Case Report

Perioperative Management of a Patient with Systemic Lupus Erythematosus with Hypothyroidism Posted for Medical Termination of Pregnancy

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Abstract

Systemic lupus erythematosus (SLE) is an autoimmune disease and more frequent found in women between the age group of 15 to 45years . disease will coexcist with pregnancy. Disease exacerbation, increased foetal loss, neonenatal lupus and an increased incidence of pre-eclampsia are the major challenges. Its multisystem involvement and therapeutic interventions like anticoagulants, steroids and immunosuppressive agents pose a high risk for both surgery and anaesthesia. We describe successful management of an women with SLE with ten weeks whois posted for medical termination of pregnancy.

Keywords: Anesthesia, hypothyroidism, pregnancy, systemic lupus erythematosus, termination

Introduction

Systemic lupus erythematosus (SLE) is an autoimmune disease. It is characterized by the presence of autoantibodies present against nuclear antigens. The prevalence of SLE is about 1/1000. Female-to-male ratio is of 10:1, commonly seen in the age group of 15 and 40 years; therefore, it may coexist with pregnancy.

Pregnant patients most commonly experience exacerbation of disease, neonatal loss, and obstetric complications such as preeclampsia. Pregnancy has to be planned in SLE and, most of the times, unplanned pregnancy in the time of disease flare-up has to be terminated.

Case Report

We present a case of SLE with hypothyroidism with 12 weeks of amenorrhea under regular antenatal checkups.

The patient had presented to obstetric outpatient department with complaints of missing period and she was found be 10 weeks of amenorrhea. On her next antenatal visit, she was recorded with high blood pressure readings (200/140 mmHg), and she also had a history of butterfly rash over the nasal bridge, photosensitivity, small joint pains, and oral ulcers.

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On investigation, her hemoglobin was 8.9 gm% (anemia) [Figure 1], urea was 80 mg/dl, serum creatinine was 3.6 mg/dl, thyroid-stimulating hormone was 7.94 (hypothyroidism), C3 complement was 98, anticardiolipin antibodies positive value is 192 u/l, prothrombin time was 11.6 s, and activated partial thromboplastin time was 20 s. Ultrasound abdomen revealed bilateral Grade 1 renal parenchymal changes.

The patient was on antihypertensive tablet nifedipine 20 mg QID and tablet thyroxine 100 mcg OD.

After discussion between obstetricians, anesthesiologists, and nephrologists, a decision of medical termination of pregnancy was taken.

On preanesthetic evaluation, she was advised to be nil by mouth for 6 h and to take morning dose of antihypertensive tablet nifedipine 20 mg and thyronorm 100 mcg.

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Table 1: Slicc criteria

Clinical features	Immunological features
Acute cutaneous lupus (maculopapular lupus rash, Malar rash, photosensitive lupus rash etc)	High ANA concentration
Chronic cutaneous lupus (discoid rash, mucosal lupus etc)	High anti-dsDNA antibody concentration
Nonscarring alopecia	Presence of anti -Sm
Synovitis in >2 joints	Positive APA
Serositis	Low complement (C3, C4, CH50)
Renal (urine proteins or RBC casts)	Direct Coombs test
Neurological (seizures, psychosis, others)	Must have a total of 4 features with more than or equal to 1 clinical feature and 1 immunological feature or biopsy proven LN with anti- dsDNA Antibodies or ANA
Haemolytic anemia	
Leukopenia or lymphopenia(without an identifiable causes)	
Thrombocytopenia (without identifiable causes)	

On the day of planned procedure, all the advice was counterchecked, informed written consent was taken, and a functional intravenous access was secured.

The patient was shifted to the operation theater, all the standard monitors (noninvasive blood pressure [NIBP], electrocardiography [ECG], and pulse oximetry) were attached, and baseline vitals were noted down.

On investigation, the following were noted: blood pressure 190/110 mmHg, heart rate 100 bpm, temperature 98°F, and SpO_2 100%.

Antiaspiration prophylaxis was given and the patient was premedicated with glycopyrolate (0.005 mg/kg) + midazolam (0.5 mg/kg) + fentanyl (2 mcg/kg), induced with propofol (1 mg/kg), and maintained on O_2 (50%) + N_2O (50%) + isoflurane 0.8 minimum alveolar concentration (MAC).

In lithotomy position, parts were painted and dropped; under ultrasound guidance, suction evacuation was done. During the procedure, isoflurane 2 MAC was given. The total duration of the surgery was 30 min. Throughout the procedure, the patient was spontaneously breathing and anesthesia was uneventful.

After the procedure, the patient was shifted to postoperative care unit and monitored. Patient follow-up was done.

Discussion

SLE is an autoimmune disease with significant female predominance (10:1).[1] SLE is common in childbearing age group females.[2]

Diagnosis of systemic lupus erythematosus

SLE is said to be present if any of four or more of the criteria as shown in Table 1 are met.

