



MAGISTRATES COURT of TASMANIA

CORONIAL DIVISION



Record of Investigation into Death (without inquest)

*Coroners Act 1995
Coroners Rules 2006
Rule 11*

(These findings have been de-identified in relation to the name of the deceased, family, friends and others by direction of the Coroner pursuant to S.57(1)(c) of the Coroners Act 1995.)

I, Olivia McTaggart, Coroner, having investigated the death of Mr J.

Find that:

- a) The identity of the deceased is Mr J;
- b) Mr J died in the circumstances set out further in this finding;
- c) Mr J died as the result of multiple pulmonary thromboemboli and deep vein thrombosis following a recent total prostatectomy for prostate carcinoma;
- d) Mr J died in June 2014 in Southern Tasmania;
- e) Mr J was born in 1950, and was a retired, married man at the date of his death; and
- f) No other person contributed to Mr J's death.

Background:

Mr J was married to Mrs J and lived with her in Southern Tasmania. He was 63 years of age at the date of his death.

In March 2014 Mr J was diagnosed by biopsy with prostate cancer. A radical prostatectomy was recommended by his urologist Mr Anthony Eaton. The surgery was planned for 13 May 2014.

Mr J was admitted to Calvary Health Care (CHC), Lenah Valley Campus, on 13 May 2014. A venous thromboembolism risk screening tool was recorded. Two risk factors were noted. However, there is no indication in the form as to what actions were taken, as the space provided was left blank. The records do indicate that TED (thrombo-embolism deterrent) stockings and a sequential compression device were used pre-operatively.

The anaesthetic and surgery were uneventful. Post-operatively Mr J was hypotensive and was transferred to the Intensive Care Unit (ICU) and treated. His haemoglobin level had fallen although the estimated blood loss in surgery was estimated to only be 500ml.

Mr J was reviewed by Dr Andrew Turner, a specialist intensivist. The TED stockings and sequential compression device were left in place. In view of the concern regarding haemorrhage the anticoagulant clexane was not administered that night. However, the stockings were left on for the whole admission.

On 14 May 2014 Mr Eaton approved clexane (an anticoagulant) prophylaxis to be started. The clexane was continued until discharge. The blood pressure slowly returned to normal and treatment of the low blood pressure was gradually stopped. Mr J was transferred to the surgical ward. He made a steady recovery and was discharged on 21 May 2014. The medical record has a signed discharge summary. I note that the "medication management arranged" space is blank.

Mr J returned home and appeared to be recovering well. He was taking small walks with his wife.

Circumstances surrounding the death:

Several weeks after his hospital admission, Mr J had a shower and remained in the bathroom drying off. His wife then heard a loud crash and located him on the floor, complaining of pain in his chest. An ambulance was called and arrived soon after. Mr J was naked and there was no sign of any injury. Whilst treating Mr J for the pain he suffered an arrest, and paramedics commenced CPR for 40 minutes without success. He was determined to be deceased.

A post mortem examination by Dr Donald Ritchey, forensic pathologist, revealed that death was due to venous thromboembolism (VTE). Dr Ritchey stated in his report for the investigation;

"The cause of death of this 63 year old man, Mr J, was multiple pulmonary thromboemboli complicating deep vein thrombosis of probable pelvic origin. Significant contributing factors were history of prostate carcinoma with recent total prostatectomy and mild atherosclerotic coronary vascular disease. Mr J was recovering normally from a total prostatectomy at his home when he suffered an episode of chest pain and collapse. The autopsy revealed a well-developed, well-nourished adult Caucasian man who had a recent total prostatectomy. The surgical site was clean and dry and there was no infection or haemorrhage at the surgical sites of the skin or pelvis. Multiple pulmonary thromboemboli (blood clots) were impacted within the pulmonary arteries of both lungs. Pulmonary thromboemboli occur when blood clots (thrombi) break free from their sites of formation within the veins and travel through the veins and the right side of the heart to become impacted within the pulmonary arteries. When these clots are large and/or multiple (as in the present case), the resulting blockage of blood flow through the lungs causes increased pressures within the heart resulting in fatal cardiac arrhythmia. The probable location of the formation of these blood clots was the pelvis. Pulmonary thromboemboli are one of the most common causes of non-surgical death in patients undergoing urologic surgery."

