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SUCCESSFUL FETOMATERNAL OUTCOME IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSIS WITH LUPUS NEPHRITIS FLARE WITH MONONEURITIS MULTIPLEX DELIVERED IN EARLY PRETERM AT A TERTIARY CARE CENTRE – A CASE REPORT

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ABSTRACT Systemic Lupus Erythematosus (SLE) poses significant challenges during pregnancy, necessitating careful management to ensure maternal and fetal safety. This case report describes a 24-year-old pregnant woman with Systemic Lupus Erythematosus (SLE) who developed a flare of lupus nephritis and mononeuritis multiplex at 26 weeks of gestation, aggressive management with hydroxychloroquine, tacrolimus, corticosteroids, and hemodialysis wasdone. At 32 weeks, her renal function further deteriorated, necessitating the termination of pregnancy to prevent further maternal morbidity. Post-termination, the patient's condition improved with cyclophosphamide and high-dose glucocorticoid therapy. This case underscores the critical need for a multidisciplinary approach and early intervention in managing high-risk pregnancies complicated by severe SLE manifestations.

KEYWORDS : Systemic Lupus Erythematosus (SLE), Lupus Nephritis, Mononeuritis Multiplex, Pregnancy Complications, Multidisciplinary Management, Immunosuppressive Therapy

INTRODUCTION

Systemic Lupus Erythematosis (SLE) is a chronic autoimmune disease characterized by inflammation and damage to various body tissues [1]. Managing SLE during pregnancy is particularly challenging for both mother and fetus due to the potential for disease flares and the teratogenic risks associated with many immunosuppressive medications. Lupus nephritis, a serious complication of SLE involving kidney inflammation, affects up to 60% of SLE patients and often requires aggressive treatment to prevent renal failure, with pregnancy exacerbating its complications and increasing risks of abortions, preeclampsia, preterm birth, and fetal growth restriction. Mononeuritis multiplex, another severe SLE manifestation, causes damage to multiple peripheral nerves, leading to significant muscular and locomotor disability. Managing a pregnant patient with both lupus nephritis and mononeuritis multiplex necessitates a multidisciplinary approach to ensure both maternal and fetal safety while controlling disease activity.

Case Presentation

We report the case of a 24-year-old primigravida who presented at 26 weeks of gestation with complaints of periorbital puffiness for 2 weeks, which progressed to anasarca, decreased urine output and shortness of breath for 1 week. The patient, a known case of SLE since 2018 with mononeuritis multiplex and high blood pressure, was admitted in the deparment of Rheumatology at our tertiary care center. In 2018, she developed high-grade fever with pinpoint red spots on her body, which was not associated with chills or cough. Subsequently, she developed periorbital swelling, generalized body swelling, joint pain, and weakness in her upper and lower limbs,leading to bilateral wrist and foot drop. She was admitted to SGPGI Lucknow for the same where she was thoroughly investigated and managed. Her investigations revealed antinuclear antibodies (ANA) at 4+ homogenous, urine protein at 4+ on dipstick, red blood cell casts, and granular casts. Her anti-dsDNA titer was >3000, and antinucleosome antibodies were positive. A 24-hour urine protein test showed 3 grams of protein and decreased complement levels (C3 – 20, C4 < 1.6). Renal biopsy histopathology suggested lupus nephritis Grades III and V. Nerve conduction studies were non-recordable in major sensory and motor peripheral nerves. She was diagnosed with SLE, lupus nephritis, and mononeuritis multiplex vasculitis and treated with oral Tacrolimus, Hydroxychloroquine, Prednisolone, Losartan, and physiotherapy.

The patient was stable and symptom-free through 2019 and 2020 but lost follow-up from 2021 onwards due to the COVID-19 pandemic, during which she discontinued her medications. She conceived spontaneously in July 2024 and did a home pregnancy test which was positive. She had no antenatal care in the first trimester. At 4 months gestation, she developed periorbital swelling progressing to generalized body swelling and decreased urine output. At 25 weeks gestation, she was admitted to Department of Rheumatology, KGMU, Lucknow. Her initial examination showed a pulse rate of 90 beats per minute, blood pressure of 150/100 mm Hg, mild pallor, bilateral pitting pedal edema, abdominal wall, and vulval edema. Abdominal examination revealed a 26-week gravid uterus with a cephalic presentation and a fetal heart rate of 146 beats per minute.

Investigations indicated a lupus nephritis flare due to drug discontinuation and pregnancy, with 3+ urine protein on dipstick, red blood cell casts in urine, 24-hour urinary protein of 3 grams, ANA 4+ homogenous, complement levels C3 – 34 and C4 – 14, anti-dsDNA >300, serum creatinine 3.27 mg/dl, and serum urea 78.7 mg/dl. Obstetric ultrasound showed a single live fetuswith a gestational age of 24 weeks 1 day, an anterior placenta, an amniotic fluid index of 10 cm, and an effective fetal weight of 880 grams. Doppler study showed a cerebro-placental ratio >1. Also, meanwhile her Nephrology and Neurology opinion was taken and managed accordingly. She was started on limb physiotherapy for bilateral upper and lower limb and joint weakness.

