

in the desert with no water for 5 days. After discovery by border patrol with rhabdomyolysis, renal failure, and dehydration; he was treated at a local hospital and transferred to our Burn Intensive Care Unit (BICU) for management of his diffuse necrotic lesions of the lower extremities. The patient was immediately taken to surgery and was discovered to have liquefactive necrosis and highly vascularized lesions resulting in an unanticipated massive transfusion of over 20 units of blood products. The patient would return to the OR for multiple subsequent excisions over his hospitalization.

Perioperative Management & Case Conclusion

The patient returned to the OR approximately 36 hours later for additional debridement with the same anesthesia and surgical providers.

Preparations including additional central vascular access, tourniquet placement, and cross matching of the patient for an equal amount of blood product that was previously transfused were made prior to the start of the procedure. The patient was induced with ketamine, fentanyl, and sevoflurane without paralytic. Starting hemoglobin was 8.9 and the patient was given 1 unit of PRBCs at the start of the case. A second unit was administered as bleeding progressed and immediately upon exposure (~10ml of product), the patient experienced tachycardia to the 130s with a precipitous drop in Mean Arterial Pressure(70s→30s), SpO₂(100→83%), and supported tidal volumes (600ml→50ml). Transfusion was stopped and he was placed on 100% FiO₂, manually ventilated, given 400mcg of phenylephrine, 1.2u of vasopressin, and 100mg of Rocuronium without significant response. It was noted the patient had urticaria, flushing, diffuse wheezing. He was successfully treated with albuterol, and two boluses of intravenous epinephrine (25mcg) with excellent effects. He was additionally given 50mg of IV Diphenhydramine and 125mg of Solumedrol. Blood products were re-examined, urine and serum labs evaluating for hemolysis were sent, and the blood bank was contacted.

- Most commonly, the transfused product contains a substance the recipient is allergic to including antibodies (Ig), blood product preservatives, and the passive transfer of ingested allergens (i.e. peanuts consumed by donor)[2].
- Class specific IgE/IgG anti-IgA reactions in patients with severe IgA deficiency(sIgAD) are well characterized, however, the presence of Anti-IgA antibodies in these patients have not been conclusively demonstrated to be the cause of severe anaphylactic reactions[3].
- Most patients with IgA deficiency are asymptomatic, and those with undetectable levels of serum IgA often suffer from recurrent sinopulmonary infections from an early age. Of those with the most severe forms of sIgAD, only approx. 1 in 1400 produce anti-IgA[3,4].
- There are no formal guidelines on the screening of anti-IgA antibodies, but all blood products should be used with caution in known sIgAD patients with requisite emergency medications, personnel, and equipment available prior to initiation. Patients that require PRBCs should be transfused in consultation with a transfusion medicine specialist and can receive cells that have been washed to remove as much of the contaminating IgA as possible[5].
- The treatment of anaphylactic transfusion reactions remain nearly identical to other anaphylactic reactions with the mainstays of acute therapy being discontinuation of the offending agent, intramuscular/intravenous epinephrine, airway protection, oxygen, and volume resuscitation.
- Other agents including, bronchodilators, H1 antihistamines, and corticosteroids are often given in the setting of anaphylaxis, however their efficacy is unclear. Their evidence has been extrapolated from their use in asthma, treatment of urticaria/itching, and the theoretical prevention of biphasic reactions respectively. None of these therapies acutely relieve stridor, SOB, or upper airway edema and should only be considered after the administration of epinephrine and immediate corrective actions[7,8].

The views expressed herein are those of the authors and do not reflect the official policy or position of San Antonio Military Medical Center, the U.S. Air Force Medical Department, the U.S. Army Surgeon General, the Department of the Army, Department of Defense or the U.S. Government.



Patient Outcome

The patient underwent multiple amputations of his lower extremities. He has a history that includes recurrent infections since childhood. The patient had a severe anaphylactic reaction 20 days later.

References:

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