

Victorian Institute of Forensic Medicine

57-83 Kavanagh Street Southbank Victoria, Australia 3006

MONASH University

OPINION TOUCHING ON THE DEATH OF KAREN LEE MAHLO CASE NO. SS08J642

OFFICE OF THE STATE CORONER

04 FEB 2014

BRISBANE

My name is Linda Elizabeth ILES and my professional address is the Victorian Institute of Forensic Medicine, Coronial Services Centre, 57-83 Kayanagh Street, Southbank, Victoria 3006.

I am a registered medical practitioner practising as a specialist in forensic pathology.

My qualifications are Bachelor of Medicine (MB), Bachelor of Medical Science (B Med Sci) and Bachelor of Surgery (BS) with Honours, from the University of Tasmania. I am a Fellow of the Royal College of Pathologists of Australasia by examination in anatomical pathology. I hold the Diploma in Medical Jurisprudence in Pathology from the Society of Apothecaries of London (DMJ (Path)).

I am employed as a Forensic Pathologist at the Victorian Institute of Forensic Medicine.

My practical experience in Forensic Pathology commenced in 2000. I commenced full time professional forensic pathology practice in Victoria in 2005. I was subsequently employed as a Consultant Forensic Pathologist in the Section of Forensic Medicine and Science at the University of Glasgow from March 2007 until January 2009 and received specialised training in Forensic Neuropathology at the University of Edinburgh. I resumed practicing forensic pathology in Victoria in July 2009.



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OPINION

Case No. SS08J642

Re: MAHLO deceased

LINDA ELIZABETH ILES on her oath saith - I am a legally qualified Medical Practitioner and Pathologist.

I have been requested by Coroner Christine Clements via Coronial Investigation Officer Ms Debra Howarth to provide a report addressing certain issues surrounding the death of Dr Karen Mahlo. Specifically I have been requested to address the following:

- The degree of force required to push the knife through the breast bone into the chest cavity of the deceased.
- 2. The presence of other injuries to the deceased including fresh cuts to her hands and wrists.
- 3. Whether the findings at autopsy are consistent with self-inflicted death.

I have been provided with the following:

- 1. Form 1 police report of death to the coroner.
- 2. Form 8 autopsy report (author Dr Alex Olumbe)
- 3. Form 30 toxicology certificate.
- 4. Series of QPS scene photographs.
- 5. Series of autopsy photographs.

Summary of autopsy findings pertaining to the issues above

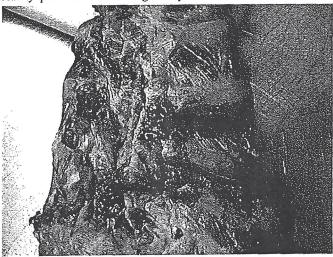
A single bladed kitchen knife with a distinct triangular handle was located in the deceased's chest wall with the blade pointing to the left side of the body. This was associated with a single defect in the deceased's clothing, a single, approximately horizontally oriented stab wound to the chest about which two tailing abrasions are evident. This is associated with three separate tracks into the chest wall and/or chest cavity. These are predominantly horizontally oriented and pass through intercostal muscle. One of the wounds perforates the bottom of the sternum but is not associated with further penetration of underlying thoracic organs. The fatal wound injures the pulmonary trunk.

On the flexor surface of the base of the right thumb and adjacent thenar eminence are two superficial incised injuries. On the back of the left hand are two distinct areas of red bruising. These are not further documented in the autopsy report.

The toxicology report demonstrates alcohol present in cavity blood at a concentration of 114 mg/100mL (0.114%) (NB: the formal autopsy report quotes the post mortem alcohol concentration as being 140 mg/100mL). Alcohol was present in vitreous humour at a concentration of 137 mg/100mL. Diazepam and citalopram metabolites were also present in blood.

1. Degree of force required to perforate the chest bone

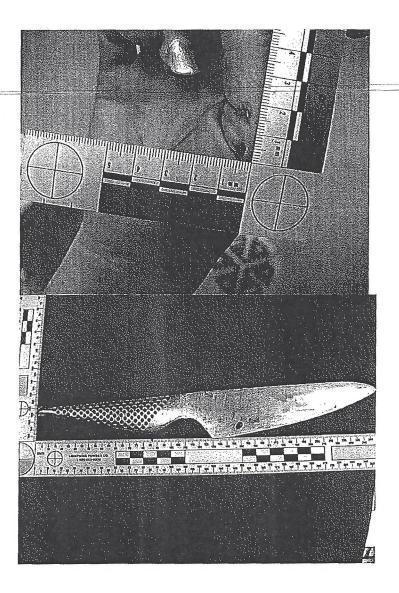
The assessment of force required to inflict stab wounds is problematic and requires an assessment of a number of variables including any intermediate objects (i.e. clothing) that the implement passes through, the sharpness and taper of the blade of the implement used, and the anatomical structures that that blade passes through. In this case the knife has gone through a single layer of thin clothing which is likely not to have caused significant impediment to the passage of the blade. As the blade has reportedly passed through the full thickness of the sternal bone, on fourth tiered scale ranging from mild/moderate/severe/extreme, at least severe force would be required to inflict this wound. However, I do note that although the sternum has been breached the wound track ends soon after, thus the sternum has provided a significant impediment to the passage of the knife. As the two adjacent stab wounds have passed through skin and intercostal muscle (it is not clear if there is involvement of costal cartilage) using the above scale I would estimate that at least moderate force has been required to inflict these wounds. These degrees of force are relative and cannot be readily quantified in a meaningful way.



2. Injuries to the right hand

At the base to the right thumb and also towards the top of the right thenar eminence are two superficial incised wounds that are oriented with skin tags located in opposite directions. These were inflicted by a sharp implement. They may be due to two passes of a bladed implement impacting on the skin, or, if the thumb is held in a flexed, gripping position, these may be inflicted by one pass of a bladed implement.

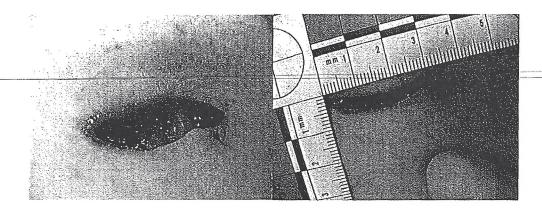
The nature of these injuries is non-specific. Although it cannot be excluded that they may have been inflicted whilst trying to ward off a knife, they would equally well have been sustained in a clumsy handling of a knife, or if the hand continues forward beyond the handle when passage of the blade is impeded by bone. I note that the knife embedded in the deceased's chest has a distinctive triangular handle. It is possible that if the knife was gripped in such a fashion that the right hand grasped the knife with the thumb closest to the chest, if the right hand slipped beyond the triangular handle at the hilt and slipped onto the blade that it would be possible to sustain such superficial injuries.



Two red bruises are noted on the back of the right hand. It is not clear whether these are recent or older injuries. These are due to non-specific blunt force trauma and it's not possible to comment meaningfully further on the significance of these injuries.

3. Other findings at autopsy consistent with self-inflected death.

It is noted in the autopsy report that there are two superficial scratches around the main stab wound to the chest and that these were thought to possibly represent hesitation marks. Whilst I cannot exclude this possibility, it is also possible, and in my view more probable, that these represent superficial injuries resulting from manipulation of the knife in the wound.



In general terms, on pathological findings at autopsy alone, it is rarely possible to differentiate between suicidal and homicidal stab wounds as long as they occur on a site on the body that his readily accessible by the deceased. Evaluation of the literature around homicidal versus suicidal stab wounds provides little help in clarifying the important issues in this case. The presence of hesitation marks and the absence of defensive wounds are said to be pointers to suicide¹, as is the absence of damage to clothing, and a horizontal versus vertical orientation of stab wounds on the chest wall². However, a series from Germany³ demonstrated wounds perforating clothing in 52% of reported suicidal sharp force injuries. The same series also documented ten cases (albeit five of these were razor blades) in which a victim of suicidal sharp force injury sustained superficial cutting injuries on the flexor surface of the fingers from a "clumsy hold of the weapon". A UK study demonstrated 28% of superficial stab wounds penetrated clothing⁴. Of note, this study documented three cases in which multiple stab wounds were inflicted through a single external wound, as seen in this current case. Moreover, a study comparing a 174 homicidal versus 105 suicidal sharp force injury deaths in Sweden demonstrated rib injuries in 35% of suicidal stab wounds to the chest, and 9% (i.e. 2 cases) of transection of the sternum (these cases were both male and were documented to suffer from "severe mental illness")⁵.

In summary, evaluation of these case series (notably evaluated on the presumption that the manner of death has been correctly identified in all cases in all series) demonstrates that there is no one feature, nor is there is a constellation of features that can reliably be used to discriminate definitively between suicidal and homicidal stab wounds in an individual case. However, in this case the following features raise concern:

- 1. The presence of three wound tracks passing through a single external wound.
- 2. Perforation of the sternum by one of the wound tracks.

The presence of these features, as discussed above, does not exclude self-infliction. There is nothing in the autopsy findings that preclude the possibility of Dr Mahlo's wounds being self-inflicted death. However, the features as described above do justify meticulous examine of other facts and circumstances surrounding the death of Dr Mahlo.

Of note, the deceased's blood alcohol concentration (cavity blood) was 0.114%. Given that tolerance to alcohol varies markedly between individuals, and I do note from the information provided that Dr Mahlo was known to have issues with high alcohol consumption, it is not possible to predict the specific effect that any one blood alcohol concentration would have on an individual's capability to function. Nevertheless, in my professional experience a blood alcohol concentration of 0.114%, in the absence of significant quantities of other central nervous system supressing drugs, in a significant number of individuals would not render them incapable of purposeful activity, particularly if that individual was an experienced user of alcohol. I do not

consider the deceased's blood alcohol concentration as a useful discerning factor in determining whether the deceased did indeed take her own life.

References

- 1. Byard RW, Klitte A, Gilbert JD, James RA. Clinicopathologic features of fatal self-inflicted incised and stab wounds. Am J For Med Pathol 2002, 23 (1): 15-18.
- 2. Scolan V, Telmon N, Blanc A et al. Homicide-suicide by stabbing study over 10 years in the Toulouse region. Am J For Med Pathol 2004, 25(1): 33-36.
- 3. Karger B, Niemeyer J, Brinkmann B. Suicides by sharp force: typical and atypical features. *Int J Legal Med* 2000, 113: 259-262.
- 4. Start RD, Milroy CM, Green MA. Suicide by self-stabbing. For Sci Int 1992, 56: 89-94.
- 5. Karlsson T. Homicidal and suicidal sharp force fatalities in Stockholm, Sweden. Orientation of entrance wounds in stabs gives information in the classification. For Sci Int 1998, 93: 21-32.

I hereby acknowledge that this statement is true and correct and I make it in the belief that a person making a false statement in the circumstances is liable to penalties of perjury.

Signed

(Linda Iles)

Linda E. Iles

B Med Sci, MB BS (Hons) (Tas), FRCPA, DMJ (Path)

Forensic Pathologist

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