ABSTRACT

Leptospirosis in pregnancy is often underdiagnosed and not commonly reported due to its unusual appearance and rarity. It looks like HELLP syndrome, obstetric cholestasis, viral hepatitis & pregnancy-related acute fatty liver. Miscarriages in the first trimester, stillbirths, and neonatal leptospirosis are serious complications that necessitate a high degree of concern, heightened sensitivity, and prompt diagnosis and treatment. We have one such incidence of leptospirosis in a COVID-19 positive pregnant female. A 21-year-old Primigravida with a predisposition of serious anaemia & thrombocytopenia, presented with fever, haematemesis, malena and sore throat at 38 weeks and 2 days gestation, during the COVID-19 pandemic. She had pallor, oedema, and haematuria on catheterization, rest all investigations were within normal limits. Proteinuria, haemolysis, low platelets, and elevated bilirubin were discovered during the investigation. Due to the lack of hypertension and elevated transaminases, the working diagnosis was atypical
haemolysis, low platelets (HELLP) syndrome. The patient was tested for COVID-19 RT-PCR, came out to be positive and the fever spikes continued, leading to further investigations for Dengue, Malaria, Scrub Typhus, and Leptospirosis due to the ongoing Covid-19 pandemic. After the EIA (Enzyme Immunonassay) IgM antibody (confirmatory for Leptospirosis) tested positive for Leptospirosis, the decision to start Doxycycline was made. Meanwhile, the patient's CTG (Cardio tocograph) revealed signs of foetal distress, and a decision for an emergency LSCS was taken (Lower Segment Caesarean Section). The histology of the placenta after the section revealed normal findings. Doxycycline was initiated with a neonatal feeding regimen that was acceptable. On day two of life, the newborn had no indications of inherited leptospirosis and was removed from Neonatal Intensive Care. Within one week, the patient's symptoms had disappeared, and her biochemistry had went back to normal within 2 weeks.

Keywords: Leptospirosis; pregnancy; HELLP: Haemolysis and Elevated Liver Enzymes and Low Platelets; COVID-19: Novel coronavirus disease 2019.

1. INTRODUCTION

Leptospirosis is a tropical endemic infection that is also one of the world's most common zoonotic infections [1]. Leptospirosis in pregnancy is frequently underdiagnosed and underreported due to its unique appearance and prevalence. It looks like HELLP syndrome, viral hepatitis, obstetric cholestasis, and pregnancy-related acute fatty liver. Early abortions, infant deaths, and infantile leptospirosis are all serious consequences, and it requires a high level of suspicion, as well as enhanced awareness, early detection, and management [2]. A case of leptospirosis was described in a 21-year-old woman who was 38 weeks and 2 days pregnant. What makes this case of even more paramount significance, is its incidence during the COVID-19 pandemic which lead to numerous differentials from the highly competent Obstetricians and Physicians invested round the clock in this case. She initially presented with fever, sore throat, haematemesis, haematuria and recent travel history from Yavatmal, Maharashtra which was a containment zone during the Pandemic. Due to a haemolysis image with proteinuria, the first workup suggested a diagnosis of atypical haemolysis, low platelets (HELLP) syndrome (normal liver tests), however subsequent leptospirosis lgM was positive. She was given Azithromycin by mouth (as we were apprehensive to use Doxycycline at the pregnant time) and delivered through Caesarean section at 38 weeks and 4 days. We reviewed the literature and addressed the probable differentials that can present similarly to leptospirosis in terms of appearance. Because it is an uncommon infectious condition, the researchers assume it might be of great instructional value to obstetricians.

2. CASE REPORT

At 38 weeks and 2 days of gestation, a 21-year-old Primigravida with no known co-morbidities arrived to the casualty of a remote tertiary care center with a referral from a peripheral hospital with a history of haematemesis after meals, malena, and sore throat. This was linked to a reduction in urine output. The aforementioned Centre had already diagnosed her with acute anaemia and thrombocytopenia. One month prior to presenting with the complaints, her haemoglobin (Hb) was 9.6 gm/dl and her platelet count was 2,10,000/cumm. After that, it fell to 6.4gm/dl and 54,000/cumm. She was given two units of PRC, after which her Hb was 6.6gm/dl and her PLT was 1,00,000/cumm. She had no prior medical or surgical history, no family medical history of liver illness, and no drugs or traditional supplements. Prior to admission, she had travelled from Yavatmal, Maharashtra which is a containment district due to the Covid-19 pandemic. There was no confusion or lethargy found during the assessment. The patient did not appear to be toxic. During her stay at our center, she became febrile and had high-grade febrile episodes (temperature ranging 99-102 degree Farenheit). She was immediately sent to our center's Isolation unit's presumptive ward for a Corona virus RT-PCR test. Her blood pressure was normal when she was admitted. She was pale and had bilateral pitting type of pedal oedema. Hepatosplenomegaly and right hypochondriac pain were not seen. The cervical os was closed, according to a speculum examination. Hb was 7 gm/dL, platelets were 45,000/cumm, and total white blood cells (TLC) were 6500/cumm with an abnormal APTT/PT. Aspartate transaminase (AST) is 26 U/L, alanine transaminase is 14 U/L, and gamma-glutamyl transferase is 238 U/L, with a total bilirubin of
1.8 mg/dl and direct bilirubin of 1.2 mg/dl, and a creatinine of 2.3 mg/dl, indicating acute renal injury. Vitamin B12 was 195 pg/ml, which also showed a megaloblastic picture. She was catheterized right away, and frank haematuria was discovered. Her Hb was 9.8 gm/dl after 2 units of PRC and 5 units of Platelets were transfused, and her Platelets were 96,000/cumm. Scrub Typhus, Dengue Fever, and Malaria Fever Profiles were all negative. IgM for Leptospirosits. The patient had constant fever spikes (about 103 and 104 degrees Fahrenheit on days 5 and 6), therefore on day 6, a 5-day course of injectable Doxycycline and Vitamin C was started, with the recommendation to stop breastfeeding for two weeks. For probable Listeria, the baby was given IV ampicillin and gentamicin. Breastfeeding was stopped for 5 days while the mother was on injectable Doxycycline, then resumed. Her liver function tests and a kidney panel both came back normal. She had no manifestations of congenital leptospirosis & was released at 1,800 grams on day 11 of her life.

