

Visual inspection of platelet concentrates; still an essential prerelease check

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Bacterial contamination occurs in approximately 1 in 3000 platelet concentrates (PCs) and may induce sepsis in approximately one in six recipients of the contaminated product.^[1] Microbial contamination accounted for the third most common cause of transfusion associated fatalities reported to the US Food and Drug Administration between 2005 and 2009.^[2] At our institute, platelets are prepared after blood collection following stringent donor selection and skin disinfection. Culture is done for 1% of units prepared as per the regulatory requirements for the quality control of blood components.^[3] We report the detection of a large fibrinous coagulum in a platelet concentrate on the 4th day of shelf life [Figure 1], sometimes referred to as “Egg drop soup platelets”.^[4] Swirling was absent in the unit, pH was 6.5 (range: 6.55–6.70 on day 3), sugar was 0.2 mmol/l (range: 18.8–20.2 mmol/l at day 3), and ionized calcium was 0.73 mg/dl (normal, <0.5 mg/dl).^[4-6] Blood culture (BACTEC 9240 system; Becton, Dickinson & Company, Sparks, MD 21152, USA) detected growth. The organism was characterized as *acinetobacter calcoaceticus-baumannii* complex. *Acinetobacter* is a ubiquitous bacterium known to be part of skin flora and usually colonizes reusable phlebotomy tourniquets. The increasing clinical interest in the genus *acinetobacter* is mainly attributed to its capability to cause a wide range of nosocomial infections. This is due to the unusual ability of this gram negative organism to survive in

dry conditions for prolonged periods and acquire as well as upregulate antibiotic drug resistance determinants. Contamination of platelets with gram negative *acinetobacter* is more likely to result in septic fatality. Bacterial cultures prior to issue of platelet preparations has become standard practice in various developed countries, however, similar implementation still has a long way to go in developing countries due to cost constraints and inventory logistics. Thus a rapid and cost effective point of care test and thorough visual inspection can help in minimizing septic transfusion events in patients.

References

1. Hillyer CD, Josephson CD, Blajchman MA, Vostal JG, Epstein JS, Goodman JL. Bacterial contamination of blood components: Risks, strategies, and regulation: Joint ASH and AABB educational session in transfusion medicine. *Hematology Am Soc Hematol Educ Program* 2003;575-89.
2. Center for Biologics Evaluation and Research, Food and Drug Administration, U.S. Department of Health and Human Services. Fatalities reported to FDA following blood collection and transfusion. Annual Summary for Fiscal Year 2009; 2009. Available from: <http://www.fda.gov/downloads/BiologicsBloodVaccines/SafetyAvailability/ReportaProblem/TransfusionDonationFatalities/UCM205620.pdf>. [Last accessed date 2012 Jun 19].
3. Malik V. *Drugs and Cosmetics Act, 1940*. 16th ed. Lucknow: Eastern Book Company; 2003. p. 279-303.
4. Hay S, Brecher M. Egg drop soup platelets: Gross bacterial contamination of a platelet product. *Transfusion* 2007;47:1335-6.
5. Bertolini F, Murphy S. A multicenter inspection of the swirling phenomenon in platelet concentrates prepared in routine practice. Biomedical Excellence for Safer Transfusion (BEST) Working Party of the International Society of Blood Transfusion. *Transfusion* 1996;36:128-32.
6. Böck M, Rahrig S, Kunz D, Lutze G, Heim MU. Platelet concentrates derived from buffy coat and apheresis: Biochemical and functional differences. *Transfus Med* 2002;12:317-24.



Figure 1: Photograph depicting large fibrinous coagulum in a platelet concentrate

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