IN THE CORONERS COURT

OF VICTORIA

AT MELBOURNE

Court Reference: COR 2015 4604

**FINDING INTO DEATH WITHOUT INQUEST**

*Form 38 Rule 60(2)*

*Section 67 of the **Coroners Act 2008***

I, AUDREY JAMIESON, Coroner having investigated the death of POLINA PORTNYAGINA

without holding an inquest:
find that the identity of the deceased was POLINA PORTNYAGINA
born 8 February 1937
and the death occurred on 10 September 2015
at the Alfred Hospital, 55 Commercial Road, Melbourne Victoria 3004
**from:**

1 (a) COMPLICATIONS OF A LEFT TENTORIAL MENINGIOMA

Pursuant to section 67(1) of the **Coroners Act 2008**, I make findings with respect to **the following circumstances**:

1. Polina Portnyagina was 78 years of age at the time of her death. She was retired and lived independently in Mentone. Ms Portnyagina spoke Russian and was of a non-English speaking background. Her medical history included a traumatic subdural and extradural haemorrhage post fall in 2011, hypertension, acute myocardial infarction, and breast cancer.

2. In 2009, a magnetic resonance imaging (MRI) scan was performed on Ms Portnyagina's brain, for the investigation of hearing loss and dizziness. A meningioma was identified, but was described as 'small' and 'incidental'. The report of the 2009 MRI brain scan made no recommendation for follow up.

3. On 30 August 2015 at 3.30am, Ms Portnyagina was admitted to the Alfred Hospital, in the care of the neurosurgical team. She had a two week history of an unsteady gait and falls, on the background of a chronic mild headache. There had been no history of reduced consciousness,

head strike, vertigo, nausea, vomiting, change in vision or fevers. Her neurological examination at admission was difficult to assess accurately, due to a language barrier. Ms Portnyagina had a computed tomography (CT) scan of her head which showed a left sided mass with peri-lesion oedema.[1] She was commenced on dexamethasone, levetiracetam and pantoprazole, and her regular medication aspirin was ceased. An MRI scan of Ms Portnyagina's head was performed on 1 September 2015; it demonstrated a moderately large meningioma centred on the left tentorium cerebelli, resulting in moderate hydrocephalus and likely transependymal oedema.[2]

4. On 2 September 2015 a family meeting occurred between Neurosurgeon Mr Patrick Chan, Ms Portnyagina and her son, in the presence of a Russian interpreter. During this meeting, Mr Chan explained that Ms Portnyagina had been found to have a lesion in her brain, compressing her brain stem and that it was likely to have further growth resulting in possible drowsiness, weakness and reduced consciousness. The management options were discussed. These included conservative management, the insertion of a temporary shunt, or surgery for tumour removal. Tumour removal would involve extensive surgery which carried significant risks. Ms Portnyagina expressed that she would like to have surgery.

5. Ms Portnyagina remained stable, with stable vital signs and neurological observations. However, at times it was difficult to assess whether she was confused due to her non English speaking background.[3] She also underwent ophthalmology review, fundal photographs,[4] and monitoring and management for hyponatraemia,[5] which stabilised. According to a neurosurgical ward round note on 8 September 2016, Ms Portnyagina was scheduled for surgery for her intracranial mass 'next Monday', presumably 14 September 2016.

6. On 10 September 2016 at 1.55am, Ms Portnyagina was found unresponsive by nursing staff. A code blue was called and cardiopulmonary resuscitation (CPR) was commenced. Despite continuous CPR, intubation and three doses of intravenous adrenaline, Ms Portnyagina remained in asystole with pupils fixed. Resuscitation efforts ceased at 2.18am and Ms Portnyagina was declared deceased.

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[1] Swelling of the normal brain tissue next to the mass lesion. This is a common occurrence with brain tumours.

[2] The meningioma was causing both swelling of the surrounding brain tissue (oedema) and blocking of the normal flow of cerebrospinal fluid which surrounds the brain resulting in accumulation of this fluid (hydrocephalus).

[3] Neurological assessment includes comprehension and ability to communicate. This assessment is made difficult by language barriers.

[4] An exam of the posterior aspect of the eye to assess the effects of raised intracranial pressure.

[5] A common electrolyte disturbance associated with brain tumours.

## INVESTIGATIONS

*Forensic pathology investigation*

7. Dr Victoria Francis, Forensic Pathology Fellow at the Victorian Institute of Forensic Medicine, performed a full post mortem examination upon the body of Ms Portnyagina, reviewed a post mortem computed tomography (CT) scan and an e-Medical Deposition Form from the Alfred Hospital and referred to the Victoria Police Report of Death, Form 83.

