**When clothing analysis remains the only solution**

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*Objectif* In rare cases, no biological specimen conventionally used in postmortem analysis is available and only alternative matrices can be used. This case demonstrate thatalternative matrices, such as clothing, could prove useful when other specimens are not available.

*Case history* a skeleton was found partially undressed under a concrete slab. Skeleton remains were transferred to forensic institute for anthropological examination. A 10 cm fragment of left femoral diaphysis is taken for DNA identification. As the magistrate refused that the toxicological analysis be carried out on the bone remains, clothes are sent to the laboratory for toxicological expertise.

*Methods* a jacket, a pant and two unidentified pieces of fabric were sent to the laboratory. Seven 3 x 3 cm small pieces (P) were cut at the areas of the fabric that could have been in contact with biological fluids : one at the collar of the jacket (P1), two at the trouser fly (P2-P3), one at the trouser crotch (P4) and three at the unidentified pieces of fabric (P5 to P7). All samples were submitted to UPLC-MS/MS analysis on an Acquity class I ultra-high performance liquid chromatography coupled to a Xevo TQD tandem mass spectrometer from Waters (Milford, MA, USA) after liquid-liquid extraction in alkaline condition (dichloromethane/isopropanol/*n*-heptane ; 25:10:65, v/v/v). Chromatographic separation was achieved using a Waters Acquity HSS C18 column (150 x 2.1 mm x 1.8 µm).

*Results the* analyzes screening show the following results (table 1) :

|  |  |
| --- | --- |
| **P1** | tiapride, venlafaxine and tramadol |
| **P2** | tramadol |
| **P3** | tiapride and tramadol |
| **P4** | absence |
| **P5** | absence |
| **P6** | absence |
| **P7** | absence |

The anthropological examination allowed to determine that the victim was a male, older than 60, whose stature is between 164 and 170 cm. The postmortem interval was estimated to be less than two years. No evidence of violence was highlighted. DNA analysis allowed to identify the victim, a 67-year-old man missing for two years. According the officers leading the investigation, the victim did not undergo any treatment and the identified psychoactive drugs could have contributed to death.

*Conclusion* clothing analysis allowed to document an antemortem intake of psychoactive drugs. Although quantitative interpretation is unrealistic [1-2], these results provided a useful contribution to the investigation.

*References*

[1]. Tracqui A et al. The detection of opiate drugs in nontraditional specimens (clothing): a report of ten cases. [J Forensic Sci.](https://www.ncbi.nlm.nih.gov/pubmed/?term=clothing+analysis+and+Tracqui+A%5Bau%5D) 1995 ; 40(2) : 263-265.

[2]. [McDermott SD](https://www.ncbi.nlm.nih.gov/pubmed/?term=McDermott%20SD%5BAuthor%5D&cauthor=true&cauthor_uid=16382839) & [Power JD](https://www.ncbi.nlm.nih.gov/pubmed/?term=Power%20JD%5BAuthor%5D&cauthor=true&cauthor_uid=16382839). Drug smuggling using clothing impregnated with cocaine. [J Forensic Sci.](https://www.ncbi.nlm.nih.gov/pubmed/16382839) 2005 ; 50(6) : 1423-1425.

*Conflict of interest :* none