

## The Management of Lupus Thrombocytopenia in Poly Trauma Patient

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Lupus thrombocytopenia is a common clinical manifestation in systemic lupus erythematosus (SLE). It may present to clinicians with considerable therapeutic difficulties. We experienced a 40-year-old poly trauma patient with lupus thrombocytopenia who had been treated with immunosuppressive drugs for SLE. She was treated for refractory thrombocytopenia with platelet transfusion, corticosteroid and Intravenous immunoglobulin (IVIG). Fourteen days after admission, her platelet count started to increase,  $101 \times 10^3/\text{ul}$  at 16 days after admission. Trauma patients may carry various underlying diseases and thus trauma surgeons should always be aware and ready for peculiar situations. [ J Trauma Inj 2017; 30: 59-62 ]

**Key Words:** Lupus thrombocytopenia, Systemic lupus erythematosus, Poly trauma

### I. Introduction

Lupus thrombocytopenia has a prevalence range from a low of 7 to 30% in patients with systemic lupus erythematosus (SLE). Because of the diverse etiologies in lupus thrombocytopenia, its clinical significance and prognostic effect still remain a controversial issues. Besides, lupus thrombocytopenia itself frequently present to the clinician with considerable diagnostic and therapeutic difficulties.(1-3) Here we present a 40-year-old poly trauma patient with lupus thrombocytopenia, and then discuss about the management of lupus thrombocytopenia with literature review.

### II. Case Report

A 40-year-old female was brought to the emergency department 30 minutes after driving into the guard rail on opposite lane at 120 km/hr due to brake malfunction. Her Her Glasgow Coma Scale was 13, blood pressure was 120/60 mmHg, heart rate was 79 per minute, respiratory rate was 18 per minute. She complained pain at her right chest, left arm, back, and hip. Ecchymosis was visible on her left lower quadrant of abdomen. Initial X-ray and focused assessment with sonography in trauma (FAST) were unremarkable. Computed tomography (CT) scan revealed right 6<sup>th</sup> and 7<sup>th</sup> rib fracture with minimal pneumothorax, left humerus fracture, right ilium, acetabulum, and sacrum fracture, and multiple fracture of lumbar spines. There

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was also left abdominal muscle rupture with minimal hemoperitoneum, but extravasation of contrast was not evident (Fig. 1).

Her Injury severity score totaled 17 and was sent to the trauma intensive care unit for close observation. Initial blood examination showed hemoglobin of 13.6 g/dl and platelet of  $108 \times 10^3/\text{ul}$ , which, after four hours, declined to 11.1 g/dl and,  $63 \times 10^3/\text{ul}$ , respectively. Consumptive coagulopathy from poly trauma was suspected, calling for 10 units of platelet transfusion. Nevertheless, the follow-up platelet count dropped to  $34 \times 10^3/\text{ul}$ .