3. DISCUSSION

In the literature, just a few cases of leptospirosis in pregnancy have been described. Infections in humans can be caught directly through contaminated animal urine or tissue, particularly that of rats, or secondarily through polluted water, soil, or vegetation [1]. Leptospirosis can be minor or severe, ranging from a viral infection to a multisystemic disease. Fever, headache, chills, abdominal pain, diarrhoea, anorexia, vomiting, lymphadenopathy, rash, and hepatosplenomegaly are some of the symptoms [3]. Icteric leptospirosis, also called as Weil's syndrome, is a kind of leptospirosis that causes liver, renal, and vascular failure. It affects 5-10% of people and has a 20-40% fatality rate [3]. IgM ELISA, IgM/immunoglobulin G (IgG) ELISA, and real-time DNA polymerase chain reaction of blood, urine & CSF are some of the laboratory procedures used to detect for leptospirosis (CSF). A single titre of 1:200 IgM antibodies or a four-fold increase in microscopic agglutination testing titre collected during the 1st and 4th week of sickness, or body fluids or tissue cultures of leptospires are used to make a diagnosis of leptospirosis [4]. These patients have responded well to medicines such as penicillin G, streptomycin, chloramphenicol, doxycycline and erythromycin [4]. According to the WHO, depending on the stage of pregnancy, leptospirosis can cause abortion, foetal death, stillbirth, or congenital leptospirosis in women [5]. In view of prenatal consequences, Yechiel et al [6] investigated at 15 previously reported cases of leptospirosis in pregnancy, finding that 8 women had miscarriages, 2 had healthy newborns, & 4 had active leptospirosis. Leptospirosis is conveyed by breast milk and can
cause newborn leptospirosis, according to Puliyath et al. [3]. As a result, moms who suspect postpartum leptospirosis should withhold breastfeeding immediately & get their newborn tested for Leptospirosis. Pregnancy-related liver sickness, like acute fatty liver of pregnancy, HELLP, and obstetric cholestasis, can be distinguished from non-pregnancy-related liver sickness, such as gallstones, hepatitis, or other infections. HELLP syndrome and AFLP are potential differentials for abdominal pain presenting with jaundice, hemolysis, increased transaminases & coagulation disturbances in the third trimester [2]. Both illnesses have comparable clinical and laboratory symptoms, making correct diagnosis difficult [7]. In AFLP, hypoglycemia will be present in AFLP, and a liver biopsy is recommended to exclude the diagnosis. Given the patient's travel and hygiene history, an infection is quite likely, and leptospirosis must be ruled out. Finally, because to its unusual and non-specific clinical appearance, leptospirosis is rare & harder to identify. For minimising serious consequences of early abortions, stillbirths, and neonatal leptospirosis, its critical to have a high index of suspicion, provide early detection, and care. Because leptospirosis is a rare infection that might mimic other illnesses such as HELLP or acute fatty liver in pregnancy, a high degree of doubt is required for an early recognition. Early abortions, stillbirths, premature labour, and newborn leptospirosis are all complications of leptospirosis that obstetricians and gynaecologists should be aware of. In the management of leptospirosis, multidisciplinary treatment involving nephrologists, haematologists, gastro physicians, obstetricians, & the infectious disease team is required, particularly in patients with severe leptospirosis or Weil's syndrome.

However, there are certain drawbacks. The diagnosis of Leptospirosis in the current article has been only on the basis of IgM positivity, but it has two disadvantages. One, it can be false positive and second, once positive it can persist for years. So a diagnosis of acute infection, just on the basis of IgM can be misleading [8].

There is a significant overlap between the clinical findings in novel coronavirus disease 2019 (COVID-19) and hemolysis, elevated liver enzymes, and low platelets syndrome (HELLP). So the clinical picture described may have been due to COVID-19 itself [9].

4. CONCLUSION

CTG (Cardio tocograph) revealed signs of foetal distress, and a decision for an emergency LSCS was taken (Lower Segment Caesarean Section). The histology of the placenta after the section revealed normal findings. Doxycycline was initiated with a neonatal feeding regimen that was acceptable. On day two of life, the newborn had no indications of inherited leptospirosis and was removed from Neonatal Intensive Care. Within one week, the patient's symptoms had disappeared, and her biochemistry had went back to normal within 2 weeks.

CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


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