Case Report
Received on 19.09.2016, **Accepted on** 12.10.2016

Indian Journal of Anaesthesia and Analgesia
Volume 3 Number 3, September - December 2016
DOI: http://dx.doi.org/10.21088/ijaa.2349.8471.3316.9

Caesarean Section in a Case of Systemic Lupus Erythematosus

Deepak M. Kokane*, Kiran Todkari**

Abstract

Systemic lupus erythematosus is characterized by chronic, inflammatory, multi-organ symptoms caused by immune complexes and auto antibodies. The disease is having wide clinical presentation involving cardiovascular system, respiratory system, gastrointestinal system, renal, hematologic, central nervous system, musculoskeletal and dermatologic system pathologies. Commonly the onset of this disease is in the third to fourth decade of life. In pregnancy systemic lupus erythematosus may exacerbate causing spontaneous abortions, intrauterine death, pre-eclampsia and eclampsia, intrauterine growth retardation, preterm delivery. This case report summarizes the peri-operative course and anaesthetic management in a parturient with SLE with bad obstetric history who underwent elective caesarean section [LSCS].

Keywords: Autoimmune; LSCS; Pregnancy; Systemic Lupus Erythematosus; ANA.

Case Report

A 20 year old woman (G2A1P0L0) with 38 weeks gestational age, diagnosed with SLE was scheduled for elective caesarean section in view of cephalo-pelvic disproportion.

Patient had the systemic symptoms during the first trimester such as oral ulcerations with difficulty in deglutition and sometimes bleeding through the lesions. During antenatal checkups, she was investigated in view of bad obstetric history and a diagnosis of SLE was made. She was found to be ANA (antinuclear antibody) positive but negative for antiphospholipid antibody.

Her complete blood counts (CBC), blood sugar, urine examination were normal. Liver and renal function tests (LFT, RFT), electrocardiograph (ECG) were further ordered to rule out any systemic involvement and were found to be normal.

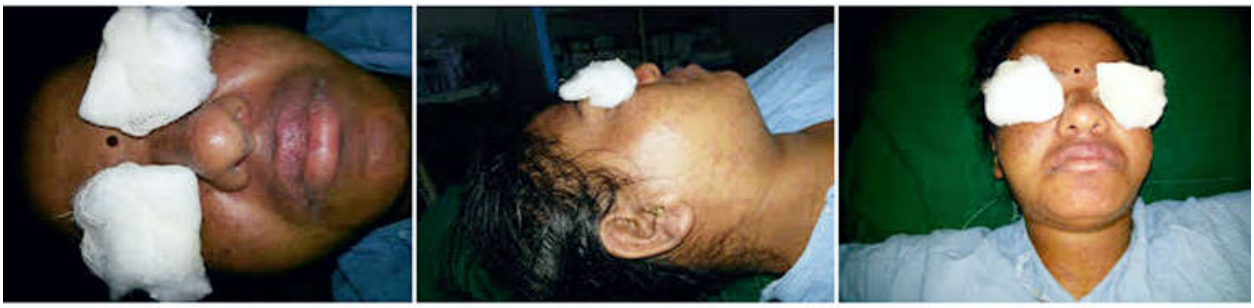
To improve the foetal outcome, she was receiving enoxaparin 50 mg subcutaneously twice daily and then after that once in a day reaching to term. She was being monitored by serial bleeding time (BT), clotting time (CT) and activated partial thromboplastin time (APTT) measurements. In view of bad obstetric history, an elective caesarean section was planned at term. Injection enoxaparin was with held 24 h prior to surgery. Preoperative investigations revealed a normal BT, CT, APTT and PT/INR.

Patient was shifted to the operation theatre. In view of normal coagulation profile, regional anaesthesia was planned. 18G iv line was secured and patient was preloaded with 500 ml of Ringer lactate. Vital monitoring was carried out through oxygen saturation (SpO_2), heart rate, noninvasive blood pressure and ECG and foley's catheter was placed to measure hourly urine. Inj. Hydrocortisone 100mg iv was given.

