QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION:	**Non-inquest findings into the death of Mr C**
TITLE OF COURT:	Coroners Court
JURISDICTION:	BRISBANE
DATE:	18 February 2026
FILE NO(s):	2024/331
FINDINGS OF:	Melinda Zerner, Coroner
CATCHWORDS:	CORONERS: Multi-focal right renal anastomosing hemangioma; Metastatic clear cell renal cell carcinoma; Incorrect diagnosis; Haemorrhage in operating theatre.

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Introduction

1. Mr C was born on 20 October 1961, and died on 16 January 2024, at the Wesley Hospital, Auchenflower, Queensland. He was 62 years old.

2. A doctor from the Wesley Hospital reported Mr C's death to the Coroner because his death was identified as a potential healthcare related death within the definition of a reportable death in the *Coroners Act 2003*.

3. The role of a Coroner is to investigate reportable deaths to establish, if possible, the cause of death and how the person died. The purpose of a coronial investigation is to establish the facts, not to cast blame or determine criminal or civil liability. An investigation is about attempting to find the root cause of the incident that precipitated the death and in appropriate circumstances to analyse systemic failures that contributed to the death and to design remedial responses.

4. In making my findings, they are based on proof of relevant facts on the balance of probabilities. I am not able to make adverse findings against, or comments about individuals, unless the evidence provides a comfortable level of satisfaction that they caused or contributed to the death.

Circumstances of the Death

5. Mr C was diagnosed with a multi-focal right renal anastomosing hemangioma in December 2023. The diagnosis had been made based on biopsies of the mass and of omental nodules. He had required opioid analgesia to manage his increasing back pain associated with the tumour which, although was thought to be benign, was locally invasive and associated with multifocal peritoneal involvement. There were no non-surgical treatment options.

6. Mr C's condition had been reviewed and discussed at a multidisciplinary team (MDT) meeting.

7. On 29 December 2023, Mr C signed the consent form which had been completed by his urologist. This consent was specific to the procedure Mr C ultimately was scheduled for and included numerous risks including heart attack and death. The risk of death was not quantified.

8. The clinical note made by Mr C's urologist documents that the specific risks including 'AMI/Stroke/PE/mortality', were discussed with Mr C.

9. Mr C's medical history included hypertension, obstructive sleep apnoea, and a left bundle branch block. He was assessed preoperatively by his cardiologist, which included a stress echocardiogram and a coronary calcium score.

10. On 16 January 2024, Mr C was admitted to the Wesley Hospital for the proposed surgery which was for an 'open right nephrectomy +/- en bloc liver, diaphragm resection + omental deposits'.

11. Mr C underwent the surgery that afternoon. Preoperatively, a right internal jugular vein central venous line, a left radial arterial line, and two 16-gauge intravenous cannulas were inserted for monitoring and vascular access.

12. Mr C experienced a fatal haemorrhage during the surgery which resulted in him going into cardiac arrest which he could not be resuscitated from.

13. The clinical records indicate:

    a) There were extensive peritoneal deposits in the omentum, on the surface of the right colon, within hepatic flexure and hepatorenal angle, and the anterior surface of the inferior vena cava.

    b) The liver was invaded by tumour over a broad area and the tumour was described as “rock hard with infiltrated perinephric tissue planes”.

    c) When the tumour was resected away from the anterior surface of the liver, there was bleeding from the under-surface of the liver which was unable to be controlled despite packing and oversewing.

    d) The central line had fallen out and inotropes could not be given. The decision was made to proceed with a right posterior section hepatectomy (liver resection).

    e) After the hepatectomy was completed, control of the bleeding was done by packing of the tumour and compression of the liver to control any venous back-bleeding whilst the right renal artery was isolated and clamped. Blood loss to this point was estimated to be 3.1L.

    f) At 7.23pm, Mr C lost cardiac output. CPR was performed for 27 minutes, and during this time massive uncontrollable haemorrhage occurred. A massive transfusion of blood products was delivered. Mr C did not have a shockable heart rhythm and he had no return of spontaneous circulation.

    g) The total volume of intravenous fluids and blood products administered during the procedure and resuscitation was 22 litres of crystalloid, 17 units of packed red cells, 2 grams of fibrinogen, and 1 litre of cell saver blood.

    h) Two surgeons and two anaesthetists were present and together they determined the situation to be unsalvageable.

    i) Mr C was declared deceased at 7.50pm.

    j) On closing the wound after Mr C had passed, it was noted the tumour was inseparable from the intra-hepatic IVC (inferior vena cava) with evidence of ongoing haemorrhage between the superior edge of the tumour and the diaphragm.