Table 1: Laboratory Investigations Over Time

Year	Urine Routine	ANA	Anti-dsDNA	24-hour Urine Protein	C3/C4
2018	Proteins 4+, RBC casts, granular casts	4+	3000	3 gms	C3 – 20
2019	Protein 1+, no sediments	-	-	0.024 gms	-
2020-2022	Lost to follow-up	-	-	-	-
2023	Protein 3+, RBC casts	4+	>300	3 gms	C3 – 34, C4-14

She was managed with a multidisciplinary approach including pulse therapy of injectable dexamethasone, oral hydroxychloroquine, unfractionated heparin, oral labetalol, and oral nifedipine. Despite regular monitoring, her urine output decreased and serum urea and creatinine levels increased. At 29 weeks gestation, her estimated glomerular filtration rate (eGFR) was 25.

Her weekly renal function test showed deterioration overtime, on admission her serum urea and serum creatinine were 78 mg/dl and 2.75 mg/dl respectively. This worsened to serum urea being 118.8 mg/dl and serum creatinine being 3.82 mg/dl after 4 weeks despite all reparative measures. The decision for initiating hemodialysis and termination of the pregnancy was taken after proper counselling of patient party and opinion of all concerned department eperts. Following two cycles of hemodialysis with no improvement, termination was induced with intracervical Foley's catheter and

misoprostol. She delivered a preterm male baby weighing 1780 grams with APGAR scores of 7 and 8 at 1 and 5 minutes, respectively. Postnatally, the patient was transferredto the rheumatology department for pulse cyclophosphamide therapy and high-dose glucocorticoids. She was started on aggressive course of antibiotics, diuretics, steroid and anticoagulant therapy. She was followed vigorously on the basis of total daily urine output and renal function tests which showed improvement over a period of 3 weeks postnatally. Her baby was immunized as per the standard protocol, kangaroo mother care helped in improvement of the baby weight. She was discharged as per her request at 4 weeks post natal, on discharge her serum urea and serum creatinine levels were 64 mg/dl and 2.1 mg/dl respectively and daily urine output was in the range of 600-700 ml/day. The baby weight on discharge was 2.1 kg. At 3 months follow up the patient and baby were in a satisfactory condition. Her urine output was around 1 litre/day and serum urea and serum creatinine were 90mg/dl and 2.97 mg/dl, she was in regular follow up at her local health care centre for her limb physiotherapy. She was continuing her steroid therapy.

DISCUSSION

Systemic Lupus Erythematosus(SLE) is a chronic autoimmune disease with significant implications for both maternal and fetal health during pregnancy. This case highlights the complex management challenges associated with SLE, particularly when compounded by lupus nephritis and mononeuritis multiplex. These conditions necessitate a comprehensive, multidisciplinary approach to optimize outcomes for both the mother and the fetus. Pregnancy in patients with SLE is associated with increased risks of complications, including preeclampsia, preterm birth, and fetal growth restriction [2]. Our patient, who experienced a lupus nephritis flare and mononeuritis multiplex during pregnancy, illustrates the critical and quick need for multidisciplinary approach, monitoring and timely intervention. Management strategies for pregnant women with SLE and lupus nephritis must balance the need to control disease progress with the potential teratogenic effects of immunosuppressive medications. In this case, the use of hydroxychloroquine andtacrolimus, both considered relatively safe during pregnancy, was pivotal in managing her disease [3]. The initiation of pulse corticosteroid therapy and anticoagulation with unfractionated heparin further illustrates the tailored approach required in such high-risk pregnancies. The patient's renal function deteriorated despite aggressive management, necessitating hemodialysis and ultimately, termination of the pregnancy. The decision to terminate was made to prevent further maternal morbidity and potential fetomaternal mortality. This case report emphasizes on the multidisciplinary approach required and the judicious decision taken to terminate the pregnancy at the right time for favorable fetomaternal outcome. The patient's overall condition improved post- delivery with the reintroduction of cyclophosphamide therapy and high-dose glucocorticoids, highlighting the effectiveness of these agents in controlling severe lupus activity. Mononeuritis multiplex, although less common than lupus nephritis, adds another layer of complexity to the management of SLE in pregnancy as seen in this patient[4]. This condition, characterized by damage to multiple peripheral nerves, can result in significant disability. The patient's presentation with weakness and motor deficits required regular physiotherapy and careful monitoring, further complicating her clinical management. Here, Our combined approach was essential and fruitful in minimizing the complications and preventing further organ damage, hence reducing the morbidity of the patient ad also improving her quality of life.

CONCLUSION

In conclusion, this case emphasizes the importance of a multidisciplinary approach in managing pregnant patients with SLE and its complications. Regular follow-up, adherence to treatment, and timely interventions are crucial in mitigating risks and improving outcomes for both mother andfetus. This case also highlights the need for continued research and development of safer, more effective treatment options for managing severe SLE manifestations during pregnancy.

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