Subarachnoid neuraxial block was performed using 2 ml of 0.5% Bupivacaine (heavy) in lateral position with 25G Quincke's needle under aseptic precautions. Blockade was achieved at T6 dermatome level. Baby cried immediately after birth with normal APGAR score and no signs of neonatal lupus seen. Inj. Oxytocin 20IU in 500 ml DNS was started. The surgery was uneventful with minimal blood

Author's Affiliation:
*Associate Professor, Dept. of Anaesthesiology and Medical Superintendent, Govt. Medical College & General Hospital, Near Rajesthan High School, Latur -413512. **Assistant Professor, Dept. of Anaesthesiology, Govt. Medical College & General Hospital, Near Rajesthan High School, Latur -413512.

Corresponding Author:
Deepak M. Kokane, Associate Professor, Dept. of Anaesthesiology and Medical Superintendent, Govt. Medical College & General Hospital, Latur, Behind Old Railway Station, Near Rajesthan High School, Latur -413512. (Rajesthan).
E-mail: kdrdeepak@gmail.com



loss. After full recovery patient was shifted to the ward and enoxaparin injections were restarted after 24 h.

Discussion

SLE was first documented in the Middle Ages when it was termed lupus ('wolf' in Latin) to describe the appearance of the classical facial (malar) rash. Others have suggested that the disease may have been named after a veil used by women in France to cover facial blemishes [1]. The pathogenesis of SLE is complex. There is formation of immune complexes and antibodies against cell surface molecules or serum constituents [2]. Many auto antibodies have a pathogenic role, targeting DNA, RNA, cell membrane structures, the cellular surface and intracellular molecules [3]. Organ inflammation and consequent damage results from autoantibody production and dysfunctional immune system. The level of involvement of organ system varies. For diagnosis of SLE, clinical criteria formulated by the American College of Rheumatology (ACR) are useful. According to it, patient must exhibit at least four of following eleven features—serositis, oral ulcers, arthritis, photosensitivity, haematological abnormalities, renal pathology, presence of immunologic disorders, positive ANA, neurologic disorders, malar rash, discoid rash [4]. Extensive preoperative assessment is needed due to extensive and multiple organ dysfunction. Cardiovascular system is involved in SLE in the form of atherosclerosis, coronary artery disease, myocardial infarction, valvular heart disease, and stroke. So we should investigate like chest X-ray, echocardiography, ECG [5]. Hematologic pathologies may present in the form of anaemia, thrombocytopenia and leukopenia, assessed by studies like complete blood count, prothrombin time and partial thromboplastin time.

Anti-DNA molecules also attack the central nervous system leading to mood changes, cognitive impairment [6] whereas antiphospholipid antibodies causes stroke, seizures, migraine [7]. So EEG and a CT scan may be necessary. Renal system pathology may present in form of glomerulitis, nephritic syndrome, renal failure evaluated by urinalysis, renal USG and scan, BUN level, creatinine, albumin and total serum protein levels [8]. Respiratory involvement may include acute pnemonitis, chronic alveolar infiltrates, recurrent infectious pneumonia, and alveolar haemorrhage. So one should do chest X-ray, pulmonary function tests and arterial blood gas analysis [9]. Difficult intubation is anticipated and there is possibility of cricoarytenoid arthritis, laryngeal pathology, temporo-mandibular joint dysfunction, mucosal ulceration [2].

Antiphospholipid syndrome may co-exist with SLE in which there is recurrent systemic arterial and venous thrombosis, abortions, thrombocytopenia [9]. Bleeding may occur due to reaction of antibodies with clotting factors like factor VIII, IX, XII. So DVT prophylaxis and investigations like complete coagulation profile are necessary [10]. During pregnancy, SLE increases risk of pre-eclampsia, infections, preterm birth, IUGR.

Many laboratory studies, imaging studies and histologic tests are available for diagnosis of SLE. Positive ANA is the most sensitive test for SLE screening while anti-dsDNA and anti-Smith antibodies are more specific to SLE [4]. Disease severity and organ involvement determine a suitable treatment regimen. It includes antimalarials, glucocorticoids, NSAIDs, immunosuppressive, cytotoxic and biologic agents [11,12].