The issue has arisen of whether further anticoagulation should have been provided to Mr J after his discharge from hospital. Dr Tony Bell, coronial medical consultant, has provided me with a helpful report. He states:

“Although effective pharmacological and mechanical preventative options have existed for decades, VTE remains a major cause of morbidity and a significant cause of mortality in hospitalised patients across Australia and internationally. The incidence of deep vein thrombosis (DVT) and pulmonary embolism (PE), referred to as VTE, has been found to be 100 times greater among hospitalised patients compared to those in the community. DVT occurs in over 50% of some categories of hospitalised patients if prophylaxis is not used. PE remains the commonest cause of preventable death: 1% of all hospital admissions will die from this. Approximately 10% of hospital deaths are attributed to PE.

Guidelines aim to identify a process for risk assessment and outline the published best practice prophylaxis for prevention of VTE. Patients should be individually assessed on admission and thereafter if circumstances change, e.g. following theatre.

Adequate hydration and early mobilisation are simple measures that should be applied as standard practice to prevent VTE. Other important options for VTE prophylaxis include pharmacological or mechanical methods. The Best Practice Guidelines for Australia and New Zealand – Prevention of Venous Thromboembolism, state that studies have confirmed the effectiveness of subcutaneous low dose unfractionated heparin, and low molecular weight heparin for preventing VTE.

Anti-embolic graduated compression stockings reduce the incidence of VTE by up to two thirds. (This evidence is drawn largely from surgical/orthopaedic populations). The evidence is also mainly from studies that used full-length stockings; efficacy of below-knee graduated compression stockings is less clear as there are few comparative studies.

Extended VTE prophylaxis is offered to patients at high risk for VTE to accommodate earlier discharge and in recognition that VTE can occur days to weeks post-discharge. Evidence is strongest for patients who have undergone major orthopaedic surgery, total hip replacement, total knee replacement, hip fracture surgery, cancer, and major abdominal surgery. Low-molecular-weight (LMW) heparin is the preferred agent. The optimal duration of extended prophylaxis is unknown but is usually given beyond 10 days and up to 35 days following major orthopaedic surgery and for a period of three to four weeks for selected high-risk patients who undergo major abdominal and/or pelvic surgery for cancer.”

Mr Eaton also provided a helpful report in this investigation. In Mr J's case Mr Eaton regarded the surgery as standard general surgery rather than high-risk surgery requiring extended anticoagulation. He stated that the surgery was a radical prostatectomy without lymph node dissection, thus the extent of surgery was limited. Secondly, he considered the small localised prostate tumour would not have the same pro-coagulant effect of, say, a large rectal tumour. Mr Eaton also notes that clexane and stockings were provided throughout the hospital admission. At discharge, Mr J was advised to mobilise and continue to wear the stockings.

At the follow-up review in late May, Mr Eaton described Mr J's condition as was to be expected following the surgery. There were no specific issues.

Mr Eaton states that after Mr J's death he learnt that Mr J had limited his mobility considerably. He also had concerns that Mr J did not use the stockings.

Dr Bell states, and I accept, that the treatment throughout hospital admission was of good standard. Mr J received appropriate therapy for the prevention of VTE during the hospital stay. The initial delay in starting the anti-coagulant was sensible as Mr J suffered from a significant post-operative bleed. I also accept Dr Bell's and Mr Eaton's opinion that VTE prophylaxis followed recommended protocols. For example, it accorded with the 2009 National Health and Medical Research Council (NHMRC) Clinical Practice Guidelines for the Prevention of VTE. Mr Eaton's decision not to use extended anti-coagulation post Mr J's discharge was therefore sound practice.

The question of extended VTE prophylaxis should be considered in appropriate cases of risk. Although the evidence for extended anti-coagulation for hip or knee replacement is reasonable, there is insufficient evidence for a clear recommendation in regard to radical prostatectomy (as summarised in the NMHRC Clinical Practice Guidelines previously referred to). More recently the American College of Chest Physicians (2012) have indicated that patient's at high- risk of VTE undergoing abdominal or pelvic surgery for cancer should receive four weeks of prophylactic anti-coagulation

Comments & recommendations:

Mr J received good care and appropriate anti-coagulation in accordance with recommended guidelines.

It is to be noted that there is a significant risk of death from VTE after surgery. The task of the treating surgeons and medical practitioners is to identify the degree of risk and, in line with that risk, provide adequate anti-coagulation pharmacotherapy.

In the context of the death of Mr J and the consequent consideration of his anti-coagulation treatment, I make two comments:

- (a) That treating doctors continue to be vigilant to the degree of risk associated with the proposed procedure when considering the duration of pharmacotherapy; and
- (b) That treating doctors document in the patients file, if possible, the reasons for the particular decision regarding the type and duration of anti-coagulation treatment.

In concluding, I convey my sincere condolences to the family of the Mr J.

Dated: **6th March 2015** at Hobart in the state of Tasmania.

Olivia McTaggart
CORONER