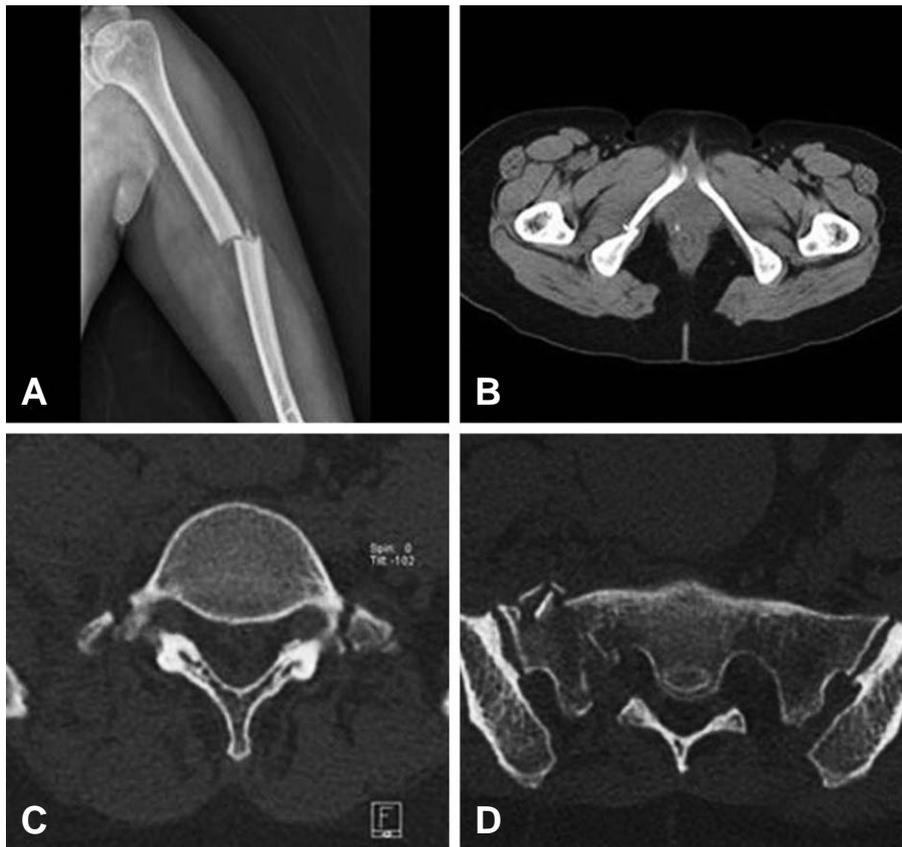
We rechecked her physical examination, FAST, X-rays, and history. Thorough investigation of her medical history revealed SLE diagnosed two years ago at other hospital, which she denied of when asked initially. She was treated with immunosuppressive drugs including MIZORIBINE 50 mg TPC, and TACROLIMUS 1 mg, and her platelet count was maintained over  $100 \times 10^3/\text{ul}$ .

Operation for her left humerus was planned four

days after admission, but delayed due to low platelet count of  $30\text{--}40 \times 10^3/\text{ul}$ , which remained low despite platelet transfusion. Close observation with her original medication (MIZORIBINE 50 mg TPC, TACROLIMUS 1mg TPC) still resulted in low platelet count 11 days after admission, so corticosteroid and IVIG were prescribed. Fourteen days after admission, her platelet count started to increase,  $101 \times 10^3/\text{ul}$  at 16 days after admission. Thus 18 days after admission, operation for her left arm was carried out, after which, the platelet count transiently dropped to  $54 \times 10^3/\text{ul}$ , without further decrease or bleeding tendency. Steroid was tapered and the patient was kept on her original medication. Two weeks after operation, her platelet count was within normal range. She was transferred to a local hospital near her home.

### III. Discussion

Lupus thrombocytopenia is often mild and no specific drug therapy is recommended. Corticosteroids has



**Fig. 1.** Initial radiologic images. (A) X-ray shows fracture on humerus shaft (B) CT shows fracture on pubic ramus of pelvic bone (C) CT shows fracture on both transverse process of lumbar vertebrae. (D) CT shows fracture on sacrum.

been the initial treatment of choice in more severe cases and have been used for more than 3 decades.(4) With lupus thrombocytopenia, treatment should be considered in case of severe bruise or bleeding, or with platelet counts less than  $50 \times 10^3/\text{ul}$ . In case of severe lupus thrombocytopenia ( $<20 \times 10^3/\text{ul}$ ), Tapering of prednisolone from 1 mg/kg/day should be commenced. Pulsed methylprednisolone can also be prescribed, even if there is no benefit in its use over high-dose oral corticosteroids, while the risk of critical side effects such as avascular necrosis is increased.(5) Azathioprine is a steroid-sparing agent that is frequently used in the treatment of lupus thrombocytopenia.(6) Cyclosporin A is an alternative immunosuppressive drug to minimize side effects in the treatment of lupus thrombocytopenia.(7) If treatment of lupus thrombocytopenia with prednisolone or steroid-sparing agents end in

failure, splenectomy can be an optional treatment modality. The effect of splenectomy for lupus thrombocytopenia is usually beneficial.(8) IVIG may be quite effective in some cases with lupus thrombocytopenia. It is a well-established treatment option, has a long-lasting response to lupus.(9) The therapeutic dose of IVIG for severe lupus thrombocytopenia is 2 g/kg, usually give 400 mg/kg for five consecutive days. Danazol is another treatment option in lupus thrombocytopenia. It is mostly tolerable, safe, and like IVIG, can be prescribed in pregnant woman.(10) The treatment of severe lupus thrombocytopenia may require more potent cytotoxic treatment including cyclophosphamide. Cyclophosphamide (prescribed as 10–15 kg), given intravenously every month for at least 4 months proved usefulness in the treatment of refractory severe lupus thrombocytopenia.(11) In case of

