVID had at least one comorbidity, according to the data. About 3% to 4% of the people infected with Omicron required hospital admission, said NITI Aayog member (health) Dr VK Paul... (*ET Healthworld – TNN, February 4, 2022*)

### No Difference in COVID-19 Disease Progression Based on Trimester of Pregnancy

Among pregnant people with COVID-19, disease severity does not seem to be different on the basis of trimester of diagnosis, suggests a prospective, single-center cohort study.

The study included over 1,300 pregnant patients with asymptomatic or mild COVID-19. Investigators noted no differences in disease progression by trimester of infection. There were no significant differences in maternal or neonatal outcomes as well, based on the trimester of diagnosis. It was noted that moderate, severe or critical disease developed in 10% of pregnant patients who were asymptomatic initially. Hospitalization within 2 weeks of COVID-19 diagnosis was most common in the third trimester, and 90% of the admissions were associated with obstetric indications. After excluding obstetric indications, no difference was observed in hospital admissions by trimester. The findings were presented at the Society for Maternal-Fetal Medicine virtual meeting... (*Medpage Today, February 3, 2022*)

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