

TRANSFUSION COMPLICATED BY SHOCK

Case study by Jim Perkins, M.D. (©2009)

ANSWERS

1. What is your differential diagnosis?

The differential diagnosis includes:

- *An anaphylactic reaction to the transfused platelets.*
- *An anaphylactic reaction to amphotericin, slightly delayed*
- *An anaphylactic reaction to penicillin in the platelet unit might be considered due to the patient's history of penicillin allergy. However, donors taking antibiotics are only accepted if the antibiotics are being given for prophylactic purposes, and this would be an unlikely circumstance in the case of penicillin.*
- *Transfusion related acute lung injury (TRALI) might be considered initially, but TRALI would not be likely to respond to the therapy given, and the chest x-ray did not change.*
- *Pulmonary reactions have been reported when amphotericin and platelets were given in close temporal proximity. These reactions were thought to be due to large numbers of leukocytes in the transfused units interacting with the drug, which damages cell membranes. At the time of this transfusion leukocyte reduction was not routine. Nonetheless, the chest x-ray did not change, and the clinical features of the reaction were most consistent with an allergic phenomenon.*

2. What course of action would you suggest?

One could have immediately provided plasma-reduced or washed platelets. However, allergy to amphotericin was a strong possibility, and committing the patient to always receiving washed platelets would significantly complicate his care. In view of these facts we elected to perform a repeat platelet challenge with full support (e.g. small test dose, epinephrine at bedside, etc.) in order to prove the diagnosis of an allergic reaction to platelets.

3. Does this establish a diagnosis?

The diagnosis of an allergic reaction to platelet transfusion is proved.

4. How would you provide safe platelet transfusions for the patient?

Platelets with a reduced quantity of plasma must be provided. In many cases reactions can be prevented by simply removing the plasma from the unit and re-suspending the platelets in saline. This leaves a small amount of plasma antigen behind however, and very sensitive patients may require the addition of a washing step. Because of the severity of his reaction, we elected to provide washed platelets to this patient from the outset.