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Letters to the Editor – Correspondence

Plasmapheresis—A lifesaving treatment for life threatening HELLP syndrome

Dear Editor,

Hemolysis, Elevated Liver Enzymes, and Low Platelets (HELLP) Syndrome is a rare and serious complication of pregnancy characterized by microangiopathic hemolytic anemia, increased levels of liver enzymes, and thrombocytopenia. The optimal management approach of women with HELLP is highly controversial. We herein present a case of successful treatment of life threatening HELLP by plasmapheresis.

A 19 years old primiparous woman was transferred to our hospital 3 days after normal vaginal delivery at term at a different hospital. Her early postpartum period was complicated by early severe postpartum hemorrhage (PPH) necessitating massive transfusion of blood products (e.g 13 units of packed cells) which was accounted for by atonic uterus. A day following the initial major PPH, the woman developed severe hypertension, proteinuria, severe thrombocytopenia of 50,000/mm^3, anemia with reticulocytosis, elevated LDH of 20,000 U/L and up to 80-fold increased level of liver enzymes. Due to deterioration of general condition characterized by oliguria and severe uncontrolled hypertension the patient was transferred to our tertiary hospital and was promptly admitted to the intensive care unit. Coagulation studies were mildly prolonged (**international normalized ratio** 1.89), ADAMTS13 activity level was normal with the absence of schistocytes on peripheral smear. She was therefore diagnosed as HELLP syndrome.

At her admission, physical examination was remarkable for decreased air entry to both lungs and ascites. The laboratory examination was remarkable for severe renal dysfunction (serum creatinine 478 micromol/L) and extremely elevated liver enzymes (maximal AST and ALT of 3533 and 2309, respectively) (Figure 1 A 1). Computed tomography exanimation revealed a heterogeneous texture of the liver (Fig. 1B, C) in compliance with liver involvement of HELLP syndrome and severe ascites.

As the patient was diagnosed with severe HELLP, refractory to treatment by antihypertensive medications, corticosteroids, albumin and diuretics – plasma exchange therapy was initiated, resulting in significant improvement in the patient's clinical condition and laboratory abnormalities (Fig. 1A). There was a gradual resolution of the acute kidney injury and elevated liver enzymes and she was weaned of antihypertensive treatment. Due to the major PPH she suffered from, she was diagnosed during her remaining hospital course with Sheehan syndrome with undetectable serum levels of FSH, LH and TSH. Plasma exchange therapy was discontinued after 9 days and the patient was discharged at a good condition after 2 weeks.

HELLP syndrome develops in 0.5–0.9% of all pregnancies and up to 20% of all preeclampsia cases [1]. Most patients are diagnosed in the second trimester while 30% of cases are diagnosed postpartum. The maternal mortality associated with HELLP syndrome is reported to be 1.1% [2], most commonly due to cardiopulmonary complications, renal or hepatic failure, pulmonary edema, infections, hemorrhage, and disseminated intravascular coagulation.

The utilization of plasmapheresis in the management of HELLP syndrome has been scarcely reported in scattered case reports and small case series [3–5].

Plasmapheresis can replace a patient's plasma by a donor plasma (plasma exchange) and remove harmful substances in the bloodstream (pheresis). It is postulated that plasmapheresis in the setting of severe hepatic injury as in the case presented, can partially compensate for the liver dysfunction by providing coagulation factors and albumin and removing toxic substances such as endotoxins, ammonia, inflammatory cytokines and vasoactive substances. These actions are presumed to contribute to the improvement observed among patients with severe HELLP syndrome treated with plasma exchange.

As a life threatening disease, severe HELLP syndrome should be aggressively treated. Therapeutic plasma exchange is one of the available treatment options in our armamentarium for refractory HELLP syndrome.

☆ Patient's consent for publication has been confirmed and signed.

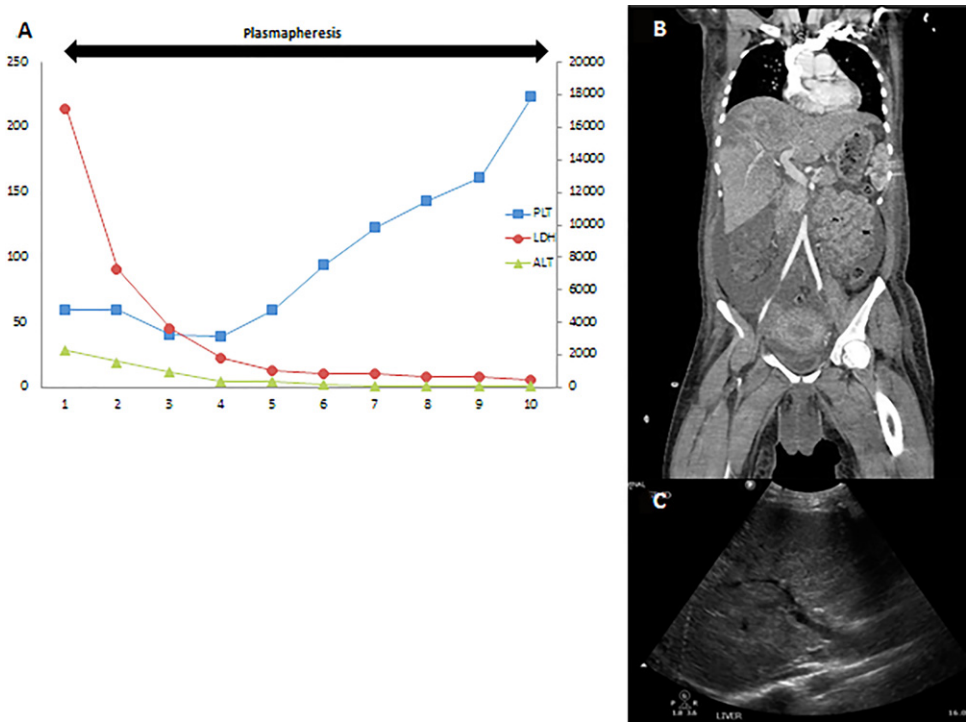

Fig. 1. A: ALT, LDH and PLT improvement as plasmapheresis is performed. B: Contrast computed tomography showing liver heterogeneous texture (lobes 7,8) and marked ascites and vulvar edema. C: Liver Ultrasound showing heterogeneous texture of the liver compatible with HELLP syndrome.

Disclosure of interests

None.

Contribution to authorship

All authors participated and contributed to data collecting, literature review and editing the report.

Details of ethics approval

A signed confirmation ofpermission form is available from the patient.

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Successful angioembolization treatment in a patient with a mechanical heart valve with hemorrhagic corpus luteum

Dear Editor,

A 23 year-old nulliparous patient presented to our emergency department due to lower abdominal pain lasting for 3 weeks with aggravation two days prior to her admission after coitus. Her history was remarkable for prosthetic aortic valve replacement 4 years ago due to regurgitating congenital bicuspid aortic valve. She was recently switched from warfarin treatment to enoxaparin, a low molecular weight heparin, as the patient was trying to conceive. At presentation, the patient was in severe pain. The physical examination was remarkable for tachycardia (135 beats per minute), bloated lower abdomen, and considerable tenderness at lower abdomen. An ultrasonography demonstrated a large amount of fluid in the abdomen with diffuse blood clots and a corpus luteum in the left ovary surrounded by blood clots. Her