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THE VENOMOUS DELIVERY: A CASE REPORT OF SNAKE BITE IN PREGNANCY WITH PRECIPITATE LABOUR AND DISSEMINATED INTRAVASCULAR COAGULATION MANAGED IN A LOW RESOURCE SETTING.

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SUMMARY

Background: **Snakebite in pregnancy, though rare, poses significant risks to both mother and fetus, especially in low-resource settings where delayed presentation and limited access to antivenom are common.**
Case presentation: **A 33-year-old para 2+0 gravida 4 at gestation 38 weeks, was admitted after sustaining a snake bite on the left leg. She received first aid and responded well but 6 hours later went into spontaneous and precipitate labour delivering a live female infant. She however developed massive postpartum hemorrhage due to disseminated intravascular coagulation. Massive transfusion protocol, tranexamic acid, uterotonics and ionotropic support in the acute care unit instituted. After 24 hours of admission in the unit, she was stable and discharged home.**
Conclusion: **This case highlights the diagnostic and therapeutic challenges posed by snakebite envenomation in pregnancy and emphasizes the importance of prompt, coordinated care.**
Keywords: **Snake bite, pregnancy, Disseminated intravascular coagulation.**

INTRODUCTION

Snakebite envenomation is a neglected tropical condition with high morbidity and mortality, particularly in sub-Saharan Africa. The World Health Organization (WHO) estimates that over 2.7 million people suffer venomous bites annually {1}. This incidence is higher in rural arid and semi-arid areas like Samburu Kenya where the 5-year prevalence is 2.2 % {2}. In pregnancy, snakebite poses a threat to both the mother and fetus through mechanisms such as coagulopathy, hemorrhage, and preterm labor. Management is further complicated by physiological changes in pregnancy and concerns regarding the safety of antivenom {3,4}. The pathophysiology and management of snake bite in pregnancy is especially not well understood because many obstetricians hardly encounter this in their course of practice.

CASE PRESENTATION

S.A 33 years old, para 3+ 0 gravida 4 at 38 weeks of pregnancy presented to Lodwar County referral Hospital having been bitten by a snake 6 hours prior while farming. She sustained a bite on the medial aspect of the left leg by a black snake that slithered away, was not killed and was therefore not presented to the hospital. She had first aid administered to her in form of an improvised tourniquet and rushed to the hospital. On arrival to the hospital, she was in fair general condition, blood pressure 115/69mmhg, Pulse-130 beats per minute and SpO_2 -98% with a Glasgow coma scale of 15/15. Her airway was patent, tachypneic (21 breath/minute), afebrile, mildly diaphoretic, with palpitations and overt anxiety. Her left lower limb was swollen, discolored and tender at the site of the alleged bite but there were no obvious fang marks. She had normal reflexes and muscle tone. The significant laboratory findings are summarized below:

Table 1: Preliminary laboratory/radiological investigations

TEST	FINDING	REFERENCE RANGE
Full hemogram	White blood cells-13.34 Haemoglobin-8.1gdl Platelets-97	4.00-10.0 11.0-16.5 150-450
Coagulation profile	INR-2.27 Prothrombin time-2.27	0.8-1.3 11.0-14.0

Liver function test	SGOT-58U/L SGPT-67U/L	9-45U/L 7-56U/L
Renal function test	Creatinine-84 μmol/l	45-90μmol/l
Random glucose	Random blood sugar 5.6mmol/l	3.2-7.8mmol/L
Obstetric ultrasound scan	Single live intrauterine fetus weighing 3150 grams with no features of placental abruptio. Biophysical profile-8/8	Normal finding

