

Symmetric Peripheral Gangrene in a Nigerian Woman: A Rare Complication of Unsafe Abortion

Abstract

Unsafe abortion is a major cause of maternal morbidity and mortality worldwide; the phenomenon is commoner in the developing countries like Nigeria where there is a dearth of qualified personnel, medical knowledge and funds for procurement of safe abortion. We presented a (G2P1+0) with a diagnosis of symmetric peripheral gangrene (SPG) complicating unsafe abortion. We choose to sensitize clinicians to the possibility of SPG, furthermore, clinicians are advised to prevent occurrence by managing all septic conditions aggressively.

Keywords: Gangrene; Abortion

Case Report

Volume 2 Issue 6 - 2015

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Received: August 31, 2015 | **Published:** September 10, 2015

Abbreviations: DIC: Disseminated Intravascular Coagulopathy; SIRS: Systemic Inflammatory Response Syndrome (SIRS); SPG: Symmetrical Peripheral Gangrene; WHO: World Health Organization

Background

Unsafe abortion is a major cause of maternal morbidity and mortality worldwide; the phenomenon is commoner in the developing countries like Nigeria where there is a dearth of qualified personnel, medical knowledge and funds for procurement of safe abortion. World Health Organization (WHO) defines unsafe abortion as termination of an unwanted pregnancy by an unskilled person in a substandard medical environment or both [1]. The countries most affected with high maternal mortality and morbidity are those with restrictive abortion laws and are mostly developing countries. An estimated 21.6 million unsafe abortions took place worldwide in 2008, almost all in developing countries [1]. Despite the hue and cry about unsafe abortion, it still remains a common practice in developing countries including sub-Saharan Africa [1,2]. The burden of complications of unsafe abortion is enormous both to the health system and the society, particularly, in respect of the economic and social considerations. The minimum annual estimated cost of providing post abortion care in the developing world was put at \$341million [3]. Complications such as haemorrhage, shock, uterine gas gangrene, disseminated intravascular coagulopathy leading to hysterectomy or death has been reported in the literature [2,4]. However, sudden onset of symmetrical peripheral gangrene (SPG) following unsafe abortion is a rare clinical condition; this calls for reportage.

Case Report

AK was a 25-year old G₂P₁⁺⁰ (1 alive) now P₁⁺¹ Nigerian female teacher admitted at 9 weeks gestational age with a five day history of generalised body weakness, fever, lower abdominal pain and vomiting following ingestion of a liquid native herb (abortifacient). Symptoms progressively worsened culminating

in difficulty with breathing for which she went to a peripheral hospital where she was subsequently referred to our facility. She however, bled virginally on the second day of admission in our facility. She attained menarche at age 16 years, she did not use any method of contraception; she menstruated for 3-5 days in regular 30 day menstrual cycles.

She was married in a monogamous family setting, but did not desire this index pregnancy. She was however, not on any medication; past and family history was not of significance in her present condition, her haemoglobin genotype was AC. The findings on physical examination at presentation were: acutely ill-looking young lady in hypotensive state, blood pressure was between 60-90/40-50mmHg. She was on oxygen via nasal prongs, pale (packed cell volume 22%), dehydrated with cold clammy extremities; and she had mild pedal oedema. She was tachypneic (54/minute) with a pulse rate of 100/minute.

Multiple purpuric patches were seen all over the body; however, they were worse over the distal forearm and dorsal surface of the right hand (Figure 1). She however developed dry gangrene of the toes (Figure 2), 48 hours after the purpuric patches were formed; the dry gangrene affected the little, ring, middle and index finger of the right hand, there was symmetrical dry gangrene of the feet involving the first, second, third, fourth and fifth digits of the feet, the posterior tibia and dorsalis-pedis artery pulsations were present. A diagnosis of dry gangrene involving the digits of both feet most probably from septic emboli following an unsafe abortion was made.

She had a perineal pad soaked with blood, cervix was posterior, firm in consistency, os was patulous, gloved fingers were stained with altered blood. A size 16 Foley's catheter was in situ draining concentrated urine. Resuscitation was achieved using intravenous fluids, dopamine infusion, and three units of blood, she was commenced on anticoagulation: subcutaneous enoxaparin, intravenous antibiotics and haematinics. However, medications were not regular because of lack of funds. Full blood

count result are PCV of 22%, leucocytosis of 33.62×10^9 cells/ μ l with predominant neutrophilia, platelet count of 37×10^9 cells/ μ l; prothrombin time was prolonged (-26.1sec, INR-3.34); random blood sugar was 42mg%, this was subsequently corrected; pregnancy test was positive; abdomino-pelvic ultrasound scan showed that uterus was bulky, with a gestational sac (CRL-2.8cm=9W4D), a foetal pole, however, there was no cardiac activity. Cervical os was closed; features were in keeping with a missed abortion. Following adequate resuscitation, a manual vacuum aspiration of the products of conception was performed. About 100ml of product of conception was evacuated from the uterus.

