Passenger lymphocyte syndrome presented as hemolytic anemia after small bowel transplantation: a case report

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Background: The passenger lymphocyte syndrome (PLS) induces hemolytic anemia after minor ABO mismatched organ transplantation. We experienced a case of PLS with hemolysis after small bowel transplantation.

Case report: A 65-year-old male underwent massive small bowel resection and right colectomy for superior mesenteric artery embolism in January 2021. Around 30 cm jejunum was left and he got end jejunostomy and was completely dependent on parenteral nutrition. He received small bowel from deceased donor on June 2021. His blood type was B Rh+ and donor was O Rh+. We used Simulect 20 mg, anti-thymocyte globulin (ATG) 1.5 mg/kg for 5 times and prednisolone 1,000 mg as an induction and then tacrolimus with trough level 13–15 ng/mL and reduced dose of prednisolone as a maintenance. Patient was stable and transfusion was not needed during the surgery. The hemoglobin level was decreased gradually from 10.4 mg/dL preoperatively to 5.6 mg/dL at POD #5. There wasn't any bleeding sign on physical exam and CT angiography. A platelet count was decreased together, 60 K at POD #5. We thought it might be ATG related bone marrow suppression and gave him RBCs and platelets with supportive care. The platelet count was low but sustained greater than 60 K and recovered over 100 K at POD #23 and last transfusion was POD #9. However, hemoglobin drop was repeated and transfusion was needed weekly till POD #27. In isoagglutinin test, anti-B IgG was detected at 1:8 titer. A haptoglobin was lower than 20 mg/dL and direct antibody test was positive for IgG and C3bd. We already used rituximab at POD #13 due to *de novo* antibody and CD19 and 20 was completely suppressed. At POD #36, there's no edema or ulcer and normal villi was observed on endoscopy. He is stable and on a diet program to reduce parenteral nutrition.

Conclusions: Most of PLS is self-limiting but often poor outcomes have been reported, awareness and suspicion are important.

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