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Letter to the editor

Anesthetic management of the patient with systemic lupus erythematosus and severe granulocytopenia

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To the editor: Patients with systemic lupus erythematosus (SLE) may be expected to have an increased risk of surgery because of the possibility of multiorgan involvement, as well as the state of immunosuppression, that is related to the disease itself and the drugs used for its management [1]. We have experienced the anesthetic management of a patient (a 45-year-old woman) with SLE and severe granulocytopenia who was scheduled for ovarian cystectomy because of repeated episodes of strong abdominal pain due to ovarian cyst torsion.

Her past history included diagnosis of *p*-anti-neutrophil cytoplasmic antibody-associated rapidly progressive glomerulonephritis in 1994 and SLE in 1996. Since then, she had suffered from repeated episodes of infection. On admission to the hospital, she was found to have a pancytopenia (hemoglobin 6.7 g/dl; platelets $10.6 \times 10^4/\mu l$; white blood cells 1090/μl; granulocytes 200/μl) and hypoalbuminemia (serum albumin 3.2 g/dl), but no other abnormalities were found in the patient's cardiorespiratory, renal, and central nervous systems. She had taken prednisolone at 15 mg/day for the past 5 years, since 1994. Thirty minutes before entry into the aseptic operating theater, the patient was given atropine sulfate (0.5 mg) and hydroxyzine (50 mg), intramuscularly. Anesthesia was induced with thiamylal (250 mg) and fentanyl (0.1 mg), relaxing the patient with vecuronium (5 mg) for smooth tracheal intubation, and was maintained with approximately 2% sevoflurane and 66% nitrous oxide in addition to a 0.1-mg bolus of fentanyl. The surgical procedure was uneventful. After surgery, the patient had peritonitis and wound recovery was delayed. She was treated with three kinds of antibiotic (cefmetazol sodium, 2 g/day; ampicillin, 4 g/day; and amikacin sulfate, 400 mg/day) and the wound was sterilized daily with povidone iodine and debrided. On the 23rd postoperative day, the wound improved. On the 30th postoperative day, the patient was discharged in good condition.

Watson-Williams [2] has discussed the problems of a granulocyte count below 200/μl before surgery. When the marrow is not hypoplastic or there is no history of unusually frequent bacterial infections, it seems reasonable to wait until evidence of infection and failure of wound recovery occurs before starting granulocyte transfusions. In our patient, the cause of granulocytopenia (150–200/μl) was unclear and the marrow was not hypoplastic. However, we did not use granulocyte transfusions because administration of three kinds of antibiotic, sterilization with povidone iodine, and debridement were effective for peritonitis and delayed wound recovery in our patient.

Although it has been reported that the administration of granulocyte colony-stimulating factor (G-CSF) increases production of granulocytes before surgery [3], in our case the administration of G-CSF was possible for only a short period before (Lenograstim; 100 μg/day) and after (Filgrastim; 75 μg/day) surgery because of an allergic action, i.e., fever (above 38°C). Thus, G-CSF could not be used to increase the granulocyte count in our patient.

In summary, we experienced the anesthetic management of a patient with SLE and severe granulocytopenia (150–200/μl). Contrary to Watson-Williams' discussion, we did not use granulocyte transfusions because administration of three kinds of antibiotic, sterilization with povidone iodine, and debridement were effective for peritonitis and delayed wound recovery in our patient.

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