

## Justice or junk science? Critics argue bite-mark testimony should be abandoned

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A young father of three was beaten in his bed with a crowbar, his wife thrown to the bedroom floor and sexually assaulted as her dying husband took his final, labored breaths.

The horrific events of Sept. 14, 1982, led to another tragedy: As many as six dentists believed bite marks made by the killer on the woman's legs were caused by Keith Allen Harward, an innocent man who would spend the next 33 years in prison.

"In light of this case, I imagine that dentists who are still engaged in this grossly unreliable practice have to take a long hard look in the mirror," said M. Chris Fabricant, with the Innocence Project. "It's unconscionable that they continue to do this," he said.

Fabricant helped represent Harward, now 60, who was freed this month after DNA testing cleared him of the Newport News crimes and implicated a former

Navy shipmate. Harward's case is the most recent of more than two dozen wrongful convictions resulting, at least in part, from bite-mark testimony.

A record number of dentists, some with vaunted reputations in the field, got it wrong in a case where the stakes could not have been higher — Harward could have been sentenced to death. Their failure proves the problem isn't with occasional errant experts, but rather with an entire forensic technique that is not based on science and that does not belong in a courtroom, his lawyers say.

The Innocence Project hopes Harward's exoneration leads to a national review of old bite-mark cases comparable to one underway by the FBI, the National Association of Criminal Defense Lawyers and others of old microscopic hair analysis, another forensic technique that has contributed to wrongful convictions.

A similar bite-mark effort, however, would require support of forensic dentists, also known as forensic odontologists. So far, that support has been missing.

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**No lights** were on in the house during the early-morning, 1982 attack, and the rape victim could not identify Harward as the assailant. Police believed the killer, who wore an enlisted man's Navy uniform, was on the crew of the USS Carl Vinson, an aircraft carrier docked in the shipyard just a few blocks from the victims' home and where a tracking dog led them soon after the attack.

The Innocence Project assembled a report on the involvement of dentists in the case using police and court records.

A "Dr. Lutkus" — no first name available — was a Navy dentist on the ship where Harward and shipmate Jerry L. Crotty were stationed. Lutkus coordinated a dental screening of the ship's crew who fit the general height and weight of the assailant as described by the rape victim.

Naval dentists looked at dental records and X-rays, and individuals with certain dental traits were visually examined by Lutkus and his team. To further winnow the potential suspect list, the Navy sought dental impressions from a handful of sailors with which a Tidewater-area dentist, Dr. Robert T. Banes, performed bite-mark comparisons.

Harward was selected for additional screening, says the Innocence Project. But in late 1982 Banes excluded him as the source of the bite marks based on his dental impressions.

Harward came to the attention of police after he bit his girlfriend during an altercation. On April 20, 1983, he agreed to have a second mold made of his teeth.

Dr. Lowell Levine of New York, a charter member of the American Board of Forensic Odontology with an international reputation in the field, and Dr. Alvin Kagey, a forensic odontologist from Virginia, independently decided that Harward's dental molds matched photographs of the bite marks and testified that Harward's teeth matched the bites to within "reasonable scientific certainty" and "reasonable medical certainty," respectively.

They said that, as a practical matter, no one else could have left the bite marks.

Harward, arrested on May 16, 1983, was tried twice — once for capital murder in 1983 and sentenced to life instead of death. That conviction was tossed out on technical grounds and he was retried for first-degree murder, convicted and again sentenced to life in 1986. He also was convicted of rape, robbery and forcible sodomy.

The Innocence Project says it was after Levine and Kagey implicated Harward that Lutkus and Banes felt Harward was the biter.

Prior to each of Harward's trials, his defense lawyers consulted with forensic dentists. In the first trial the lawyers consulted with Dr. Stanley Schwartz, who taught at the School of Dental Medicine at Tufts University in Boston and who, like Levine, was a charter member of the ABFO.

Kenneth B. Murov, one of Harward's lawyers in his first trial, wrote in a memorandum to Harward in December 1983 that, "The hope was that Dr. Schwartz would come up with an opinion regarding this case that was different from ... Dr. Lowell Levine and Dr. A.W. Kagey. Unfortunately, Dr. Schwartz's conclusions were consistent with Drs. Levine and Kagey,"

Roy Lasris, Harward's lawyer in his second trial in 1986, consulted with Dr. Louis M. Abbey, a professor at the VCU schools of Medicine and Dentistry. Lasris and the Innocence Project said Abbey was not called as a witness because he also concurred with the conclusion of the prosecution's experts and because he was not ABFO-certified, as were Levine and Kagey.

Schwartz is deceased, Lutkus could not be located and Banes could not be reached for comment.

Abbey, retired and living in the Boston area, could not recall the case. He wrote in an email to the Richmond Times-Dispatch that he was involved in several hundred cases during that time, as well as completing more than 200 identifications of individuals in Vietnam using dental records.

"In general, however, bite mark analysis is not and has never been a very accurate method of human identification," Abbey wrote. "Human flesh is so variably responsive to trauma that it does not preserve bite marks very well. At best, bite marks in human flesh can be supportive or not supportive in the company of other evidence."

Abbey added, "I find it hard to believe that six dentists agreed on the bite mark evidence in a single case. Since I don't recall the case, this is probably moot. There is no doubt that DNA evidence analysis has taken most of the pressure off bite mark analysis, if not replaced visual analysis, since DNA can usually be recovered from bite marks. Fortunately during my tenure with medical examiner work bite

mark analysis was rarely necessary.”

Levine, also contacted by email, said he was working on a response to questions about the case but did not forward one last week.

