



FORENSIC FILES

Taking fingerprints from a decomposed body using the 'indirect cadaver hand skin-glove method'

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A woman reported her husband missing after he allegedly went for a run early on a Sunday morning. She nevertheless insisted that her parents-in-law should come for a Sunday lunch to which they had been invited.

When the husband had not returned by 18h00 that night his relatives reported him to the police as missing.

Exactly 2 days later a body was retrieved from a highly polluted river running through a suburb of Cape Town. The body was already in a state of decomposition, being bloated and discoloured, with gas distension of the abdominal wall. Extensive slipping of the skin was present, especially over the shoulder and back regions. The face was particularly swollen and covered with a thick, sticky brownish-black film (Fig. 1).



Fig. 1. Swelling and bloating of face, blackening of skin and protrusion of tongue.

Deon Knobel qualified MB ChB at the University of Stellenbosch in 1962, and completed his internship at Karl Bremer Hospital. He accepted a post as State Medical Officer in 1963, and in 1968 completed the MMed in Anatomical Pathology (no postgraduate degree in Forensic Pathology as yet existed at the Cape Town or Stellenbosch medical schools). Returning full-time to Orange Street, he was promoted through the ranks to Senior State Pathologist and eventually Director of State Pathology Services for the Cape Province. In May 1985 he succeeded Prof L S Smith as Chief Specialist/Professor in a tripartite position for the State, the Province and the University of Cape Town. He became well known and respected for his teaching skills, and in the year 2000 received a Distinguished Teacher Award from UCT. He retired in 2004.

The arrow of a crossbow was firmly embedded in the skull, having perforated the skull cavity from side to side with 2.0 cm of the point of the arrow protruding on the opposite side.

The police investigating the case were of the opinion that the body may have belonged to a Chinese businessman involved in shark fin trading, and that he had been murdered by rival traders in the so-called shark fin mafia.

Members of the family of the missing man arrived to view the body for identification purposes. Because of the advanced decompositional changes they were not able to identify the body as that of their relative.

The body was examined, confirming the advanced decomposition and gas distension. The original skin colour was not detectable except for light pink skin at the naso-labial folds and the corners of the eyes. The nose was noted to be fine and pointed, and resembled that of the brother who had come for the identification. It was also noted that there were thick tufts of curly black hair on the knuckles of the fingers, which was considered unlikely in the body of a Chinese person.

While lifting the arm by the right hand, the complete skin of the hand slipped off like a glove. It could then be pulled over the gloved hand of the pathologist, and perfect fingerprints were obtained (Figs 2 and 3).



Fig. 2. Skin from hand of the deceased, slipped over the gloved hand of the pathologist. Excellent fingerprints were obtained.

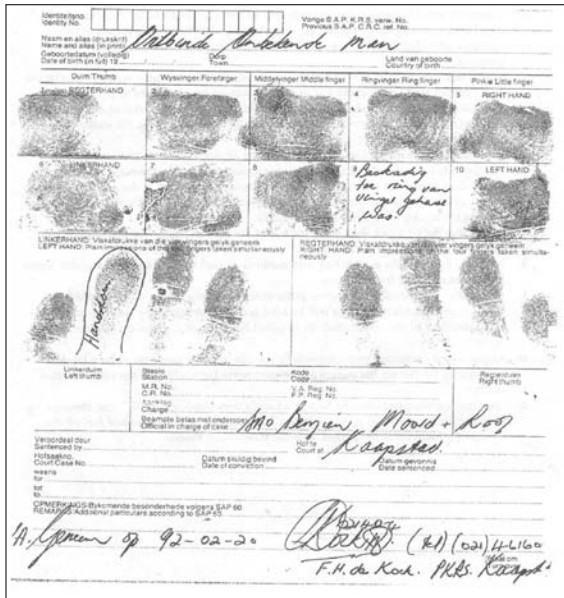


Fig. 3. The complete set of fingerprints obtained from both hands (excluding the left ring finger, from which the skin had been stripped completely before autopsy, presumably in an attempt to remove the gold wedding ring).

The fingerprints were handed to the investigating officer and taken to the local police Criminal Record Centre in Cape Town where they were compared with the records at the facility using the manual sorting method. The prints were found to be identical to a set filed in the fingerprint bank and positive identification was completed within an hour. It turned out that the deceased had been found guilty of a criminal offence some years previously and a set of his fingerprints was therefore available.

The autopsy was continued. A full set of teeth were present with no apparent specific features or dental work. The oral pathologist was consulted and in view of the positive identification by fingerprints it was decided that a complete oral examination was unnecessary. Internal organs showed pronounced autolysis.

The skull showed the arrow still *in situ* with one of the plastic 'wings' of the tail broken off. An attempt, most likely by the perpetrator, to remove the arrow from the head was suspected. The arrow extended completely through the head and cranial cavity and its tip protruded for about 2.0 cm.

On removal of the arrow the holes in the skull were identical to an entrance and exit defect caused by a bullet, each

measuring approximately 8 mm in diameter. Had the arrow been successfully removed by the perpetrator there could have been considerable confusion as to the nature of the weapon, since the defects mimicked those that would have been caused by a bullet passing completely through the head. In both scenarios no bullet would have been present in the brain or cranial cavity and there would have been similar entrance and exit defects in the skull.

No extradural haemorrhage was present. A localised subdural blood clot was apparent in the midline over the upper surface of the brain. Owing to the extensive liquefied state of the brain localised intracerebral haemorrhage could not be confirmed.

In the subsequent murder trial it transpired that the wife of the deceased had murdered him by shooting him in the head with a crossbow arrow, dumped the body in the river some 40 km away from their home, and finally disposed of the crossbow in yet another site. She was found guilty of first-degree murder and sentenced to many years in prison.

The author subsequently completed a number of further identifications of decomposed bodies in the same manner, and named the procedure the 'indirect cadaver hand skin glove-method' for taking fingerprints from decomposed bodies.

Conclusion

It is possible to take perfectly useable fingerprints in certain decomposed bodies by slipping the complete skin off the hand/s, or even from individual fingers, and fitting it over the corresponding hands or fingers of the dissector.

Comments

1. The unusually rapid decomposition of this body, with extensive discolouration and gas distension, marbling and skin slipping, was ascribed to the very severe pollution of the river, which out of the rainy season had become more or less stagnant.

2. In cases of multiple decomposing bodies, as encountered in the recent Tsunami disaster, this method may be of value in identifying individuals for whom *ante mortem* fingerprints are available.

3. Had the arrow not been left *in situ*, differentiation from a perforating gunshot wound may have been problematic.

4. The diameter of the crossbow arrow was slightly more than 8 mm and the maximum velocity reached 230 to 250 feet per second (personal communication, Mr Jarod Nicholls, archery consultant, Cape Town).