8. At autopsy, Dr Francis observed mild myocardial fibrosis on a background of mild to moderate coronary artery atherosclerosis. Ms Portnyagina's lungs were emphysematous, with evidence of pulmonary hypertension. Small pulmonary thromboemboli were seen within the right upper lung lobe, but not throughout other lung lobes. Toxicological analysis of Ms Portnyagina's post mortem blood detected levetiracetam[6] at levels consistent with therapeutic use.

9. A neuropathology examination completed by Head of Forensic Pathology Dr Linda Iles, showed fragmented left tentorial meningioma that was complicated by intratumoral haemorrhage and adjacent subdural haemorrhage with left cerebellar tonsillar herniation necrosis. There was oedematous and gliotic occipitoparietal white matter, left cerebellar hemispheric white matter and distorted left pons, which was thought to be due to tumour mass effect. The exact relationship between the tentorial meningioma and the secondary mass effects with the thin film of inferior frontal subdural haemorrhage is not clear. The tumoral haemorrhage caused secondary mass effects to the surrounding brain structures.[7]

10. Dr Francis ascribed Ms Portnyagina's death to natural causes, being complications of a left tentorial meningioma.

*Coroners Prevention Unit review*

11. The Coronial Admissions and Enquiries contact log documented that Ms Portnyagina's son Alexander Argentov informed staff during conversations on 11 and 14 September 2015 that he was content with the care provided by the hospital, however, in light of the fact Ms Portnyagina had been due for surgery the following week, I asked the Coroners Prevention

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[6] Levetiracetam is an antiepileptic used for the control of partial onset seizures.

[7] The pathologist's description details the inherent instability of the tumour and the damage it causes to surrounding tissues.

Unit[8] to review the management of Ms Portnyagina at the Alfred Hospital in the weeks prior to her death. The review encompassed Ms Portnyagina's medical records and a statement made by Alfred Health Consultant Neurosurgeon Mr Patrick Chan, dated 26 October 2016.

12. In his statement, Dr Chan advised that due to Ms Portnyagina's medical frailty, Alfred Health staff considered two treatment options:

    - No surgery with palliative care, therefore prioritising Ms Portnyagina's continuing comfort over immediate treatment. Leaving the meningioma without surgery would involve accepting that Ms Portnyagina would deteriorate neurologically over time.

    - Surgery; the procedure for removal of the meningioma would involve retrosigmoid suboccipital craniectomy and neurosurgical excision. This procedure involved high risks of mortality and morbidity. The mortality risk was estimated as being as high as 20 to 30 percent for Ms Portnyagina.

13. Given Ms Portnyagina's frailty, the extent and risks of the procedure, and the fact that surgery was not urgently required, Alfred Health staff considered it was necessary and appropriate to inform Ms Portnyagina and her family of her condition and obtain her consent. Dr Chan advised that Ms Portnyagina was able to understand the nature of her condition, treatment options, risks and benefit of surgery. He added that there was no concern that Ms Portnyagina did not have the capacity to provide informed consent. In the days following Ms Portnyagina's hospital admission, Alfred Health consulted extensively with Ms Portnyagina and her son in order to work through the issues relating to the treatment options and to ultimately reach a decision. An interpreter was used to ensure Ms Portnyagina fully understood that she could eventually die from the meningioma.

14. Mr Chan said that on 2 September 2015, Ms Portnyagina indicated that she would like to consider surgery, despite the extensive risks. On 3 September 2015, the Head of Neurosurgery Professor Rosenfeld provided further details to Mrs Portnyagina of the complexity of surgery required and the significant risks involved. On 8 September 2015, Ms Portnyagina (with input from her son) formally decided to undergo surgery. The decision was made during a family meeting using a Russian interpreter. Before this formal decision, there were multiple

[8] The Coroners Prevention Unit (CPU) was established in 2008 to strengthen the prevention role of the coroner. The unit assists the coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations, as well as assisting in monitoring and evaluating the effectiveness of the recommendations. The CPU comprises a team with training in medicine, nursing, law, public health and the social sciences.

discussions over a number of days between Mr Chan, Professor Rosenfeld, Ms Portnyagina and her family.

15. Mr Chan advised that the surgery to remove the meningioma was not planned for a specific date, but scheduled for a few days after the formal decision was made on 8 September 2015. He added that complex neurosurgery usually takes an entire day, so it can take a few days to organise an operating theatre and relevant staff. Mr Chan said that the delay between Ms Portnyagina's admission and her actual surgery date was mainly associated with the extensive discussions necessary to obtain consent. He said it takes time for the patient and family to comprehend and consider the surgical options. Mr Chan stated that in the days preceding Ms Portnyagina's death, there was no indication that her health was any worse than her pre-existing frailty would imply.