In recent interviews, Kagey, who lives in the Roanoke area, told The Times-Dispatch he was stunned to learn that DNA had proven Harward innocent and described the match between the bite marks and Harward's teeth as “textbook.”

Fabricant said, “This was the only case we’re aware of where the defense was unable to get an expert to testify on his behalf, which is really, really unusual, particularly how subjective the technique is. Many of them are cowed by Lowell Levine’s international reputation.”

“This was considered really, very high-quality, textbook bite-mark evidence and unlike many of the other cases there was no question in this case that they were actually bite marks because the victim lived and testified that she’d been bitten by the perpetrator,” Fabricant said.

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**David LaBahn**, president of the Association of Prosecuting Attorneys, recognizes there have been wrongful convictions involving bite marks and that prosecutors must learn from exonerations. But he says bite-mark evidence has its place in criminal prosecutions so long as its limits are recognized.

“To say that any piece of forensic evidence should be inadmissible on behalf of prosecutors — that’s an extreme measure,” he said.

Reached by telephone last week, the current president of the ABFO, Dr. Adam J. Freeman of Westport, Conn., said he is familiar with Harward’s case.

“We are terribly concerned about cases like this — a man losing 33 years of his life due to faulty forensic evidence is concerning. I can think of nothing, personally, more terrifying than being in jail, being innocent and not being able to find some post-conviction relief,” he said.

A 2009 study by a committee of the National Academy of Sciences concluded that there was not enough research available yet on the accuracy of bite-mark comparisons and that, while bite-mark comparison might be useful in excluding suspects, there was no evidence of an existing scientific basis for identifying an individual to the exclusion of all others.

And, earlier this year, the Texas Forensic Science Commission recommended a statewide moratorium on the use of bite-mark analysis in prosecutions.

Freeman said the ABFO has changed its standards and guidelines and the group no longer sanctions specific biter identifications in cases like Harward’s. Instead, forensic odontologists decide if comparisons either exclude or cannot exclude someone as the biter, or that there was insufficient information to decide one way or the other.

“The Innocence Project would essentially like us to say, ‘Well, that’s a bite mark so let’s not do anything.’ And that, to me, is not acceptable. What we need to do is put that evidence in the proper context,” Freeman said.

He said odontologists can attempt to recover DNA from a bite mark, determine if the bite mark was human or from an animal and can help police screen suspects.

For example, if the biter had only six upper teeth, a suspect with two upper teeth can be excluded.

Freeman said a forensic odontologist can conclude that a suspect is not excluded as a biter. "By saying that, you're not saying this is the only person in the whole world that made this bite," he said. He said bite-mark evidence should not be used as sole, absolute evidence, but rather as supportive evidence along with other factors that may implicate someone in a crime.

"Bite marks are taking a big hit, and to some extent rightfully so because there are cases like this," conceded Freeman.

He said that because the ABFO no longer sanctions specific biter identities, it should give someone convicted in large part on such testimony the potential for a new trial or at least a hearing for some post-conviction help.

Freeman said any dentist who has done forensic bite-mark comparisons should look at their old cases, see if their conclusions still are supported by the current ABFO guidelines and, if they are not, come forward and change their earlier opinions.

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**A problem**, Fabricant said, is that as far as he knows no one with the ABFO has ever contacted him or anyone else at the Innocence Project with concerns about their prior cases. As the director of strategic litigation for the Innocence Project, Fabricant looks for cases such as Harward's across the country.

According to a Feb. 26 letter from FBI Director James Comey to state governors seeking old trial transcripts, the aim of the bureau's review of microscopic hair comparison analyses is to ensure that the FBI laboratory examiners' testimony met accepted scientific standards. In cases in which those standards were not met, remedial action may be taken if appropriate.

The Innocence Project contends that many forensic techniques such as hair microscopy, bite-mark comparisons, tool-mark analysis and shoeprint comparisons have not been subjected to sufficient scientific evaluation. Other techniques that have been properly validated, such as blood typing, sometimes are improperly conducted or inaccurately conveyed in trial testimony.

Of the 337 DNA exonerations in the country, unvalidated or improper forensic science was the second most frequent contributor to wrongful convictions, says the Innocence Project.

Fabricant said that, in the FBI hair review, the bureau knows in which cases its hair analysts made comparisons. There is no such central registry for bite-mark comparisons — only the dentists know all the cases.

"The difference between the FBI (examiners) and these dentists is that the dentists are all worried about being sued," Fabricant said. "Their fear of litigation is driving them underground and they have an ethical, moral and legal obligation to turn over the list of cases and allow organizations like the Innocence Project to examine these cases and to find the rest of these Keith Harwards."

He said bite-mark evidence played a role in the convictions of at least 15 people on death rows across the U.S., and the Innocence Project knows of at least four capital cases where the prosecution is seeking to introduce bite-mark analysis. At least one person has been executed in Virginia — Lem Tuggle Jr., who was convicted in part with bite-mark evidence.

The Innocence Project said the ABFO's new standards are a step in the right direction but not enough. They point out that Harward was initially excluded as the biter and then included. "There is no more evidence experts can reliably exclude anyone than there is for inclusion," Fabricant said.

He said real progress would be a moratorium on bite-mark comparison evidence and audits of prior cases where it was used.

Harward's parents did not live to see their son walk out of prison an exonerated man on April 8. Fabricant said that at Harward's first trial, his mother had to beg for his life from the witness stand.

Dana Delger, a state lawyer with the Innocence Project, said, "Hopefully Mr. Harward's case will once and for all persuade judges and law enforcement that this unreliable evidence has no use in criminal prosecutions."