Management was hampered by lack of funds as patient could not carry out all the investigations requested for her care (e.g. Blood culture, Doppler study of the limbs, D dimer assay, protein C and S assay, Diagnostic Arteriography) and pay for amputation of the affected parts.



Figure 1: Gangrene of the second, third, fourth and fifth digit of the right hand.



Figure 2: Dry gangrene of all the toes of both feet with definite line of Demarcation.

Discussion

Symmetrical peripheral gangrene though rare is a scourging complication of septicemia; most cases of SPG are associated

with disseminated intravascular coagulation (DIC) [5]. It is a well-documented syndrome first described in 1891 by Hutchinson. It comprises symmetrical gangrene of the acral regions. It is devoid of large vessel occlusion or vasculitis [6].

The syndrome characteristically begins as erythematous or purpurial lesions. In this patient, purpurial patches were seen all over the body, however worse over the right lateral malleoli, distal forearm and dorsal surface of the right hand. Gangrene is said to develop typically within 24-48 hours of appearance of the herald lesion [7]; gangrene developed 48 hours after the purpurial patches in this patient, in conformity with the documented facts in the literature. Gangrene may result from a number of conditions like chronic diseases, post-surgical, post-traumatic, or develop spontaneously; it could be dry, moist, or gas gangrene; dry gangrene is a condition that results when one or more arteries become obstructed. In this type of gangrene, the tissue slowly dies, due to receiving little or no blood supply, but does not become infected [7]. Gangrene of the uterus is one of the rare complications of unsafe abortion; gas gangrene following cases of unsafe abortion [8] is documented in literature, however, dry gangrene of the extremities following abortion as observed in the index patient is novel in Nigeria, if not the continent, Africa.

Disseminated intravascular coagulopathy (DIC) following an unsafe abortion with associated uncontrolled sepsis is inevitable. Septic abortion triggers off the cascade for systemic inflammatory response syndrome (SIRS), sepsis syndrome, septic shock and finally multi organ damage. DIC and SPG are found in about 85% of cases [9] as observed in the index patient.

Some authors believe DIC leads to ischaemia and peripheral gangrene by the formation of intravascular clots in the terminal vessels [6] while others relate it to spasm of the peripheral vessels [10] other factors in the septic patient like endothelial damage, use of inotropic drugs, micro embolism and severe hypotension are likely to be major players in the pathophysiology of SPG [11].

Septicaemia is the most common cause of SPG in the clinical circumstance, other causes include shock, malignancy, drugs and DIC [12] also incriminated are bacteria, viral infections and plasmodium falciparum infection [13]. However, the offending organism in our patient could not be identified due to unavailability of fund for the required investigation.

SPG has no clear cut treatment; the aim is to treat underlying or accompanying conditions like DIC, this we are able to do for our patient, however, we could not take other necessary actions because the patient declined further treatments and opted for discharge from the hospital. Cases of SPG have been treated successfully with a combination of vasodilators and anticoagulants [14], acetylsalicylic acid [15], leukapheresis and plasmapheresis [16] and systemic blockade [10]. Treatment basically entails protection and nursing care of the appendages, debridement, skin grafts, and partial or total amputation which is performed later; physiotherapy and other efforts at restoring functionally should not be overlooked. She categorically rejected amputation of the affected digits due to cultural belief, ignorant of the fact that the dead digits could be infected and this could lead to death. We have to work harder as health professionals in popularizing SPG amongst ourselves and the populace at large to sensitize all to the inherent dangers in suboptimal infection care.

Conclusion

In this report, we described the occurrence of symmetric peripheral gangrene, a rare clinical entity. In this particular case the antecedent was ingestion of local herb (abortifacient). We choose to sensitize clinicians to the possibility of SPG, furthermore, clinicians are advised to prevent occurrence by managing all septic conditions aggressively.

Acknowledgement

We acknowledged the patient discussed above for granting us the privilege to write her story.

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