16. Following her death, Ms Portnyagina's case was reviewed by the Alfred Health Neurosurgery Unit's weekly neurosurgery audit. The audit meeting examines all mortality and morbidity experienced by patients receiving treatment from the neurosurgical unit. The discussion of Ms Portnyagina's death mainly focussed on whether, and how to operate on frail and elderly patients for whom extensive surgery carried very significant risks. The review by the neurosurgical unit did not identify any recommendations for improvement.

17. Mr Chan also wrote: "It is not clear to me that Ms Portnyagina's meningioma was the cause of her death. Patients, like Ms Portnyagina, who have a big tumour, are going to have intracranial swelling, even before death. The presence of swelling doesn't prove that the meningioma was the cause of her death."

18. The review explained that meningiomas are brain tumours that develop in the meninges, the tissue that surrounds and protects the brain and spinal cord. Although most meningiomas are not cancerous, these tumours can cause problems as they grow and press against important parts of the brain or spinal cord. The cause of meningiomas is not well understood, but may include both genetic and environmental factors. Meningiomas can be managed with observation, surgery and/or radiation therapy. In some cases, active intervention may be delayed and will only start if the tumour begins to grow.

19. The review concluded that Ms Portnyagina's symptoms in 2015 were rapidly and accurately diagnosed by Alfred Health. The Alfred Health neurosurgical team had numerous detailed family discussions, articulating the significant morbidity and risks involved in proceeding with surgical intervention in someone who was at that point so frail, and that non-operative

management was considered a viable option by the treating team. Given the complexity of the decision making, the review determined the Alfred Health neurosurgical team managed Ms Portnyagina's care appropriately, with scheduling of surgery not delayed.

20. The review observed that Ms Portnyagina's 2009 MRI brain report detailed a 'small' and 'incidental' meningioma. The incidence of meningioma growth has been reported to be 37.3% over 5 years[9] and surveillance imaging is common strategy in small, asymptomatic meningiomas, particularly in the elderly.[10] The 2009 MRI brain report did not recommend any follow up.

*Correspondence with the Royal Australian and New Zealand College of Radiologists*

21. Following the completion of the review, I directed that the Court contact the Royal Australian and New Zealand College of Radiologists and enquire whether there were any guidelines for their members, with regards to follow up recommendations regarding incidental findings found on imaging. The Court was advised that there were currently no relevant guidelines or recommendations in existence.

**FINDINGS**

The coronial investigation and the review by the Coroners Prevention Unit have identified that the management of Ms Portnyagina's neurosurgical condition by Alfred Health clinicians in the weeks prior to her death, was reasonable and appropriate. However, the evidence indicates that Ms Portnyagina's meningioma was detected in 2009, and no follow up action was recommended at the time. While I am unable to definitively find that follow up between the 2009 detection of the meningioma, and Ms Portnyagina's presentation in 2015 would have made a difference to the outcome, an opportunity for surveillance of the tumour's growth was lost.

I find that follow up and monitoring of the 2009 discovery would have been appropriate in the circumstances.

I accept and adopt the medical cause of death as identified by Dr Victoria Francis and find that Polina Portnyagina died from natural causes, being complications of a left tentorial meningioma.

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[9] Indications for surgery in patients with asymptomatic meningiomas based on an extensive experience. Yano, S et al. J Neurosurg. 2006;105(4):538

[10] Park JK. Management of known or presumed benign (WHO grade I) meningioma. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on March 4 2017, 2016.)

## RECOMMENDATIONS

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendations:

1. With the aim of preventing like deaths, **I recommend that** the Royal Australian and New Zealand College of Radiologists develop guidelines with regard to the reporting of incidental mengiomas, so that the reporting radiologist is required to make specific recommendations to the referring doctor regarding appropriate follow up, such as surveillance imaging or neurosurgical review.

Pursuant to section 73(1A) of the *Coroners Act 2008,* I order that this Finding be published on the internet.

I direct that a copy of this finding be provided to the following:

Mr Alexander Argentov
Ms Emily Ratnagobal, Coroners Liaison Officer at Alfred Health
Mr Patrick Chan, Neurosurgeon
The Royal Australian and New Zealand College of Radiologists

Signature:

AUDREY JAMIESON

CORONER

Date: **29 June 2017**