

CASE REPORT

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Drug Smuggling Using Clothing Impregnated with Cocaine

ABSTRACT: A case study is presented where a woman travelling from South America to the Republic of Ireland was detained at Dublin Airport and articles of clothing she had in her luggage were found to be impregnated with cocaine. The study shows that the amount of powder recovered from the garments was approximately 14% of the total weight of the garments. The cocaine was in the form of cocaine hydrochloride and the purity was approximately 80%. An examination of the garments under filtered light highlighted the areas exposed to cocaine and indicated that the method of impregnation was by pouring liquid containing cocaine onto the clothing.

KEYWORDS: forensic science, cocaine, drug smuggling, impregnated clothing

Cocaine smuggling is a common occurrence and has been attempted by a variety of novel methods including concealment in wax (1), in canned liquid (2) and in baseball caps (3). The “body packer” method where the cocaine is concealed within the body by swallowing small packages of cocaine is quite common but has led to many fatalities when the packages burst inside the smuggler (4,5). Smuggling cocaine using clothing impregnated with the drug is not new (6). However, we wish to report here how the drug can be visualised on the garments, extracted and a quick estimate given on the amount of cocaine present.

Case Details

In June 2002, a Brazilian woman was stopped in Dublin Airport getting off a flight from Sao Paolo (Brazil) via Madrid (Spain). Included in her luggage were six pairs of jeans which had a stiff appearance. The suspicions of the Customs Officer were aroused by the smell of “moth balls.” The strong smelling “moth balls” are frequently used to reduce the likelihood of detection of drugs by dogs. The articles were submitted to the forensic science laboratory for examination. Analysis showed each garment to contain cocaine.

Materials and Methods

Analysis of cocaine was conducted on a HP 6890 GC equipped with a 5973 MS.

GC Conditions

Column: HP Ultra-1 (Crosslinked Methyl Siloxane, 12 m in length, 0.2 mm internal diameter, 0.33 μ m film thickness; Helium

flow 1 mL/min, 50:1 split ratio. Temperature programme: Initial temp: 60°C for 2 min. Then the temperature was increased from 60°C to 180°C at 15°C/min with no hold time. Then it was ramped from 180°C to 290°C at 25°C/min with a final hold time of 3 mins. The total run time is 17.4 min.

MS Conditions

Low mass 40, High mass 550 with a solvent delay of 1.5 min. Methanol was obtained from Lab Scan Analytical. KBr was obtained from Aldrich Chemicals. Cocaine hydrochloride standard was obtained from Macfarlan Smith. Infra-red analysis was carried out using a Nicolet 510P spectrometer. The powder samples were mixed with KBr to form a disc. The cocaine content (purity) of the powder from the clothing was determined by GC/MS using a standard curve constructed using a series of cocaine hydrochloride solutions of known concentration. The light source for examining the clothing was a Quasar 100 using an excitation filter in the range 503–591 nm, viewed through a 593 nm viewing filter and photographed using the same system.

Estimation of Cocaine Content of Clothing

Two methods were used to estimate the cocaine content of the jeans: (i) Patches method. A patch of cloth 7 cm \times 7 cm was cut from the front thigh of each pair of jeans. This was weighed and the placed in a beaker with 100 mL of methanol. After boiling for 15 min, the patch was removed and air dried. The methanol was allowed to evaporate in a stream of air and the resulting powder was weighed and analysed. The results are presented in Table 1. (ii) Method using half of the garment. Three of the pairs of jeans were cut in half lengthwise and one half of each of the three pairs was placed in a separate plastic container. Methanol (1.5 L) was added, agitated with a large spatula and allowed to sit overnight. The methanol was poured off and the jeans were squeezed dry. The

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TABLE 1—Yields of powder from patches of cloth 7 cm × 7 cm.

Item Number	Weight of Patch (g)	Weight of Powder (g)	% Yield
1	3.218	0.739	22.9
2	3.028	0.825	27.2
3	2.278	0.473	20.7
4	3.054	0.704	23.0
5	3.106	0.671	21.6
6	3.157	0.632	20.0

TABLE 2—Yields of powder from garments split in two.

Item Number	Weight of Garment (g)	Weight of Powder (g)	% Yield
1	534.8	77.0	14.4
4	519.7	74.1	14.3
5	523.7	67.3	12.9

methanol was then allowed to evaporate and the resulting powder was weighed and analysed. The results are presented in Table 2.

The cocaine was determined (by infra-red analysis) to be in the form of cocaine hydrochloride. The purity of the cocaine ranged from 77% to 83% (average 80%), determined as cocaine hydrochloride.

Results and Discussion

It can be seen from Table 1 that there is good agreement between the amount of cocaine extracted from each garment, ranging from 20.0% to 27.2% (average 22.5%). Similarly from Table 2 there is consistency between the amount of cocaine recovered from each garment (12.9%, 14.3% and 14.4%, average of 13.9%). This difference in % recovery between the two methods could be a result of: (a) the extraction method being more efficient for the patches and (b) the cocaine not being distributed evenly over the garments.

It is reasonable to assume that the extraction was more efficient for the patches than for the larger portion of fabric because of the fact that the methanol was boiled during the extraction of the patches and the general difficulty in dealing with a larger amount of fabric.

We visually examined the jeans to determine if there was any evidence of uneven distribution and found some areas which appeared to have a less stiff appearance. In order to determine the exact distribution pattern, the jeans were subjected to a high intensity light source fitted with various filters. The Quasar 100 light source used is frequently used in fingerprint examination. It can be seen from Fig. 1 that some areas are brighter than other areas. The darker areas corresponded with the areas which were less stiff to touch. It can be reasonably assumed that these areas had not been exposed to cocaine. This was confirmed by examining, using the same light source, the patches from which the cocaine had been extracted and these had the same dark appearance.

The darker areas of the jeans included the outside pocket, waistband, beltflaps and along the seams. This led to the question of how the cocaine was put onto the jeans. It was initially presumed that the jeans were immersed in a liquid containing cocaine and then allowed to dry, however this would not account for the absence of cocaine on the areas outlined above. It is clear that the jeans were initially turned inside out, and the liquid (containing cocaine)



FIG. 1—Photograph of jeans impregnated with cocaine; darker areas corresponding to where cocaine was absent.

was poured onto the garment with the garment effectively acting as a vessel with the seams and waist band as the outer rims of the container.

The true figure of the amount of cocaine on the clothes is therefore better estimated using method (ii) because of the uneven distribution of cocaine on the clothes. Method (i) can be used to get a quick upper limit estimation. The total weight of the garments was 6221 g. The average yield of powder based on method (ii) was 13.9% thus giving an estimated 864.7 g of powder in the six garments. Using 80% as the average purity, the yield of cocaine hydrochloride would be 691.8 g.

Conclusion

This case report outlines a procedure for the easy estimation of the amount of cocaine in cases where articles of clothing are impregnated with the drug. The study shows how light may be used to indicate the areas which have been exposed to cocaine and to give an opinion on how the cocaine was put onto the garments. The person found in possession of the cocaine in this case is currently serving a prison sentence for the offence.

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