Senior Forensic Physician Opinion

14. At the outset of the coronial investigation, an independent preliminary opinion was obtained from Dr Katharine Robinson. She opined:

    a) Based on the multidisciplinary team meeting, histological diagnosis on biopsy and Mr C’s symptoms, the decision to perform the surgery was reasonable.

    b) Mr C was appropriately consented for the procedure.

c) The surgery was performed with due care and skill.

d) The surgical management of the haemorrhage and resuscitation efforts were appropriate and thorough.

e) The very high risk (and likely unavoidable risk, with the benefit of hindsight) of catastrophic intraoperative haemorrhage was not appreciated pre-operatively.

f) It would have been very difficult to anticipate the invasive and infiltrative nature of a benign tumour that was subsequently found to be invading the liver over a broad area and to be rock hard and infiltrating perinephric tissues planes.

15. Dr Robinson raised questions about the diagnosis and decision to proceed to invasive surgery. She states,

> [redacted] *tumour was unusual in that an anastomosing haemangioma is a benign vascular tumour not known to be associated with local invasion of adjacent structures, or omental deposits. This was acknowledged by his surgeon and documented in his conversations with* [redacted] *and his wife: "discussed benign vasc lesion on histo, doesn't fit w reported Ln and omental deposits or apparent invasion of adj structures" and "Recommend surgery – not cancer – unusual scenario". His own literature review led him to conclude that this would be an unusually large anastomosing haemangioma and that the tumour is not known to invade adjacent structures.*
>
> *Anastomosing haemangiomas tend to be solitary but may present bilaterally and may be multifocal. They are usually found in the kidneys, but may also occur in the perinephric adipose tissue, adrenal glands, liver and bowel. They generally appear as well-circumscribed masses, with a mean size of 1.5cm, but may be up to 5 – 7 cm or even larger within the liver. It is a rare subtype of haemangioma and histologically may mimic angiosarcoma – a malignant tumour. Histological and immunohistochemical analysis is required to determine the final diagnosis and because it can mimic malignant tumour the diagnosis is often confirmed on the nephrectomy specimen. Radiological features may be useful preoperatively when considering various differential diagnoses. Renal lesions may present clinically with back pain and urinary symptoms.* [redacted] *appears to have been experiencing bruising on his right abdomen, which is an unusual sign. The results of the histopathology and radiology relating to* [redacted] *tumour are not included in the material provided to the Coroner.*
>
> *There do not appear to be reports within the literature of any deaths related to anastomosing haemangioma, nor of infiltrative, locally invasive anastomosing haemangiomas.*
>
> *If* [redacted] *tumour was an anastomosing haemangioma, this would appear to be an extremely rare presentation, and one which has not yet been reported in the scientific literature (acknowledging my opinion is based upon a review of the literature carried out within the time constraints of a rapid coronial report).*
>
> *I would recommend confirming the tissue diagnosis by histopathological examination of a larger tissue sample obtained from the tumour either at the time of surgery, or from targeted postmortem sampling. My reasoning is twofold. Firstly, anastomosing haemangiomas can mimic malignant vascular tumours and vice versa. If the combination of clinical, radiological and histopathological findings meant that a malignant process could not be excluded on the available*

information, decision-making around surgical approach and management options may have been different. For example, I note that a diagnostic laparoscopy was initially considered an option due to the atypical nature of the presentation. Had this occurred, the infiltrative and inoperable nature of the tumour could have been discovered, a larger tissue sample could have been obtained to confirm the diagnosis, and treatment subsequently focused on [redacted] comfort. So whilst not outcome-changing in terms of offering any life-prolonging treatments, it would have significantly impacted the patient and family journey.

