A Case of Floating Gel
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CASE DESCRIPTION
Two unrelated patients underwent coronary angiography and a percutaneous intervention. At the end of the procedures, blood was collected (Vacutainer® SST™; BD) for troponin, creatine kinase (CK), and CK-MB isoenzyme analysis. After centrifugation with the Roche Modular Pre-Analytics system (Roche Diagnostics), pipetting error alerts were triggered on the aliquoting module of the Pre-Analytics system. Investigation revealed that the separator gel had migrated above the serum (Fig. 1A), preventing separation of the serum from the cells (Fig. 1B). A second collection obtained from each patient 2 h later manifested proper gel separation, and error-free measurements were accomplished.

QUESTIONS
1. What caused this anomaly?
2. Could accurate laboratory results be obtained on serum manually extracted from beneath the gel layer?
3. What can be done to avoid this occurrence in the future?

The answers are on the next page.
Both procedures used iodinated contrast media, iohexol (Omnipaque 350; GE Healthcare) in this case. The cause of the “floating gel” was an increase in serum density from residual contrast dye still present in the catheter used for the procedures (1). Laboratory tests should not be performed, even if the serum is extracted from beneath the gel barrier. The effect of residual dye is unknown, but laboratory results may be falsely low because of dilution with contrast media or be erroneous owing to interference with the assay itself (2, 3). This phenomenon can be avoided by properly flushing lines prior to sample collection (4) and/or waiting at least 1 half-life (approximately 20 min) before collecting a peripheral blood sample.

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References

News & Views

Handling False Positives in the Genomic Era

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The genomic era is upon us, promising to individualize medicine and creating a buzz among scientists, physicians, and the general public alike. Although it is easy to become entwined in the excitement and anticipation of the impending medical revolution, scientists and clinicians must be vigilant about novel and unexpected scientific findings to prevent genomics from tarnishing its own reputation with a major blemish: false positives. A recent “Commentary” article in the journal Nature highlights the prevalence and negative impact of false-positive publications and discusses strategies to avoid reporting false positives as novel findings (1).

False positives are not new to the world of science; however, the ease with which a study can accidentally generate false positives has dramatically increased owing to the contemporary availability and production of massive and complex data sets. Generating such large amounts of data inevitably leads to greater numbers of tests performed, allowing apparently stronger signals to emerge by chance with greater frequency than our...