



Ministry of Public Safety and Solicitor General
BC Coroners Service

Case No.: 2006:0143:0117

Police File: 2006 - 955

Police Department: Quadra Island RCMP

JUDGEMENT OF INQUIRY
INTO THE DEATH OF

BERGERON

SURNAME

MARCIA ANN

GIVEN NAMES

OF

QUADRA ISLAND
TOWNSHIP OF RESIDENCE

I, Kerry J. Clarke, a Coroner in the Province of British Columbia, have inquired into the death of the above named, which was reported to me on the 28th day of December, 2006, and as a result of such inquiry have determined the following facts:

Gender: MALE FEMALE Native: YES NO
 Age: 58 years Date of Birth: [REDACTED]
 Premise/Place of Death: PRIVATE RESIDENCE, QUADRA ISLAND Estimated Date of Death: 27 DECEMBER, 2006
 Township of Injury/Illness: QUADRA ISLAND Estimated Time of Death: UNDETERMINED
 Injury/Illness Premise: PRIVATE RESIDENCE Date and Time of Injury: 27 DECEMBER, 2006 UNKNOWN
 Identification Method: VISUAL: FRIEND Other:
 Body Released to: MOUNT PLEASANT FUNERAL HOME, VANCOUVER Date: 7 JANUARY, 2007
 POST MORTEM EXAMINATION: FULL EXTERNAL NONE Date: 5 JANUARY, 2007
 Conducted by: DR. CHARLES LEE, FORENSIC PATHOLOGIST, VANCOUVER GENERAL HOSPITAL
 TOXICOLOGY EXAMINATION: YES NO Date: 5 APRIL, 2007
 Conducted by: PROVINCIAL TOXICOLOGY CENTRE, VANCOUVER; HEAVY METALS TESTING PERFORMED BY CANTEST, BURNABY

Toxicology Findings: Liver - DIPHENHYDRAMINE: 23 umol/kg (5.90 mg/kg); ACETAMINOPHEN: 0.13 mmol/kg (20 mg/kg); MIRTAZAPINE: 10 umol/kg (2.70 mg/kg); DEXTROMETHORPHAN: 14 umol/kg (3.70 mg/kg); METHOCARBAMOL: 280 umol/kg (67 mg/kg); ALUMINUM: 15.0 ug/g; ARSENIC: 0.08 ug/g; CADMIUM: 2.39 ug/g; CALCIUM: 68.8 ug/g; CHROMIUM: 0.05 ug/g; COBALT: 0.05 ug/g; COPPER: 3.79 ug/g; IRON: 34 ug/g; LEAD: 0.03 ug/g; MAGNESIUM: 119 ug/g; MANGANESE: 1.42 ug/g; MERCURY: 0.040 ug/g; MOLYBDENUM: 0.76 ug/g; NICKEL: 0.03 ug/g; PHOSPHORUS: 2180 ug/g; POTASSIUM: 2110 ug/g; SELENIUM: 0.69 ug/g; SILICON: 10 ug/g; SILVER: 0.003 ug/g; SODIUM: 1230 ug/g; STRONTIUM: 0.05 ug/g; TIN: 0.35 ug/g; TITANIUM: 0.67 ug/g; VANADIUM: 0.07 ug/g; ZINC: 74.2 ug/g.

MEDICAL CAUSE OF DEATH

(1) Immediate Cause of Death: a) Cardiac arrhythmia
 DUE TO OR AS A CONSEQUENCE OF
 Antecedent Cause if any: b) Metal toxicity
 DUE TO OR AS A CONSEQUENCE OF
 Giving rise to the immediate cause (a) above, stating underlying cause last: c)

(2) Other Significant Conditions Contributing to Death:

BY WHAT MEANS Ingestion of contaminated counterfeit medication

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OF BRITISH COLUMBIA

In accordance with the Freedom of Information and Protection of Privacy Act and to the policies and procedures made pursuant to it, selected personal identifiers have been blacked out on this document. If you have any questions, contact the office of the Chief Coroner at (604) 660-7739

CLASSIFICATION OF THE EVENT ACCIDENTAL HOMICIDE NATURAL SUICIDE UNDETERMINED

Date Signed: 4 July 2007



[Signature]
Kerry J. Clarke, Coroner



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Summary of Events

On December 28, 2006, Marcia Ann Bergeron was found in her bed by a friend. She was in a normal sleeping position. Emergency services were summoned but resuscitation protocols were not initiated as it was evident she had been deceased for some time.

Investigative Findings

Various unidentifiable medications were found in Mrs. Bergeron's residence. The packaging consisted of plastic wrapping with no identifiable markings. The overall appearance of the medications suggested poor quality manufacturing.

Mrs. Bergeron was a consumer of various legitimate over-the-counter health products purchased in the local area and took a keen interest in most health matters. She rarely saw a doctor, and there is no record of any prescriptions being issued by any doctor in British Columbia for the twelve months prior to her death. There was also no indication of any prescription being issued in any other jurisdiction.

In the weeks and months prior to her death, Mrs. Bergeron had been suffering from a range of symptoms. In e-mails to a friend, she described symptoms of ongoing nausea, diarrhea, aching joints and other issues. Her friends locally were aware she was losing her hair and having vision problems. In the days immediately prior to her death she was extremely fatigued and sick.

A review of Mrs. Bergeron's computer revealed that she had been visiting internet sites from which medications could be purchased. A subsequent review of Mrs. Bergeron's computer hard drive by the United States Food and Drug Administration (FDA) revealed that Mrs. Bergeron had purchased Zolpidem in April 2006 from a site previously linked to a public alert issued by the FDA concerning counterfeit Zolpidem.

Post Mortem/Toxicology Examination

An autopsy revealed no anatomical cause of death and attributed her death to the effects of metal toxicity. Toxicology testing revealed the presence of sub lethal levels of diphenhydramine (an over-the-counter antihistamine and sedative), acetaminophen (an over-the-counter analgesic), mirtazapine (a prescription antidepressant), dextromethorphan (an over-the-counter cough suppressant) and methocarbamol (an over-the-counter muscle relaxant).

PC



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Three types of pills found in Mrs. Bergeron's residence were examined. The first contained the active ingredient Zolpidem, a powerful hypnotic not legally available in Canada. The second contained Alprazolam, an anti anxiety medication only available in Canada with a doctor's prescription. The remaining pill contained acetaminophen. It is common for drug counterfeiters to substitute acetaminophen for a more potent analgesic. All three pills contained significant quantities of various metals.

Additional examination of Mrs. Bergeron's liver was undertaken and revealed significantly high levels of aluminum, phosphorus and many other metals. There is limited availability of data regarding the normal background levels of metals in humans. Although some metals, in trace amounts, are essential to normal bodily function, the majority have no known beneficial effect and can be extremely toxic. The mechanism of the interaction and toxic effects of the overall metal load in humans is not well understood. However, most metals have a similar toxic effect on the body by binding to various proteins and interfering with the enzymatic processes in the body. This results in systemic cellular dysfunction and cellular death.

With the historical concerns over aluminum and its possible relationship to Alzheimer's disease, considerable research has been undertaken into normal aluminum levels. These have been found to be approximately 1µg/g. Mrs. Bergeron's level was found to be 15µg/g. Together, the overall load of metals in Mrs. Bergeron's liver sample would be considered highly toxic and would have resulted in the numerous physical symptoms experienced by Mrs. Bergeron. Eventually, the effects will often result in a cardiac arrhythmia which can be fatal.

Internet drug sites selling counterfeit medication are a complex and emerging healthcare problem. While accurate estimates are difficult to ascertain, the World Health Organization estimates that between one and 10 per cent of all drugs sold worldwide are counterfeit. In some undeveloped countries the rate of counterfeit drugs may reach as high as 50%.

Counterfeit medications may contain the wrong ingredients or too little or too much of the active ingredient. Due to poor production techniques they may also be contaminated by various substances, including metals. The metal contaminants in the pills found in Mrs. Bergeron's residence were probably introduced as part of the filler material that is used in most pills. Filler material is often an inert substance, such as calcium, that is used as a binder for the active ingredient or processing additive to aid in the tablet manufacture. In this case, the contaminants would have been naturally present in the original mining of the filler material. In legitimate manufacturing, the filler material is highly purified by the pharmaceutical company; this is a complex and expensive process that is unlikely to be duplicated by the counterfeit drug industry.



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The FDA, Health Canada and the RCMP were consulted during the course of this investigation and continue to investigate as per their mandates.

Conclusion

I find that Marcia Ann Bergeron died on Quadra Island on December 27, 2006, of a cardiac arrhythmia due to metal toxicity. I classify this death as accidental and make no recommendations.

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Kerry J. Clarke, A Coroner
in and for the Province of British Columbia

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