

Case Report

Anesthetic Management of a Systemic Lupus Erythematosus Patient with Multi-Organ System Involvement for Drainage of Ischio-Rectal Abscess

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Abstract

Systemic Lupus Erythematosus (SLE) is a multisystem disorder. The cause of SLE is unknown. It is believed to be a combination of genetic and environmental factors contributing to the formation of the antibodies that lead to lupus. SLE has a wide spectrum of presentation, ranging from mild to severe life-threatening disease. It is characterized by its waxing and waning course. So patient can present at any stage and severity of disease for either elective or emergency intervention. A thorough pre-anesthetic evaluation is mandatory for safe anesthesia and anesthetic plan must be individualized based on the degree of the involvement of the various systems, current medications, and review of detailed laboratory investigations. Here in, we report a case of SLE with high damage index, dialysis dependent end stage renal disease (ESRD) and right heart failure secondary to pulmonary hypertension.

Key Words: SLE, multi-organ system, anesthesia

Introduction

Systemic lupus erythematosus is a chronic autoimmune disease with heterogeneous presentation.¹ Its estimated prevalence in India is 3 per 100,000 population with male to female ratio of 1:10 and primarily affects women of childbearing age.² Organ system specific support is the need of the hour and it is not surprising, therefore, that the need for such support has become a model for describing the clinical course of the critically ill patient. Cardiovascular involvement could be in the form of pancarditis with myocarditis (conduction disease, congestive heart failure), pericarditis (effusion/tamponade), non-infectious endocarditis (aortic & mitral regurgitation), accelerated coronary disease, hypertension, and pulmonary hypertension. Pulmonary involvement in the form of restrictive lung disease (interstitial lung disease, pleuritis, effusion), pulmonary hypertension/ right ventricular failure, infection and pulmonary hemorrhage. Renal involvement is seen in form of lupus nephritis and chronic renal failure. Central nervous system syndromes include central & peripheral neuropathies, seizure, stroke, mood disorders, confusion, organic disease and transverse myelitis. Musculoskeletal symptoms include vasculitis, arthritis, joint immobility, and migratory polyarthritis. Hematological manifestations like antiphospholipid antibody syndrome are common, risk of thromboembolism, anemia, thrombocytopenia, leukopenia factor deficiency (VIII, IX, XII) with implications for regional anesthesia.³ According to systemic lupus international collaborating clinics,⁴ damage index of my patient was very high placing her in high-risk category for the surgery.

Case Report

A 32 year-old lady weighing 45kg, poorly nourished, presented to the emergency room with right sided ischio-rectal abscess. As per her previous medical records available, she was diagnosed with systemic lupus erythematosus 17 years ago currently on immunosuppressant, Tablet Mycophenolate mofetil 1gm OD; on steroid, Tablet Prednisolone 10mg OD. She was on intermittent hemodialysis twice weekly for ESRD for 2 years; known systemic hypertension for 2 years; seizure disorder for 3 years on tablet phenytoin 300mg OD; pulmonary hypertension leading to right heart failure on tablet furosemide 40mg OD. Recently diagnosed chronic liver disease showing coarse echoes on ultrasound with ascites and high serum ascites albumin gradient (SAAG) of 2.6 under evaluation. Her fluid intake was restricted to 500ml/day. Last hemodialysis was done 24 hours back. She was conscious, oriented, tachypneic, and difficult to lie-down in recumbent position, in pain with pulse rate of 110/min; blood pressure of 170/110 mmHg; respiratory rate of 30/min and room air saturation of 98%. Cardiovascular system: S1 S2 +, No added sounds; Respiratory system: B/L basal crepts present. Her ECG showed frequent atrial ectopics (Fig 1); ECHO showed concentric Left ventricular hypertrophy, right atrium and right ventricle dilated, Grade III Diastolic Dysfunction with ejection fraction 60%; Cardiac USG showing pericardial effusion (Fig 2); USG abdomen showed B/L contracted kidney with ascites (Fig 3). Pre-operative investigations were Hb: 6.7gm%; platelet: 98,000 L/cumm³; total count: 5000 /cumm³; BUN : 12 mg / dl; S. creatinine

2.41 mg/dl ; INR: 1 ; Na: 149 meq/L ; K: 3.6 meq/L ; alkaline phosphatase 315 U/L ; S. protein 6.0 g/dl ; S. albumin 3.5 g/dl ; serology : non-reactive. All standard monitors were connected. IV line was secured with 20G cannula in right hand. NPO status was adequate as per ASA guidelines.

