Snake Bite in the third trimester of pregnancy: A rare case report and review of literature

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Abstract:
Snake bites in pregnancy result in high fetal wastage and may cause maternal mortality. This poses a challenge to public health care systems. Little is known about snake bites during pregnancy and only a few cases have been reported in the literature. The obstetrical consequences are severe and the severity depends on the degree of envenomation and the time elapsed before starting treatment. Perhaps the most difficult aspect of dealing with this clinical situation is that care must be rendered simultaneously to two patients with a complex interrelationship. We are presenting report a case of a 3rd gravida of 30 weeks gestation who presented with snake bite on lateral aspect of left ankle who was managed in intensive care unit of Pravara Institute of Medical Sciences with Anti snake venom and discharged on 8th day with no feto-maternal compromise. In follow up patient delivered healthy male child with no complications.

Key words: Anti snake venom, Pregnancy, Intensive care unit, Per-vaginal

Introduction:
Venomous snake bites in pregnancy result in high fetal wastage and may cause maternal mortality. This poses a challenge to public health care systems. Snakebite during pregnancy appears to be uncommon.¹ In a large series of hospital admissions due to snake bite reported from South Africa, pregnant women accounted for 0.4% of cases, while in a similar study from India they accounted for 1% of cases.²³ Venomous snake bite in the pregnant female may lead to a poor outcome in both the mother and the fetus. Previous literature reviews found overall fetal deaths ranging from 38% to 43% ⁴⁵ with maternal deaths of approximately 10% after a venomous snake bite. Antivenoms, which may be used in the treatment of the envenomed expectant mother, can cause anaphylactic reactions that may have an adverse effect on the mother or fetus.⁶ The case presented below is done to demonstrate successful management of snake bite in pregnancy with good outcomes for both mother and fetus.

Case report:
A twenty four year old gravida 3, para 1, live 1, lady from Rahata Taluka, Dist. Ahmednagar was admitted to Pravara Rural Hospital, Loni casualty with history of snake bite at 12.30 pm on 19th Jan. 2014 on lateral aspect of left foot followed by nausea and vomiting. History given by patient herself and was brought by mother. However there was no history available of the type or color of the snake. The patient reported with symptoms of giddiness, dyspnoea and vomiting, drooping of eye lids. There was no history of pain in abdomen, P/V bleeding and P/V leaking. The patient’s initial vital signs were blood pressure: 110/60 mm of Hg, pulse rate: 108 beats/min,
respiratory rate: 20 breaths/min, temperature: 36.5°C. Patient was conscious but confused.

During physical examination, fang marks were observed at lateral aspect of left ankle at the lateral border of the fifth metatarsal bone. The patient presented with edema (approximately 10*10 cm in dimension) on her bitten foot. Physical examination presented no other characteristic features. Hemodynamically, patient was stable. Per abdomen examination revealed 30 weeks uterine size. Fetal heart sounds were heard. Then obstetric history revealed she was married since 3 years and was 3rd time gravid with one live healthy child and one spontaneous abortion. The past medical history was non contributory with no history of chronic family illnesses. Education level was elementary in nature. An obstetrics and gynecology consultation was obtained on the patient’s pregnancy and the condition of the fetus. Obstetric ultrasonographic results were reported to be normal.

In the systemic examination, left lower limb was swollen from mid thigh to sole. Locally the area was found to be grossly swollen with reddening and hotness of surrounding skin and marked tenderness on movement for which Inj. Adrenaline 0.1 ml subcutaneous given.

The patient was admitted in ICU (equivalent to High Dependency Unit) of Pravara Rural Hospital, reviewed by both the intensive care unit and surgical teams. Oxygen was administered via non rebreather mask at a rate of 6L, intravenous fluids normal saline alternating with dextrose 5% 3litres in 24 hours. Treatment prescribed was as follows; Ceftriaxone 1 gram I.V BD daily, heparin infusion 10000iu thrice daily, metronidazole 500mg intravenously thrice daily, hydrocortisone 100mg thrice daily, and diclofenac 75 mg intramuscular thrice daily for one week. There was no need for endotracheal intubation as patient neurologic status was noted to be improving.

Investigations on admission done: Hb 13.3gm/dl, PC 51000, PT 17.1 sec, INR 1.36, APTT 41.9 sec. Serum urea 43.8mg/dl, creatinine 2.6mg/dl. Liver function tests were within normal limits.

