



DNA Testing Verifies Identity of Mislabeled Prostate Specimens

BACKGROUND

Two positive prostate biopsy specimens were switched at a practice's in-house pathology lab. The issue was uncovered by the use of Strand Diagnostics' **know error**[®] **system** after the tissue samples submitted for two patients biopsied at the practice did not match the DNA reference samples collected via cheek swab at the time of their biopsy procedures. The lab manager was notified immediately of the discrepancy so that additional testing could be performed to properly identify the origin of the tissue samples in question. She was also instructed to let the physician know about the incident to avert any improper treatment of the patients involved.



MATERIALS AND METHODS:

The genetic profile of the tissue submitted for Patient A did not match the profile obtained from his DNA reference sample. Instead, it was a match for the reference sample submitted for Patient B who was biopsied at the practice on the same day. The DNA testing results for Patient B yielded a similar conclusion; his tissue matched the reference sample submitted for Patient A.

Additional tissues were submitted for both patients to confirm the findings. As with the preliminary report, this second round of testing also indicated that the resubmitted tissues did not match the original reference samples for either patient. To further the investigation, new DNA reference samples were collected for both patients to be tested against the original swabs and tissues.

RESULTS:

Results from this last round of testing showed that the genetic profiles obtained from the replacement swabs matched the original swabs, but were a DNA non-match for the respective tissues submitted for each patient. The original and new swabs for Patient A were a match for the tissues submitted for Patient B. And as expected, the

original and new swabs for Patient B were a match for the tissues submitted for Patient A.

This confirmed the suspicion that the tissue blocks had been switched at the laboratory. Further conversations with physicians and laboratory staff revealed that the tissue blocks were not labeled correctly which ultimately caused the switch to occur.

CONCLUSIONS:

This particular case reveals that sample misidentifications can occur in any environment, even in a closely-monitored, in-house pathology laboratory. Because the **know error**[®] **system** was used as part of routine clinical practice, this problem was identified prior to any unnecessary treatment of either patient. This intervention also protected the practice which might have been liable for medical malpractice costs associated with a misdiagnosis. Strand continues to provide clinical support to help the practice deliver a higher standard of diagnostic accuracy and patient safety.