Secondly, if this is confirmed to be an anastomosing haemangioma, this case may be used in the future to guide decision-making around a rare and relatively recently described tumour.

Forensic Pathologist Examination

16. An external autopsy and an internal autopsy to the extent necessary to identify the cause of Mr C's death was ordered.

17. The forensic pathologist found:

    - *Multinodular right renal upper pole clear cell renal cell carcinoma with sarcomatoid differentiation; histology reviewed by specialist anatomical pathologists.*
    - *Local invasion into the adjacent retroperitoneum, involving the right adrenal gland, liver, right hemidiaphragm, and abutting the right lung lower lobe, with metastatic deposits in abdominal lymph nodes, omentum, and large bowel mesentery.*
    - *Evidence of surgery, including resection of a portion of the right lobe of the liver, peritonitis, and haemoserous peritoneal fluid.*
    - *Cardiac hypertrophy with associated moderate fibrosis, consistent with hypertensive heart disease.*
    - *Kidney changes consistent with hypertension.*
    - *Focal moderate coronary atherosclerosis of the left anterior descending artery.*
    - *Signs of blood loss: pale cut surfaces of the kidneys, and minimal blood able to be collected.*

18. There was a possible right rib metastasis noted on the postmortem CT scan.

19. The forensic pathologist concluded, 'the cause of death is intraoperative haemorrhage due to metastatic clear cell renal cell carcinoma (surgical treatment), on the background of hypertensive heart disease'.

20. Mr C's wife was notified of Mr C's cause of death and advised the findings by the forensic pathologist was the third different classification of tumour they had received. Further enquiries were made with the forensic pathologist who advised,

    The opinion of the Director of Surgical pathology at Harvard Medical School was based on a small portion of the tumour, in particular, the part which had undergone sarcomatoid differentiation. As the Autopsy Pathologist, I (and my colleagues, including Anatomical Pathologists specialising in Uropathology at the RBWH) had the benefit of looking at the primary tumour within the kidney, which had the classic macroscopic and microscopic features of a clear cell renal cell carcinoma. It is not unusual for a tumour undergoing transformation/differentiation to lose its original features, including

immunohistochemistry staining pattern. When this happens, the tumour can look like an unclassified sarcoma (hence sarcomatoid differentiation). One of the main differential diagnoses made when the tumour was first found on CT scan was that of a metastatic renal cell carcinoma (radiological opinion, when [redacted] chest pain was being investigated).

21. Mrs C was notified of the response from the forensic pathologist and advised that further enquiries would be made regarding the diagnosis which prompted the surgery.

Uropathologist

22. The uropathologist was asked to provide a statement regarding her diagnosis of the pre-operative biopsies taken from Mr C. She has advised,

    a) On 14 December 2023, she reported on the renal biopsy which had been collected the previous day. On examination, she found the features in the specimen were typical of an anastomosing hemangioma. There were no features of the biopsy such as significant cellular atypia, granular necrosis, increased mitotic activity or vascular invasion. No renal tissue or epithelioid tumour (carcinoma) was present. She says the samples were reviewed by two uropathology colleagues who both concurred with her opinion.

    b) On 20 December 2023, she was asked to report on an omental nodule biopsy. On microscopic examination, the sections revealed several separate nodules of a vascular tumour, with features like those seen in the previous renal biopsy. The morphological features were consistent with a multifocal anastomosing hemangioma.

    c) There were no features in either of the samples to indicate a renal cell carcinoma or other malignancy. It has been noted anastomosing haemangioma is a rare benign neoplasm which can be misdiagnosed as a malignancy leading to unnecessary radical surgery. The specimens she was provided were not representative of renal cell carcinomas.

    d) While not her area of expertise, she understands from subsequent discussions with her urology colleagues that surgery is more likely in the case of malignancy, as an anastomosing hemangioma may be treated conservatively with embolisation. She noted the erosion of the 4th rib as representing a possible malignancy but notes there has been no reference to a biopsy.

    e) In conclusion, she states,

        I understand [redacted] died as a result of uncontrolled bleeding during surgery. Any vascular tumour, whether benign or malignant, had the potential for uncontrolled bleeding at surgery. The risk of bleeding arises due to its vascular nature, rather than a benign or malignant process.

Wesley Hospital RCA

23. Following Mr C's death, the hospital undertook a Root Cause Analysis. The report is 42 pages long. It was received on 9 December 2024. A comprehensive summary of the events leading to Mr C's death is provided, including the events of the

haemorrhage, the activation of the massive transfusion protocol (MTP), and the resuscitation attempts.

24. I have attempted to summarise the key issues identified by the review team:

    a) Mr C had been assessed appropriately for surgery with cardiology review, stress echocardiogram and blood tests – haematology and biochemistry, coagulation studies, blood group and antibody screen.

    b) The hospital had the clinical capability to undertake the surgery.

    c) The theatres were undergoing renovations which affected the location of the theatre's supplies and storage.

    d) Based on the pathology reports, Mr C's pain, the evidence of bleeding during the 20 December 2023 procedure and no other therapeutic options, the decision by the urologist to undertake the surgery was appropriate.

    e) Consent by the urologist was appropriate, best practice would have been for Mr C to have been seen by the urology and hepatobiliary surgeons in the outpatient setting preoperatively. The lack of consultation though would not have changed the outcome.

    f) The urologist was responsible for organising theatre time, ICU admission, anaesthetist and booking the cell salvage equipment. There were difficulties arranging an anaesthetist for the case due to the time of the year.

    g) The urologist ordered appropriate pathology tests, including a group and hold preoperatively which follows best practice as per Maximum Surgical Blood Order Schedule.

    h) Mr C was noted to be 'oozy' post insertion of the Central Venous Line (CVL), and he was experiencing hypotension prior to the surgical incision.

    i) The anaesthetist acknowledged his decision to accept the case was based on his discussion with the urology consultant who advised he was stuck and keen to get the case done (it was Christmas, a difficult time of the year). The anaesthetist considered on reflection that the urology surgeon presented an optimistic view of the procedure, and the anaesthetist did not want to let anyone down.

    j) The anaesthetist had spoken with the anaesthetic team to check on equipment and noted the potential risk of bleeding.

    k) The anaesthetist deviated from practice by not suturing the CVL in place due to the patient's bleeding and ooze at the insertion site.

    l) The efficacy of the epidural block by the anaesthetist was not established prior to the administration of the general anaesthetic.

    m) The procedure commenced at 3.17pm when Mr C was noted to be hypotensive. It does not appear the anaesthetist requested a pause to understand what was causing Mr C's hypotension.

    n) The anaesthetist did not record CVP measurements on the anaesthetic record form.

o) Two anaesthetic technicians were allocated to this case. The anaesthetic support for the staff was also present throughout the case.

p) The morning case ran overtime which delayed the anaesthetic staff in preparing the room and equipment. The urologist and nurses remained in the room while the anaesthetist was preparing the patient for the surgery. Their presence in the theatre may have led to the anaesthetic team perceiving a sense of time pressure to perform.

q) The anaesthetist did not routinely work with the urology and hepatobiliary surgeons and did not usually undertake cases of this complexity at risk of major blood loss.

r) Mr C was hypotensive (low blood pressure) before the surgery started despite treatment with metaraminol. His fluid replacement may have been suboptimal between 3.30 and 5pm in treating Mr C's hypotension. Mr C was bleeding at a regular rate during the surgery, not from a single vessel which was making it difficult to form an accurate assessment of his blood loss. Tests showed Mr C was not coagulopathic, but his blood gas showed he was hypovolaemic (not enough fluid in his system).

s) The skill mix of the staff present for the procedure had not previously worked as a team before which may have contributed to a reluctance to speak up, use of certain materials, and poor communication generally. There was also some miscommunication regarding the level of assistance required as matters in the operating theatre became acute.

t) There were some issues with the setup of the theatre and clutter in the room. Further, there were some issues with the second rapid infuser which initially was thought to be due to a fault but then identified as likely due to the haemostatic agent contaminating the cell salvage blood.

u) There were issues with documentation, positioning of Mr C, skill mix for the complexity of the surgery, and lack of early administration of aggressive fluid resuscitation.

25. The recommendations which came out of the review were,

a) VMPs (visiting medical practitioners) to consider as well as completing the booking form, to call the theatre manager to discuss complexity of the case, requesting a morning session if a case is not being completed within the VMP's usual session time.

b) Review the organisation's procedures and requirement to document placement, standardise how devices are secured and confirm CVL is in the correct place at the time of insertion which may include a checklist.

c) Review anaesthetic staff roles and responsibilities regarding the documentation of fluid administered and overall blood loss intraoperatively, including how increasing blood loss is clearly communicated and escalated throughout the procedure.

d) Review the education and training provided to anaesthetic staff (nurses, technicians, and auto transfusionists) regarding the documentation and communication of estimated blood loss.

e) Review and amend the intra operative cell salvage procedure to ensure it clearly states whether it is the surgeon or anaesthetist who is responsible for cell salvage in relation to when it is being administered and should include a section on troubleshooting potential complications on the use of haemostatic agents and when it should be abandoned.

f) Review the education and training of all anaesthetic assistants and theatre nursing staff with regards to the use of cell salvage including troubleshooting when the cell salvage sucker should be swapped out for the general procedure sucker.

g) Chief Medical Officer to communicate with all anaesthetic and surgical VMPs regarding who is responsible for cell salvage in relation to when it is being administered and when it should be abandoned during the procedure.

h) Review the location and availability of emergency cell salvage equipment which would reduce the need for the cell salvage technician to leave the theatre.

i) Review and amend the hospital massive transfusion protocol (MTP) to clearly capture when to activate the MTP, ensuring it aligns with the current National Blood Authority major haemorrhage protocol transfusion ratios and includes instructions on the delivery, storage, and handling of blood products and frequency of formal blood tests.

j) Develop MTP education that includes simulation training with the procedural teams, which covers clearly establishing the communicating activation of the MTP and appropriate replacement ratios of all blood components.

k) Review the escalation process and triggers for activation of theatre emergency buzzer to alert all theatre staff that a patient is deteriorating or at risk of deteriorating to ensure theatre floor coordinators provide additional resources to the staff and they are feeling supported.

26. On 13 December 2024, I had my team write to the Wesley Hospital to enquire if Mr C's family had been provided with a copy of the RCA and/or if an open disclosure meeting had occurred.

27. I have since been advised, representatives from the Wesley Hospital, including the Chief Medical Officer met with Mr C's wife and family to provide an overview of the investigation and the recommendations. They were also provided a summary letter in lay language on 20 January 2025 outlining these details.

28. Further, that the Chief Medical Officer met with the primary surgeon and the primary anaesthetist in late January/early February 2025 to discuss the RCA report and the recommendations. Both agreed with the recommended improvements. The three consultants were responsible for presenting the case and the RCA recommendations to the morbidity and mortality meeting.

29. I sought a response from the surgeon and the anaesthetist to the RCA report. I was provided detailed statements outlining several issues concerning the case.

Expert Anaesthetist

30. There were several factors that went on in the theatre which caused me some concern and on reflecting on the evidence I had obtained to date I considered it necessary to obtain an independent report from an expert anaesthetist.

31. Dr Shadforth, a senior anaesthetist was briefed. She is the current Chair of Anaesthesia for the Day Unit at Greenslopes Private Hospital and sits on the Medical Advisory Committee at the hospital as the anaesthetic representative. She was briefed with the clinical records, the RCA, the statement of the pathologist, and the statements of the surgeon, and the anaesthetist.

32. Dr Shadforth has provided a comprehensive 28 page report. She is critical of several decisions made in this case. In summary these include:

    a) There was no documentation of a discussion as to whether there should be any further angiographic investigation of the blood supply of the tumour with a view to emobolisation preoperatively to attempt to reduce intraoperative blood loss. She states, "*this would be a usual preoperative investigation with a haemangioma of this size*".

    b) There were signs preoperatively that major blood loss was likely with the proposed surgery.

    c) Benign haemangiomas in adults are usually slow growing, the rapid deterioration of the patient was more in keeping with exponential growth of malignant tumour which was suggested clinically.

    d) There was no separate consent form from the surgeon retained to undertake the liver resection or any evidence of any discussion by this surgeon as to the proposed resection. This surgeon took over as primary surgeon for approximately half of the surgery but there were no clinical records by this surgeon. It is unusual for the primary surgeon not to document his own notes, when there has been a death on the operating table.

    e) There is a dispute as to what information was conveyed to the anaesthetist as to the scope of and risks of the surgery.

    f) It is difficult to understand why it was not recognised by the urologist and the hepatobiliary surgeon that surgery was futile and therefore promptly abandoned. She states,

> *In my literature review of some of the very small number of anastomosing haemangiomas reported worldwide, they all appear to be much smaller the* [redacted] *tumour, slow growing, have classic MRI findings; no capsule but clearly demarcated from tissue planes, and a soft spongy feel on palpation.* [redacted] *rapid decline, the rock hard feeling of the tumour, and the spread throughout most of the abdominal cavity with seeding along the IVC described by [the urologist] does not resonate with other reports in the literature of anastomosing haemangiomas.*

    g) The estimation of blood loss does not reflect the true value. There were major problems in the collection and documentation of the blood loss, and confusion about exactly what had been administered to Mr C.

h) The loss of Mr C's central line which had been used to administer the vasoconstrictor noradrenaline to support Mr C's blood pressure, was an added complication which would have compounded his hypotension.

i) The importance of a well-functioning team in major cases cannot be overemphasised. She states,

> *This team appeared to lack leadership, there appeared to be little communication from surgeon to anaesthetist, anaesthetist to surgeon, medical staff to nursing staff, and even nursing staff to each other, with the nurse in charge of the complex unaware of the unfolding situation, and the need for extra experienced staff to help until late in the surgery.*

j) The sponge count at the end of the case was 75, an extraordinarily large number of sponges with each sponge holding 50-100mls of blood. Ideally these should have been weighed and added to the estimated blood loss.

k) The cause of Mr C's death was due to uncontrolled bleeding. She states,

> [redacted] *died from uncontrolled, massive surgical bleeding, undergoing futile surgery for a disseminated tumour that was never going to be resectable. Improvement in several aspects of anaesthetic management may have kept* [redacted] *alive for longer;* ***however, no matter what had been done, I believe the outcome would have been the same*****.** (emphasis added)

33. As to the appropriateness of the care provided to Mr C by the anaesthetist, Dr Shadforth notes the anaesthetist says the surgeon painted an optimistic picture and that he did not think there would be any invading tissue and thought it may be possible to do a nephrectomy without resecting the liver but that he would have a liver surgeon in the room as a precaution. Dr Shadforth says this does not resonate with the MRI findings from 20 November 2023, which showed broad areas of tumour in contact with the hemidiaphragm, vertebral column, ribs, and intercostal spaces and IVS, with invasion into the right lobe of the liver with early shunting of blood into the right hepatic vein.

34. Dr Shadforth is of the opinion the anaesthetist had been thorough in his preparation for the case. This includes his pre-operative consultation with Mr C the week prior to the surgery and the list of equipment he requested. The anaesthetist inserted two large bore 16-gauge cannula peripheral lines, an arterial line, a thoracic epidural, a central venous line, and a double lumen endotracheal tube. She states, '*this would be considered thorough preparation*'.

35. Dr Shadforth was critical of the timing of the surgery, and states,

> *A case as complex as this, as well as being scheduled on a regular list with a regular team, is ideally performed starting in the morning. Thus, there is a whole day for the surgery, where there are more staff around, both hospital and blood bank, and far more chance of finding extra specialist anaesthetists and surgeons if and when problems arise.*

36. Dr Shadforth noted it was the anaesthetist's intention to suture the CVL after the procedure. This was to allow the oozing to stop so an antibiotic impregnated foam disc dressing could be applied and so the surgery was not further delayed. She states,

Every decision we make in medicine relies on balancing risk and benefits, and although in retrospect this was an unfortunate decision, and contributed to the loss of the line later in the case, [the anaesthetist] had thought about it at the time.

37. Dr Shadforth questioned the decision by the anaesthetist to use the Trendelenburg (head down) positioning of Mr C as an aid to bolster his blood pressure. She is of the view Floseal, a haemostatic matrix of gelatin and thrombin would have been required regardless of the positioning of the patient. She did think the repeated changing of the operating table position would not have been helpful as a long-term solution for hypotension. She states, '*it would have been distracting and increased the chances of losing lines and contributing to liver bleeding*'.

38. Dr Shadforth notes there appeared to be a knowledge deficit in the use of the cell saver and that it was wasted on inappropriate use, that is, it was contraindicated with Floseal which was used by the surgeon in the case. She states,

    Realisation that the cell saver was not useful, and activation of the MTP [Massive Transfusion Protocol] *earlier, may have decreased some of the cognitive load for the* [anaesthetist] *and saved some of the products sent from the blood bank, however it would not have altered the outcome for this case.*

39. Dr Shadforth is critical of the use of the Massive Transfusion Protocol and the late activation of this. She acknowledges the late activation was likely related to the use of the cell saver which is understandable. She noted the hospital from its RCA planned to review the MTP procedure.

40. In summary, Dr Shadforth formed the opinion,

    a) Retrospectively it would have been preferable to use only narcotic rather than local anaesthetic in the epidural, thus making hypotension more manageable.

    b) The central line should have been sutured and inotropes administered.

    c) The extent of blood loss should have been recognised and replaced earlier in the case.

    d) The use of the cell saver should have been abandoned and MTP activated earlier, with more appropriate administration of products and calcium.

    e) Extra intravenous access should have been established earlier, allowing more rapid fluid administration.

    f) Assistance from an anaesthetist with skills in ECHO and the ability to assist with the insertion of another central venous line would have been helpful.

    g) There is no doubt the emergency button should have been activated when the blood pressure fell below 50 systolic.

    h) There was poor communication between team members.

41. Despite some deficits in care, Dr Shadforth states,

> *All these measures, if they had been instituted, may have kept* [redacted] *alive for a longer period of time, but I do not believe he would have been able to survive the surgery, due to the inoperability of his tumour.*

42. Dr Shadforth concludes Mr C had an inoperable cancer and states,

> *There was undue reliance on an incorrect histopathological diagnosis that was inconsistent with radiological imaging, and clinical findings when the patient was first opened on the operating table.*
>
> *That would have been a good juncture to close the patient and return him to the ward.*
>
> *The theatre team were unused to the type of surgery, or working together, there was no clear leadership and poor communication. The situation rapidly escalated out of control and the outcome was inevitable.*
>
> *Surgical blood loss was not able to be controlled.*
>
> *The only way his on table death could have been avoided would have been if the surgery had been aborted, either prior to coming to theatre, or at the beginning of the case.*

Responses to Dr Shadforth's Report

43. Dr Shadforth's report was provided to the anaesthetist, the urologist, the hepatobiliary surgeon, and the Wesley Hospital for comment.

The Anaesthetist

44. The anaesthetist essentially accepts Dr Shadforth's opinion and noted it was a comprehensive and detailed report. He has reflected on the learnings from the case.

The Hepatobiliary Surgeon

45. The surgeon has advised the decision to operate was a difficult but carefully considered one. He says there was contention as to the nature of the tumour. While biopsies suggested the tumour was benign, the radiological and clinical picture suggested a malignant process. This particularly in circumstances where Mr C had experienced severe symptoms and had demonstrated signs of physical deterioration.

46. Due to the complexity of the case, it was discussed at a multidisciplinary meeting at the Royal Brisbane and Women's Hospital involving other specialists. The overall opinion was to offer Mr C surgery.

47. The surgeon says he and the urologist are one of few surgeons who would perform the complex surgery which was required and that they had worked together on similar cases over the last four years with successful outcomes. He says their usual practice was for the urologist to undertake the consent to avoid duplication. He met with Mr C and his family and reiterated and discussed possible complications regarding the liver surgery, and those complications are documented on the consent form obtained by the urologist.

