CORRESPONDENCE


Sir:

We found Dr. Blanco-Pampin’s article interesting and timely as we had two suicidal deaths involving solid explosives in our jurisdiction in 1999. A review of our records from 1995–2000 revealed one additional example of this unusual and rarely documented phenomenon. Like the author’s cases, our victims were all male (and to our knowledge no female cases have ever been reported) and all showed extensive direct blast injuries of the head, with obliteration of the head, chest and proximal upper extremities in one case. It was unclear from our reading whether the author’s victims employed more readily available recreational fireworks in committing suicide or whether commercial solid explosives were employed. Case reports of both types exist (1,2). In our cases, one involved the use of a recreational “quarter-stick” firework, which the decedent was observed to place in his mouth and light. The other two cases involved the intraoral detonation of a commercial blasting cap and the detonation of an unknown amount of dynamite with the decedent in a kneeling or prone position. The former case involved an explosives salesman and the latter an employee of a demolition company. It would be curious to know if the reported decedents’ occupation or previous employment required familiarity with explosives and whether they had ready access to explosives. In one large series (3) these factors were present in over half of the 25 cases reported. Our thanks to Dr. Blanco-Pampin for his thorough report.

Deborah Mitchell, M.S.
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Office of Chief Medical Examiner
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References

Author’s Response

Sir:

I would like to thank D. Mitchell and T. Gilson, of The Office of Chief Medical Examiner of New Hampshire (USA), for their comments regarding my article, of two cases of suicide using fireworks (1).

In their letter they make a series of interesting observations regarding the previous occupations of victims and their familiarity with the handling of explosives. In addition, they provide a review of their records with personal experiences, similar to the ones in my article, which are particularly valuable.

In the cases reported, both individuals committed suicide by available recreational explosives. Neither of them had previous employment related to explosives. In Case 2, the victim had used flare rockets for entertainment in fun and games. In Case 1, familiarity with explosives was investigated, but remains unclear.

Spanish legislation concerning fabrication, transportation and use of firearms and commercial solid explosives is very limiting (2). All related activities are under severe control by the Ministry of Industry and the Police Department (Guardia Civil). Nevertheless, recreational fireworks (pyrotechnics) restrictions are minimal. Those of an adult age who wish to, can purchase them.

Reference
CORRESPONDENCE 1527

Author’s Response

Sir:

We appreciate Mr. Paul Brauner’s comments concerning our article. We have had a similar experience with STR testing on patients who have received multiple blood product transfusions, having never found evidence of a mixture. In the case described in our article, we wanted to exclude all potential sources that could have resulted in a mixed sample. Consequently, for completeness, we inquired whether this may have occurred, knowing that it was quite unlikely to produce the results we detected. We agree with the observations cited in the references he has provided. Blood transfusions will not alter STR typing results under most circumstances.

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Sir:

The importance of the recent paper by Muñoz et al. cannot be overstated. Their assertion that the PMI (post mortem interval) must be deployed as the independent variable, and the K⁺ as dependent in any regression based procedure used to establish a calibration function for PMI is entirely correct. This is because the converse arrangement must lead to bias, where estimates for short PMI’s are systematically longer than the real PMI, and estimates for long PMIs shorter than the real PMI. The magnitude of the bias being equal to 1-\(r^2\) where \(r\) is the correlation coefficient, and follows as a result of the algebra of regression analysis. As \(r^2\) in this case is relatively small the potential bias is therefore large. A formal proof is given by Aykroyd et al (1), resulting from their work on age estimation and regression analysis. The same result can be found in the work of Eisenhart (2) and Draper and Smith (3).

It is important that all those in the forensic science community who employ regression analysis to derive calibration functions do so fitting the variables the correct way round. There are no hard and fast rules about which way as it is determined largely upon the dependency structure of the system. A useful rule of thumb is that the variable which is not affected by the other is the independent (x). This is easy to see in the case of K⁺ and PMI as the level of K⁺ cannot affect the PMI, the PMI affects K⁺. In other cases the position may not be so obvious, and the forensic scientist may have to consult a statistician.

References
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