2. No e/o DVT
3. There is increased echogenicity and thickness of subcutaneous soft tissue of lower limb s/o subcutaneous soft tissue oedema.
4. Enlarged left inguinal lymph nodes noted

The patient was assumed to be phase II according to present clinical findings and five vials of antivenom were administered to the patient, immobilization of the foot was provided and proper elevation ensured. When antivenom administered patient developed rashes all over body, patient developed tachycardia (pulse 130/min), and blood pressure dropped to 70/40 mm Hg. ASV infusion stopped, inj. hydrocort and inj. Avil given and ASV administration continued after 4 hrs. Investigations repeated from 1st to 6th day of admission and improvement of the patient observed meticulously as mentioned in Table 1:
Table 1: Investigations repeated from 1\textsuperscript{st} to 6\textsuperscript{th} day of admission and improvement of the patient

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Day</th>
<th>Haemoglobin (mg/dl)</th>
<th>TLC (total count)</th>
<th>PC (platlet count)</th>
<th>Serum Urea (mg/dl)</th>
<th>Serum Creatinine (mg/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1\textsuperscript{st}</td>
<td>13</td>
<td>35,400</td>
<td>59,000</td>
<td>46</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>2\textsuperscript{nd}</td>
<td>12</td>
<td>29,270</td>
<td>76,000</td>
<td>72</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>3\textsuperscript{rd}</td>
<td>11.6</td>
<td>21,000</td>
<td>01 lac</td>
<td>171</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>4\textsuperscript{th}</td>
<td>10.4</td>
<td>17,500</td>
<td>1.5 lac</td>
<td>86</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>5\textsuperscript{th}</td>
<td>10.6</td>
<td>12,000</td>
<td>2.6 lac</td>
<td>72</td>
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<td>6\textsuperscript{th}</td>
<td>11</td>
<td>11,000</td>
<td>2.6 lac</td>
<td>36</td>
<td>1.4</td>
</tr>
</tbody>
</table>

During the patient’s hospitalization, blood count was monitored on a daily basis and values of coagulation parameters were presented as normal throughout the follow up period. During this period, the snakebite wound healed and the patient was discharged after seven days and scheduled for follow-up visits. The patient attended the follow-up clinic on a regular basis at ANC clinic and the wound had completely healed by the second week. The patient gave birth to a healthy baby boy by spontaneous vaginal delivery at around expected date. The baby’s Apgar scores were 8 and 10 with normal physical examination and normal blood tests. The baby is three months old now. There were no medical problems in her follow-up.

**Discussion:**

Snake bites are very few in the third trimester of pregnancy because most of the women are homebound, particularly during their last trimester avoiding exposure to outdoor activities,\textsuperscript{7} although snakebites occur throughout the world, envenoming snakebites are thought to pose a particularly important yet largely neglected threat to public health. This is especially true in rural areas of tropical and subtropical countries where snakebites are common but where there is limited access to health care and to antivenoms.\textsuperscript{8} However, obstetric consequences are severe and adverse for both maternal and fetal health. Most fatalities occur in developing countries where snakes are abundant and rapid transportation and intensive medical care services are lacking.\textsuperscript{8}

The commonest adverse obstetrical events occurring due to snake bite are vaginal bleeding, IUD, Premature labour and threatened Abortion. The causes for fetal loss is mainly because of delayed treatment with ASV and several possible mechanisms like-

1. Direct effect of venom on the fetus
2. Fetal hypoxia due to maternal shock
3. Venom induced uterine contractions
4. Placental bleeding due to coagulopathy.\textsuperscript{9}

Zugaib et al reported that the toxin present in the snake venom is a coagulative active agent. This toxin even in small amounts reaches placental circulation at the deciduas placentary cleavage zone and starts its dissociation.\textsuperscript{10,11} Studies from South Africa, India and Sri Lanka, snake bite in pregnancy accounts for 0.4-1.8 % of hospitalized snake bite victims. Previous literature found overall fetal deaths ranging from 38-
43% with maternal deaths accounting to 10% after a venomous snake bite. Conclusion: Although rare, venomous bites and stings during pregnancy may have a significant adverse effect on the fetus as well as the mother. Snake bites in pregnancy result in high fetal wastage and may cause maternal mortality. However, the more recent literature seems to show an improvement in both the maternal and the fetal outcomes. The more recent case reports suggest the overall rate of fetal loss is now around 20% and maternal case-fatality rate is about 4% to 5%.

References: