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RESEARCH ARTICLE

VENOMOUS ENCOUNTER: A CASE REPORT ON SNAKE BITE DURING FULL-TERM GESTATION WITH DELAYED MANIFESTATION

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Abstract

Background: Snake bite is uncommon among pregnant women, that too presentation in third trimester with late presentation, with envenomation is rare. Knowledge about the toxic symptoms and management of snake bite poisoning is very low due the rarity of cases.
Case report: Presenting a case of 26 year old female, Primigravida with Premature Rupture of Membranes with Snake bite in Acute Kidney Injury with Disseminate Intravascular Coagulopathy. Appropriate care and management led to the survival of both mother and baby.
Discussion: In India, 216 snake species exist, 52 are venomous. Elapids like cobras, kraits, vipers, and sea snakes pose threats. Venom potency varies with seasons and snake color. Envenomation symptoms include local pain, systemic effects, and coagulopathy. Pregnancy complicates management; antivenom and careful monitoring are vital.
Conclusion: Acute kidney injury with disseminated intravascular coagulopathy arising from systemic poisoning due to snake bite in pregnancy is difficult and challenging. Obstetric and medical line of treatment depends on the severity of envenomation, gestational age at presentation, timing, duration and quality of treatment.

Introduction:-

Snake bite poisoning is a common acute life-threatening condition. More than 200,000 snake bites are reported in the India. Around 35,000 to 50,000 people die each year. Majority of snake bite individuals seek traditional healers for treatment and many deaths occur before reaching hospital[1]. Snake venom lead to local tissue necrosis, affect the coagulation pathway at various steps, impair organ function, or act at the neuromuscular junction to cause paralysis[2]. Coagulopathy due to snake bite is the most life threatening complication with poor maternal and perinatal outcome [3].Snake bite in pregnancy may lead to teratogenesis and spontaneous miscarriages, antepartum hemorrhage, preterm labour and delivery, intrauterine fetal death and neonatal death [5]. Late presentation in pregnancy with features of systemic envenomation like acute kidney injury and disseminated intravascular coagulopathy makes the case interesting and being reported here.

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Case Discription:

A 26 years old Primigravida admitted to labour room with complains of labour pain and leaky PV , with 39 weeks + 1 day of gestation, she was a booked case, with prior scans (dating + anamoly + follow up scans) were all normal , all her gestational days were normal. Non diabetic , non hypertensive , no co morbidities and no history of previous hospitalization or any treatment . Her bowel and bladder activities are normal , sleep cycles were normal, appetite good with no habits. On examination patient was well built , well nourished , conscious , cooperative and well oriented . Her vitals were within normal limits (temperature afebrile, PR – 86 bpm, BP – 100/80 mmHg, SPO2 – 98 % on Room Air). Respiratory system , Cardiovascular system and Central Nervous System were within normal limits and Per Abdomen findings were Uterus Term size , Longitudinal Lie , Cephalic presentation, Fetal Heart Sounds – 146 bpm. PV –OS admits 2 fingers , minimally effaced, membranes absent.

A review history was taken after 5 hours after hospitalisation. Patient gave history of snake bite on her left leg 5 days ago, around 11 : 30 PM, at her residence . Bite mark was on dorsum of left leg near base of great toe. On history bleeding was present near bite site , not progressive. A non progressive swelling noticed till left ankle joint . No any other symptoms or signs were noted. She was treated by local traditional methods . Two days post snake bite, patient noticed decreased urine output and discolouration of urine that is from dark yellowish to black / cola coloured urine. She did not visit hospital for the symptoms she developed.

On knowing the history of the patient , immediate snake bite management protocolos were initiated . Whole blood clotting time (WBCT) was done in plane vacutainer, red caped container which was clotted (approximately 10 minutes). Meanwhile she was catheterized , 200ml of cola coloured urine collected in the urine bag. On examination OS 2 cm dilated, membranes absent , 30 % effaced and no bleeding per vagina. She was in latent labour. Her blood investigations were sent and showed

Haemogloin – 9.9 gm%
Total WBC Count - 112900 cells/cmm
Platelet count -66000 cells/cmm
Liver Function Test
Total Bilirubin - 2.2 mg/dl (direct – 1mg/dl, indirect – 1.2 mg/dl)
SGOT - 33 IU/L
SGPT - 11 IU/L
ALP - 121 IU/L
Renal Function Test
Blood Urea - 68mg/dl
Serum Creatinine - 6.33mg/dl
Uric Acid - 9.1 mg/dl
Coagulation profile
APTT - 28.4 seconds
PT - > 300 seconds

Whole blood clotting time was assessed every 6^{th} hourly which clotted every 8 to 10 minutes. Patient was planned for Emeregency LSCS due to Cephalo Pelvic Disproportion (CPD). She was posted for surgery , prior C – Section she was transfused with 1 packed red blood cell , 1 fresh frozen plasma and 1 random platelet donar. On table she was transfused with 3 Fresh frozen plasma and 3 random donar platelets.

Under General Anaesthesia ,patient was intubated . Pfannenstiel incision was made over suprapubic region .Uterus was identified , low transverse uterine incision was made. A male baby was extracted , weighing 2.8 kg , cried immediately after birth, APGAR score was 7/10 and 9/10 at 1^{st} and 5^{th} minute respectively. Baby was further resuscitated by Pediatrician and was taken for Neonatal Intensive Care Unit (NICU) for evaluation of consequences associated with snake bite poisoning. Uterus was closed with removal of clots and abdominal wall was closed in layers . Approximately 1000ml of blood was lost . Vaginal clots were removed , misoprostol tablets were inserted per rectal to prevent Postpartum Hemorrhage. Vitals of the patient were within normal limits (PR 110 bpm, BP 104 / 60 mmHg , SPO2 97 % ON mechanical ventilation.) 30 minutes post C Section patient was shifted to MICU (MEDICAL INTENSIVE CARE UNIT) for dialysis as patient was having oliguric Acute Kidney Injury . Patient was under sedation, Hemodialysis Catheter was placed through femoral and one episode of dialysis was done for 4 hours. Post dialysis she gained conscious and was oriented . 20 vials of Anti Snake Venom (ASV) was given . She was closely monitored, her urine colourprogressely improved from cola coloured urine to straw yellow coloured

urine by post op day 3(POD 3).Urine output gradually increased with minimal fluid input (Urine output for 24 hours as follows POD 0 – 250ML , POD 1- 650ML, POD 2- 1100ML , POD 5 – 2300ML).
Blood investigations were as following:-
Serum creatinine – 4.35mg/dl
Blood Urea - 115.6 mg/dl
Haemoglobin - 7.2gm%
Total WBC count - 14800 cells/cmm
Platelet Count - 178000 cells/cmm
PT - 16.4 seconds
INR - 1.17

She was further transfused with 2 packed red blood cells , one before and the other one during the second dialysis which was done on post op day 1, followed by she was taken for dialysis on every alternate day, 5 settings of dialysis was done. During her post op care she had history of loose stools (Meropenum induced) , which responded to tablet AD-100 and probiotics. No complaints regarding breathing difficulties or any bleeding manifestations . Sutures were removed on POD 8 . She was discharged on POD 9 , a femoral catheter was removed and Internal Jugular Vein Haemodialysis Catheter was secured .
Blood investigations before discharge were :-
Haemoglobin - 8.7 gm%
Total WBC Count - 11700 cell/cmm
Platelet count - 474000 cells/cmm
Liver Function Test
SGOT - 44 IU/L
SGPT - 18 IU/L
ALP - 94 IU/L
Total Bilirubin - 0.5 mg/dl
Renal Function Test
Serum Creatinine - 5.7 mg/dl
Blood Urea - 151 mg/dl
Ultrasonography showed bilateral Grade 1 Nephropathy .

On discharge, patient was advised to follow up weekly twice for dialysis for 2 weeks . On 2nd week of follow up, urine output returned to normal (around 2000ml/ day) and serum creatine to normal (1.4 mg/dl).

Discussion:-

In India there about approximate 216 species of snakes and of them 52 are poisonus. Poisonous snakes in India are Elapidae includes common cobra (Najanaja), king cobra and common krait (Bungaruscaeruleus), Viperidae includes Russell's viper, Echiscarinatus (saw scaled or carpet viper), and pit viper and hydrophiidae (sea snakes). Secretion of venom varies according to seasons in snakes. Snakes are more poisonus during summer compared to winter. Similarly, darker the snake, more is the venom it secretes. 10% of venom is injected on single bite with all snakes except Russel viper which injects 75% of venom on single bite leading to highest morbidity and mortality in India [1].

Differentiating poisonus and non poisonus snakes is very difficult. Colour of snakes can mislead as many non poisonus snakes appears like poisonus.. Viper venom contains main factor i.eProcoagulant enzymes , which stimulates blood clotting and consumption of fibrinogen, causing disseminated intravascular coagulation (DIC)[1,2] .

Highly complex mixtures of enzymes are present in snake venom like , polypeptides, glycoproteins, and other constituents. Viperids and Elapids are more venomus which leads to progressive local pain, soft tissue swelling and ecchymosis . Systemic features like generalized fatigue , nausea , altered taste sensations, perioral numbness, tachycardia or bradycardia, hypotension , muscle fasciculations , pulmonary edema , renal impairment and bleeding manifestations [2].

During pregnancy , less cases of snake bite envenomations are noted but complications associated with it very severe . More cases of snake bite poisoning during pregnancy are seen in developing countries when compared to developed countries . Hemodynamic stabilization is the main step in management of snake bite poisoning .

Snakebite in pregnancy reported maternal case-fatality of 4.2% and fetal death rate in the range of 43%–58% when there is envenomation [3] .

