Acquired pure red cell aplasia is a rare cause of profound anemia which is thought to be immunogenic. It has been linked to medications and underlying hematologic lymphoproliferative disorders, however has not been reported to be associated with chemotherapy. We present a case of acquired pure red cell aplasia due to chemotherapy (ifosfamide and etoposide).

60 year old male initially diagnosed with myxoid spindle cell sarcoma of the left thigh in 2017, treated with radical excision of mass with negative margins and post-operative radiation. He then developed pulmonary metastatic disease one year later and was treated with Adriamycin and ollaratumab, followed by ollaratumab maintenance. Unfortunately progressed with new pulmonary and pleural based nodules, treatment switched to gemcitabine and docetaxel, which caused a grade 3 hypersensitivity reaction which lead to therapy discontinuation. He was then started on ifosfamide and etoposide. During the course of treatment, his hemoglobin continued to decline from baseline 10-11 g/dL to 5.6-7.5 g/dL while his WBC and platelets remained in the normal range. He became symptomatic and required frequent PRBC transfusions. Further workup for anemia was negative for bleeding, hemolysis or nutritional deficiency. His reticulocyte index was 0.73 indicating hypoproliferation. Due to the concern for PRCA, a bone marrow aspiration and biopsy was performed and revealed a normocellular marrow with marked decrease in erythropoiesis consistent with PRCA. The timing of ifosfamide and etoposide coincides with his worsening hemoglobin, implicating chemotherapy as the potential cause. Chemotherapy was discontinued and switch to an alternative regimen. He was started on prednisone 1mg/kg and his hemoglobin continues to trend up and remains stable.

Acquired pure red cell aplasia is a rare bone marrow disorder characterized by the complete or nearly complete cessation of red blood cell production in the bone marrow without affecting other cell lines. Acquired PRCA can be classified as primary (idiopathic) or secondary to another condition which includes lymphoproliferative disorder, autoimmune, medication, viral infection or thymoma. Commonly implicated drugs include antimicrobials, anticonvulsants and myelosuppressive agents. Chemotherapy is typically not associated with PRCA and hence makes this a very rare and interesting case. Management includes treating the underlying cause (drug discontinuation, IVIG for persistent parvo virus, chemotherapy for hematologic malignancies and supportive with transfusions. If anemia and severe reticulocytopenia persists for more than one month or if more than one transfusion is needed on separate occasions, treatment with immunosuppressive agents such as cyclosporine and or steroids are used as first line treatment.

REFERENCES