SLE is a disease condition, which will not only hamper the normal life of a woman but also can create complications during pregnancy.

Common pregnancy-related complications are as follows:[4]

- Pregnancy-induced hypertension
- Preeclampsia
- Eclampsia
- HELLP syndrome
- Antepartum hemorrhage
- Intrauterine growth retardation (IUGR)
- Prematurity, abortion, and stillbirth
- Gestational diabetes (increased by prednisone use SLE Rx).

Other complications include:

- Infection
- Deep vein thrombosis
- Pulmonary embolism
- Cerebrovascular accident
- Pulmonary hypertension.

Furthermore, there is risk of abortions (2–3 times), IUGR, and stillbirth. Therefore, lupus pregnancy is labeled as "high-risk" pregnancy.[5]

We suggest that perioperative management must be tailored to the individual patient. Anesthetic management plan is made after taking into account the severity of the disease, the potential drug interactions with immunosuppressants, an unexpected difficult airway with subglottic stenosis or laryngeal edema, and coagulation profile of the patient.

Cardiovascular involvement could be in the form of pericarditis, myocarditis, arthrosclerosis, and myocardial ischemia.[6] Pulmonary involvement could vary from pleuritis, pleural effusion, alveolar hemorrhage, and interstitial lung disease.[6] Renal involvement is seen in the form of lupus nephritis characterized by proteinuria, hematuria, and abnormal urinary segments.[6] Similar to the patient in our case, patients with SLE are at a high risk of hypertensive renal status.[6] The risk may increase in case of pregnancy.

Hematological manifestations commonly seen in SLE include anemia, thrombocytopenia, and leukopenia. Anemia is found in about half of the SLE patients, with the most common cause being anemia of chronic disease; however, other causes include autoimmune hemolytic anemia, iron deficiency anemia, anemia of chronic renal failure, and cyclophosphamide myelotoxicity. Nonerosive arthritis is seen in patients with SLE.[7] Prolonged glucocorticoid use for immunosuppression could cause osteoporosis. Incidence of atlantoaxial subluxation has been reported.

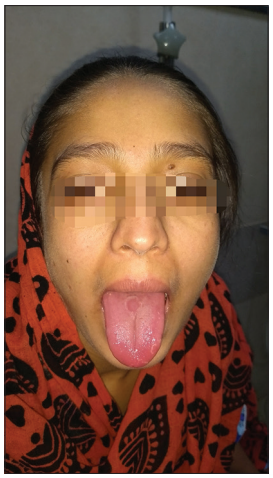

Figure 1: The photograph of the patient who received anesthesia

Preoperative visit aims at the activity of the lupus, organ damage, medication exposure, thorough preanesthetic assessment, and laboratory test. Care of the high-risk patients requires a multidisciplinary approach.

As SLE symptoms are nonspecific, the investigations become mainstay in monitoring. Complete blood count has to be done in all patients alongside coagulation profile. Platelet count should be repeated every month because of the high risk of thrombocytopenia in lupus patients. ECG may be done when suspecting pericarditis, myocarditis, and chest X-ray may be reserved for extreme cases where pleural effusion or interstitial pneumonitis is seen clinically. For patients with renal involvement, every month, creatinine clearance and 24 h urine protein should be checked. If the patient is on steroids, then a close monitoring of blood sugar levels is advocated. Anticardiolipin antibody, lupus anticoagulant, and anti-β2 glycoprotein should be done to rule out any secondary involvement in succeeding months.

Monitoring during anesthesia includes 5-lead ECG, NIBP, pulse oximetry, and invasive monitoring should be used in patients with myocarditis, valvular involvement, or conduction abnormalities. Renal protective strategies and maintenance of urine output, avoidance of nephrotoxic drugs are the goals during anesthesia. Adequate pain management and corticosteroid cover should be given intraoperatively to prevent adrenal suppression. Patient should be positioned with care to avoid joint stress.

Difficult airway should be anticipated in all the patients, smaller sized tubes, and laryngeal mask airway must be available considering the potential laryngeal and the subglottic involvement.[3] Laryngeal involvement could vary from mild inflammation to laryngeal edema, epiglottis, and vocal cord paralysis to acute airway obstruction. The pathophysiology of laryngeal inflammation of SLE is not well understood although the tissue deposition of immune complexes with activation of complements is less likely the cause.[7] There is a significant risk of failed intubation and airway trauma during instrumentation. Pharmacological interactions between anesthetic drugs and immunosuppressant drugs should warrant consideration.

Conclusion

SLE is a threat for both mother and fetus. The better understanding of the maternal–fetal factors in lupus has improved outcome in pregnancy. Anesthetic management of lupus patients can be of any type taking into account the multisystem nature of the disease. SLE needs a multidisciplinary approach for its diagnosis and successful management.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that name and initial will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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