Enzymes present in Elapidae and Viperidae venoms can deplete clotting factors and causes consumptive coagulopathy and also enzymes can damage the endothelial lining of blood vessels and cause local and systemic hemorrhage . The most common manifestations of snake envenomation are local erythema, swelling, and tenderness at the puncture site, occurring in up to 90% of patients [4].

The maternal and obstetric complications noted are hemorrhage, preterm delivery , hypotension, disseminated intravascular coagulopathy, hypovolemic or septic shock and anemia. Similarly tachycardia, prematurity, neonatal jaundice, anemia and sepsis are complications associated with fetus and neonates . Prompt and early detection of above mentioned complications can prevent morbidity and mortality. Monitoring and observing response to treatment, use of ASV, early referral for specialist care, safe delivery and following the guidelines in the management of snake bite will reduce complications and deaths [5].

In India, 10ml of polyvalent antisnake venom is available in lyophilized powder for reconstitution. One ml of this antiserum can neutralize a certain amount of venom namely 0.6mg of Cobra venom, 0.6mg of Russell's viper, 0.45mg of Common Krait and 0.45mg of Saw-scaled viper. Titration of dose is done based on the normalization of clinical and laboratory findings [6].

Anaphylactic reactions with ASV are main drawback. Teratogenesis , fetal growth retardation or mutations are associated with snake bite poisoning. Most researchers recommend that the therapy in pregnant patients should be same as in nonpregnant. Nifedipine can be given for tocolysis but magnesium sulphate is contraindicated (neurotoxic) [7].

ASV administration are done for patient with snake bite poisoning when there is progression of the injury, worsening local injury, clinically important coagulation abnormalities or systemic effects. Management of snake bite includes cleaning of wound, tetanoustoxid injection or tetatnous immunoglobulin for non immunized patients , marking the edge of the swelling and recording the time of observation and measuring the circumference of extremity every 30 min. If there is no proximal progression of local injury on the extremity and no coagulopathy after 12 hours of clinical observation and serial laboratory examination, then patient can be discharged with follow up instructions[8].

Conclusion:-

Snake bite in pregnancy is uncommon and snake bite poisoning in third trimester with late presentation is very rare. With effective treatment protocol with the available resources and extra care in saving both mother and healthy baby with no further adverse outcomes make the case report unique. Sticking to the basic treatment guidelines and knowing allergic or adverse outcomes of any particular treatment in pregnancy could avoid add on complications.

Consent

Written informed consent was obtained from the patient attenders for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Written informed consent for publication of their clinical details and/or clinical images was obtained from the patient attenders.

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Conflict of interest

The authors declare having no conflicts of interest for this article.

References:-

1. Kalantri, Shriprakash. (2022). Snakebite. In: Ed. Sandhya Kamat. API Textbook of Medicine. 12 th edition. Volume 2. CBS Publishers Snakebite. In: API Textbook of Medicine. Ed. Sandhya Kamat. 12 th edition. Volume 2. CBS Publishers, Delhi.pp. 2082-2087
2. VENOMOUS SNAKEBITES. In: Kasper DLD, Fauci ASA, Hauser SLS, Longo DLD, Jameson JLJ, Loscalzo JJ, editors. Harrison's Manual of Medicine.21th edition McGraw Hill Inc.; 2022.pp. 3596-3601
3. Lankoande Martin[1,*], Norbet N.W. Djiguemde[2], Georges Mion[3], Soleymane Oubian[1], Mikael W. Zoundi[2], PapougnezamboBonkoungou[4].Snakebite Envenomation During a Third Trimester of Pregnancy : A Case Report, Maternal-Fetal Medicine: July 2020 – Volume 2 – Issue 3 – pp. 189- 192.
4. Wang, MichelleÂÂ J., et al. “Obstetric Management of Copperhead Snake Envenomation in Pregnancy: A Case Report.” Case Reports in Acute Medicine, vol. 2, no. 2, July 2019, pp. 35-41.
5. Adewole AA, Ugiagbe OA, Onile TG, Joseph GA, Kassim OD, Medupin PF, Adeniran AS. Snake bite in third trimesterof pregnancy with systemic envenomation and delivery of a live baby in a low resource setting: A case report. Case Rep Womens Health. 2017 Oct 16;16: 14-17.
6. David A, Padmaja. Snake bite in pregnancy-case report and review of literature.Int J Pregn& Chi Birth. 2017;2 (1):21-23.
7. Mittal R , Dhiman B, Sood N, Sood S. A rare case of pregnancy complicated by snake bite Int J RepordContraceptObstetGynecol 2016;5:243-5.
8. Sebe A, Satar S, Acikalin A. Snakebite during pregnancy. Hum ExpToxicol. 2005 Jul;24(7):341-5.
9. Agha RA, Franchi T, Sohrabi C, Mathew G, Kerwan A; SCARE Group. The SCARE 2020 Guideline: Updating Consensus Surgical CAseREport (SCARE) Guidelines. Int J Surg. 2020 Dec;84:226-230. doi: 10.1016/j.ijsu.2020.10.034. Epub 2020 Nov 9. PMID: 33181358.