Pregnancy outcome of patients with antiphospholipid antibody improves when they receive heparin and low dose aspirin but studies are going on such trials in patients with positive ANA [13]. To reduce blood loss heparin therapy is withheld at the time of delivery and restarted after delivery. Ideally we should give heparin for 6 weeks postpartum [14]. Intra operatively and

postoperatively we should monitor for bleeding and thromboembolic complications. Plan of anaesthesia should be decided after explaining to the patient risks and benefits of general and regional anaesthesia. Role of paediatrician is also significant as there are chances of neonatal SLE.

Conclusion

Anaesthetic management of SLE patients is challenging. Extensive preoperative assessment is necessary because of wide ranging clinical presentations of SLE .Careful anaesthetic planning and intra-operative monitoring of all affected organ systems particularly renal, pulmonary and cardiovascular system function are required. If multi systems are not involved, regional anaesthesia is better than general anaesthesia in view of patient's betterment.

References

1. Sharon T Carrillo, Emily Gantz, Amir R Baluch, Rachel J. Kaye, Alan D Kaye. Anesthetic considerations for the patient with systemic lupus erythematosus. M.E.J. Anesth 2012; 21(4): 483-492.
2. Hines RL, Greene NM, Marschall KE: Skin and musculoskeletal diseases: systemic lupus erythematosus. In: Hines RL, Marschall KE, eds. Stoelting's Anaesthesia and Co-existing Disease. 5th ed. Philadelphia, PA: Churchill Livingstone Elsevier, 2008; 445-446.
3. Hahn B, Tsao B: Pathogenesis of systemic lupus erythematosus. Firestein GS, Budd RC, Harris ED Jr, McInnes IB, Ruddy S, Sergent JS, eds. Kelley's Textbook of Rheumatology. 8th ed. Philadelphia, PA: Saunders Elsevier, 2008; 1233-1262.
4. Heidenreich U: Sensitivity and specificity of autoantibody tests in the differential diagnosis of lupus nephritis. Lupus; 2009-12, 18:1276-80.
5. Björnådal L, Yin L, Granath F, Klareskog L, Ekbom A: Cardiovascular disease, a hazard despite improved prognosis in patients with systemic lupus erythematosus: results from a Swedish population-based study, 1964-95. J Rheumatol; 2004; 31(4): 713- 719.
6. Maddison PJ, Reichlin M: Deposition of antibodies to a soluble cytoplasmic antigen in the kidneys of patients with systemic lupus erythematosus. Arthritis Rheum; 1979; 22(8):858-863.
7. Brey R: Antiphospholipid antibodies and the brain: a consensus report. Lupus; 2011-02, 20:153-157.
8. Dierdorf S, Walton S: Rare and coexisting disease. In: Barash PG, Cullen BF, Stoelting RK, Cahalan MK, Stock MC. Clinical Anaesthesia; 6th ed. Philadelphia, PA: Lippincott Williams & Wilkins, 2009; 638-639.
9. Tassiulas I, Boumpas D: Clinical features and treatment of systemic lupus erythematosus. In: Firestein GS, Budd RC, Harris ED Jr, McInnes IB, Ruddy S, Sergent JS, eds. Kelley's Textbook of Rheumatology. 8th ed. Philadelphia, PA: Saunders Elsevier, 2008, 1263-1296.
10. Merkel PA, Chang Y, Pierangeli SS, Convery K, Harris EN, Polisson RP; The prevalence and clinical associations of anticardiolipin antibodies in a large inception cohort of patients with connective tissue diseases. Am J Med., 1996; 101:576-583.
11. Cuenco J, Tzeng G, Wittles B: Anesthetic management of the parturient with systemic lupus erythematosus, pulmonary hypertension, and pulmonary edema. Anesthesiology; 1999; 91(2): 568-570.
12. Yildirim-Toruner C: Current and novel therapeutics in the treatment of systemic lupus erythematosus. Journal of allergy and clinical immunology; 2011-02; 127:30.
13. Stern C, Chamley L, Norris H, Hale L, Baker HW; A randomized, double blind, placebo controlled trial of heparin and aspirin for women with in vitro fertilization implantation failure and antiphos pholipid or antinuclear antibodies. Fertil Steril. 2003; 80: 376-383.
14. Hochberg MC: The history of lupus erythematosus. Md Med J. 1991; 40(10):871-873.
15. Ben-Menachem E: Review article: systemic lupus erythematosus: a review for anesthesiologists. Anesth Analg. 2010; 111(3):665-676.