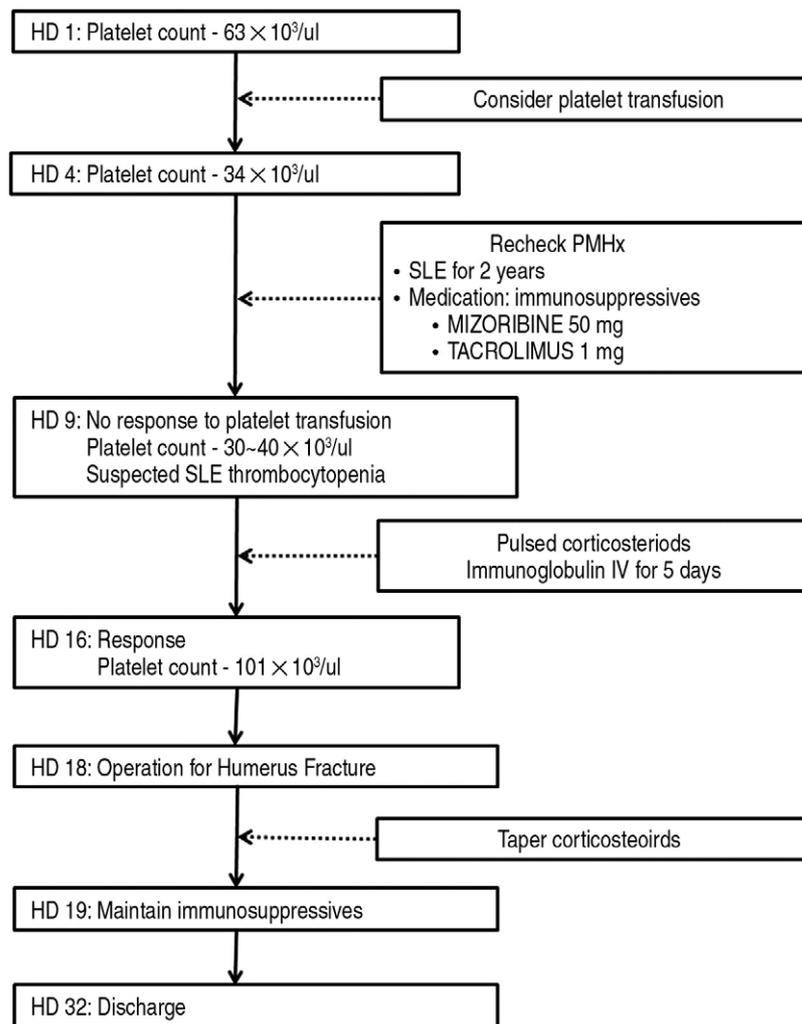


Fig. 2. The clinical course and management of patient.

severe lupus thrombocytopenia, supportive measures are also necessary. Platelet transfusions is not required in immune-mediated thrombocytopenia, but can be recommended before invasive procedure and surgery with platelet counts less than  $100 \times 10^9/\text{ul}$ . There are new novel approach to manage the lupus thrombocytopenia including anti-B cell therapies and thrombopoietin receptor agonists with great expectations.(12)

This case is of a poly trauma patient who was on immunosuppressive drug (MIZORIBINE 50 mg TPC, TACROLIMUS 1mg TPC) for SLE diagnosed two years ago. While preparing for operation at the intensive care unit, the patient was effectively cared with corticosteroid and IVIG for lupus thrombocytopenia refractory to platelet transfusion (Fig. 2).

#### IV. Conclusion

Although peripheral blood thrombocytopenia is rather common in SLE patients, its management can be challenging. Trauma patients may carry various underlying diseases and thus trauma surgeons should always be aware and ready for peculiar situations such as lupus thrombocytopenia in this case.

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