INR-International normalized ratio *SGOT-Aspartate aminotransferase*

SGPT-Alanine aminotransferase

The patient was given parenteral antibiotics, intravenous analgesics, 200mg of intravenous hydrocortisone and polyvalent anti-snake venom 10 ml in 250 ml of Normal saline. The site of inoculation was ridden with soil debris and traditional herbs. It was irrigated with copious amounts of water and cleaned with povidone iodine solution. Tetanus toxoid was not given since the patient was on schedule with her immunization in antenatal clinic. Six hours after admission though the patient started having lower abdominal pain characteristic of labor and a pelvic assessment confirmed latent phase of labour at 4cm.The labour was allowed to progress but barely 4 hours later, the patient had an urge to bear down and precipitously delivered a live female infant APGAR score of 8,9,10 and a birth weight of 3150 grams. She sustained a first-degree perineal tear and a 3cm actively bleeding cervical laceration at 12 O'clock both of which were primarily repaired after examination under anesthesia. Uterine massage was done and the uterine tone confirmed as satisfactory.10 international units of oxytocin,1 gram of tranexamic acid and 600 μg of per rectal misoprostol were prophylactically administered. Hemostasis was momentarily achieved. However, after 20 minutes, brisk and fresh bleeding ensued and persisted. Reexamination revealed no active bleeding from either vaginal or cervical tears. There was active significant bleeding from the cervical os amounting to more than 1200mls. Uterine balloon tamponade was inserted and left in situ for 6 hours. An impression of postpartum hemorrhage due to disseminated intravascular coagulation was made. The patient was transferred to the acute care unit where she received multidisciplinary care from obstetrics, critical care and emergency medicine. She was kept warm, started on

ionotropic support, given 2 litres of normal saline ,3 units of packed red blood cells and three units of fresh frozen plasma over a period of 24 hours. Broad spectrum antibiotics and anti-inflammatories were given. Three more doses of antisnake venom were infused intravenously each after every 6 hours. Neither sedation nor intubation were necessary. The bleeding tapered gradually over 12 hours and the uterine balloon tamponade was removed. She was observed for a total of 24 hours after which she was stepped down from the unit, observed in the general ward for a further two days and then released home. Her postnatal clinic review in two weeks and at six weeks were unremarkable.

DISCUSSION

Snakebite during pregnancy is rare but potentially fatal. Physiological changes of pregnancy such as increased plasma volume and altered immunity may exacerbate envenomation effects {3}. Despite no visible fang marks, envenomation was evident from lab findings and the clinical course.

Snakebite-related maternal-fetal complications include miscarriage, intrauterine fetal demise, preterm labor, and abruptio placentae {5}. The spontaneous onset of labor may have been stress-induced or incidental. The precipitate nature of the labour could have been occasioned by venom phospholipases and proteases that induce overt smooth muscle contractions. The development of postpartum hemorrhage was likely due to disseminated intravascular coagulopathy, a known complication of snake envenomation {6}. Fetal compromise when it occurs however is often due to acute fetal hypoxia from placental abruption as a result of systemic envenomation (5).

Prompt and appropriate first aid at the community level can significantly influence outcomes. WHO recommends avoiding harmful practices such as tourniquets or incisions and instead advocate for immobilization, reassurance, and rapid transport to a medical facility {7,8}. In this case, the improvised tourniquet may have caused more harm than benefit. Antivenom remains the cornerstone of treatment and, when indicated, should not be withheld due to pregnancy. Available evidence supports the safety of antivenom in pregnancy, although hypersensitivity reactions remain a concern {9}.

One of the limitations of this paper is that we were not able to identify the snake type and this introduced uncertainty into the assessed efficacy of the treatment, and the ability to generalize the management approach for future cases

Conclusion

Snakebite in pregnancy presents unique diagnostic and therapeutic challenges. This case demonstrates that with prompt antivenom administration, multidisciplinary management, and access to critical care, favorable maternal and neonatal outcomes are achievable.

Consent for publication

Informed consent for publication was obtained from the patient.

Conflict of interest

The authors declare no conflicts of interest.

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Credit statement

All the authors played a critical role in the management of the case and acquisition of data. Daniel Simiyu Wambaya and Kiptoo G. Jerotich drafted and critically revised the case report.

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