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Delayed Hemolytic Transfusion Reaction in a Post Operative Patient

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Abstract: ***The occurrence of jaundice in postoperative patients, as illustrated by this case of a 44 - year - old woman undergoing total abdominal hysterectomy with bilateral salpingo - oophorectomy, underscores a critical yet often overlooked complication tied to surgical interventions. This patient, initially presenting with abnormal uterine bleeding and a suspected uterine mass, experienced an uneventful surgery but developed icterus, hematuria, and malaise a day later—symptoms that pointed to a delayed hemolytic transfusion reaction (DHTR) following a single unit of packed red blood cells transfused intraoperatively. It is evident that the interplay of surgical stress and transfusion - related immune responses can precipitate such rare events, with laboratory findings like elevated bilirubin and a positive direct antiglobulin test confirming hemolysis driven by newly formed alloantibodies. This suggests that while DHTR remains uncommon, its subtle onset demands heightened clinical vigilance, especially in the postoperative window. Taking this further, the case reveals gaps in routine pretransfusion protocols and advocates for enhanced screening practices, such as extended antigen typing, to curb alloimmunization risks. Managed conservatively with hydration and monitoring, the patient recovered, but her experience serves as a compelling reminder of the need for prompt recognition and tailored care to safeguard outcomes in similar scenarios.***

Keywords: Delayed hemolytic transfusion reaction, postoperative jaundice, total abdominal hysterectomy, alloimmunization, blood transfusion complications

1. Case Report

A 44 year old female came with the complaints of abnormal uterine bleeding with a mass per abdomen.

The patient has been experiencing abnormal uterine bleeding for the past 3 weeks, which has progressively worsened. Physical examination and imaging (ultrasound) revealed a large abdominal mass suspected to be uterine in origin. The patient was diagnosed with abnormal uterine bleeding secondary to a uterine mass.

Past Medical History: No known history of cardiovascular disease, hypertension, diabetes, or hyperlipidaemia. No previous surgeries. Patient is not on any medications. No history of allergies. No history of blood transfusions.

Preoperative workup was unremarkable, with normal hemoglobin levels

Total abdominal hysterectomy with bilateral salpingo - oophorectomy was planned in view of persistent abnormal uterine bleeding under combined Spinal Epidural Anaesthesia. Intraoperatively, she received 1 units of packed red blood cells (PRBCs) due to blood loss. Approximately one day postoperatively, she presented with icterus, high coloured urine (haematuria), and malaise. Laboratory investigations revealed anemia (hemoglobin decreased from 12 g/dL preoperatively to 8 g/dL), elevated bilirubin levels (total bilirubin 5 mg/dL, indirect bilirubin 4 mg/dL), and reticulocytosis. These findings suggested hemolysis. Direct antiglobulin test (DAT) was positive, and further immunohematologic testing identified the presence of new alloantibodies.

2. Discussion

DHTRs occur when the recipient's immune system mounts a response against transfused red blood cell antigens that were not present during previous sensitization events.1 This response typically involves an anamnestic immune response, where memory B cells recognize the foreign antigens and produce antibodies, leading to hemolysis. This process can take several days to weeks to manifest clinically. The diagnosis of DHTR in this patient was confirmed by the positive DAT and the presence of new alloantibodies.2 Management of DHTR involves supportive care, including close monitoring of hemoglobin levels and renal function, and avoiding further transfusions of the antigen - positive blood. In this case, the patient was managed conservatively with hydration and supportive care, and her symptoms gradually resolved over the next two weeks. Preventing DHTR involves meticulous pretransfusion testing, including extended red cell antigen typing and antibody screening. In patients with known antibodies or a history of transfusions, matching for minor blood group antigens can reduce the risk of alloimmunization.

3. Conclusion

This case highlights the importance of recognizing and managing delayed hemolytic transfusion reactions, a rare but serious complication of blood transfusion. Clinicians should maintain a high index of suspicion for DHTR in postoperative patients presenting with signs of hemolysis, even if the initial postoperative period was uneventful. Prompt diagnosis and appropriate management are crucial for patient recovery and minimizing complications.

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