60mcg (0.2ml) were administered. Patient was hemodynamically stable throughout the procedure. Post-operative period was uneventful.

Discussion

Heterogeneous presentation of systemic lupus erythematosus demands meticulous patient tailored anesthesia and peri-operative care. There are no definitive protocols as there is no substantiating evidence of SLE and anesthesia has never been studied in detail.⁴ These patients are predisposed to potentially catastrophic events intraoperatively like arrhythmia, myocardial infarction etc.. So every effort should be made to maintain hemodynamic stability and manage the potential emergency accordingly.⁵

Induction of general anesthesia will lead to atelectasis and decompensation of respiratory system which will trigger acute respiratory failure. Since our patient had right ventricular failure and ascites, she would require invasive ventilation and prolonged ICU stay, further increasing her morbidity and mortality. Therefore, we decided to avoid general anesthesia. Regional anesthesia will lead to profound hypotension, worsening the heart failure and demand the need for inotropic support. Because it was a perineal surgery, weighing the risk versus benefit between general anesthesia & regional anesthesia we chose to give her a low-dose sub arachnoid block with opioid as an adjunct. Short durations of motor and sensory block with reduced post anesthesia care unit stays are desired properties, which will provide early discharge and a stable hemodynamic profile. By using low doses of bupivacaine and intrathecal opioids together, successful anesthesia and analgesia were reported to be obtained.⁶ White et al. has demonstrated a significant correlation between hypotension, mortality and dose of intrathecal local anaesthetic.⁷ Our patient responded well to our choice of anesthesia and improved well post-operatively.

Conclusion

SLE definitely requires a multidisciplinary approach for its diagnosis and successful management. Patients with ongoing severe infection are in an inherently unstable cardiovascular state due to the combined effects of sepsis, anesthesia, intravascular volume loss, bleeding, and surgical stress. Proper understanding of pathophysiology, careful anesthetic planning and vigilant intraoperative monitoring of all affected organ systems particularly renal, pulmonary, and cardiovascular function-are mandatory for an effective outcome in patients with SLE.

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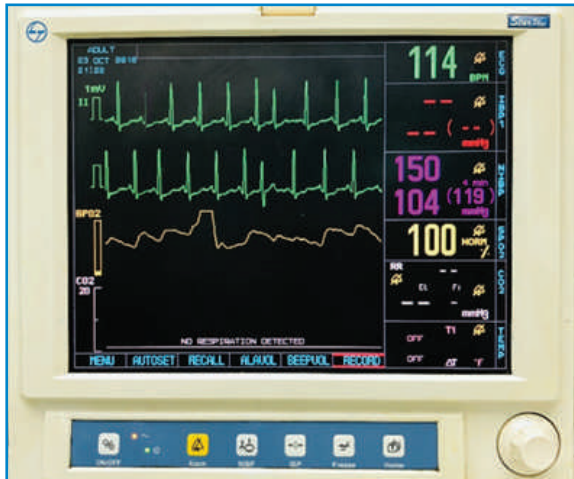


Figure 1: ECG showing atrial ectopics intra-operatively



Figure 2: USG showing peri-cardial effusion



Figure 3: USG abdomen showing ascites

In view of multi-organ system involvement and short procedure, low dose sub-arachnoid block was administered in lateral position with 25G Quincke needle under aseptic precautions and Inj. Bupivacaine 0.5 % hyperbaric 7mg (1.2ml) + Inj. Buprenorphine

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திருக்குறள் 945 / Thirukkural 945:



மாறுபாடு இல்லாத உண்டி மறுத்துண்ணின்
ஊறுபாடு இல்லை உயிர்க்கு

மாறுபாடல்லாதா உணவை அளவு மீறாமல் மறுத்து அளவோடு உண்டால்,
உயிர் உடம்பில் வாழ்வதற்கு இடையுறான நோய் இல்லை

If one does not indulge in indiscriminate eating, sickness does not befall upon him/her.