48. The urologist was leading the decision making and organisation of the case. He was asked to provide an opinion as to whether the tumour was removable, his assessment was that a partial liver resection would be required.

49. As to the decision to continue operation once the mass had been exposed and assessed, the surgeon states,

> *The fundamental problem we had as an operating team is that we were not able to get a complete assessment and exposure of the extent of the tumour during the early stages of dissection. This was due to its vascular nature and large size. Despite the constant bleeding ooze and volatile hypotension episodes intraoperatively - we were making slow and steady surgical progress. Occasionally non - resectability of a tumour can only be made after a few hours of earnest surgical dissection. It was only in retrospect, after the patient had arrested and died that we discovered that the tumour was quite extensively adherent to the diaphragm. We would have not really known this until the final stages of dissection. Even then – it is probable that we may have removed the main bulk of the tumour but left some of the tumour behind on the diaphragm as it would have been the safer thing to do. It is also known that the most effective way to cease bleeding from the tumour is to remove the tumour completely or at least the bulk of it.*

The Urologist

50. The urologist has advised there were no features to suggest the tumour was inoperable based on careful scrutiny of all of Mr C's imaging and following review of the imaging with the hepatobiliary surgeon.

51. It was his assessment that Mr C had a large, symptomatic multifocal tumour which was not malignant, but potentially invasive. His decision to proceed with the surgery was based on the considered opinion that Mr C's pain and risk of bleeding would persist and likely worsen. Surgery was considered the only chance of survival as the mass would continue to grow.

52. As to the decision to continue the procedure after discovering the features of the tumour, he states,

> *These findings became apparent only after further dissection and exposure, and they significantly altered our understanding of the tumour's extent and operability.*
>
> *While we were aware from the laparoscopy and imaging that* [redacted] *had peritoneal tumour deposits, the full extent of the tumour's inoperability only became evident later during the procedure. At that point, the decision to continue operating was driven by the need to manage active bleeding at the site,* [redacted] *blood pressure could not be stabilised, and his condition subsequently deteriorated.*
>
> *I also noted in my operation report that the 'tumour was inseparable from the intra-hepatic IVC'. I confirm that this finding was not apparent during our initial review of* [redacted] *kidney and tumour following the incision, it only became evident upon further inspection and dissection after* [redacted] *death.*

53. As to Dr Shadforth's opinion regarding preoperative embolisation to reduce intraoperative blood loss, he states,

[redacted] *MRI dated 29 November 2023 included arterial (angiographic) phase imaging, which demonstrated the blood supply to the kidney and mass. I carefully reviewed this imaging, as is my usual practice when planning surgery for large renal tumours. The vast majority of the blood supply arises from a single renal artery. Preoperative angio-embolisation involves completely blocking blood flow through the targeted vessel. This procedure requires anaesthesia, as it can cause severe pain to the patient due to the kidney and mass being deprived of blood. It also induces inflammation of the affected tissue, and as this process progresses, the patient may become unwell. Therefore, if angio-embolisation was performed, surgery should follow as soon as possible after.*

When tumours arise from the kidney, the entire blood supply into the kidney and tumour can alternatively be interrupted by controlling the renal artery. This is a requisite step during nephrectomy and is performed as early as possible.

According to the European Association of Urology (EAU)', preoperative embolization offers no benefit prior to routine nephrectomy and should be reserved for patients who are inoperable or require palliation of bleeding. I had carefully reviewed the two articles cited by the EAU (enclosed), both of which confirm that pre-operative embolization offers no benefit and may, in fact, be associated with increased blood loss.

In [redacted] *case, the majority of blood loss prior to cardiac arrest was due to venous back-bleeding from the liver edge. This type of bleeding cannot be prevented by angio-embolisation.*

54. As to the use of Floseal, the urologist has advised at the time of Mr C's surgery, he was not aware of the issue regarding the use of cell saver being contraindicated with Floseal. He has since conducted significant education on the topic.

55. A literature review on anastomosing haemangiomas of the kidney had been undertaken in preparation for a previous case. There was no reported case of metastases from such lesions. However, in his discussions with the uropathologist she directed him to a journal article titled, 'Multifocal renastomosing haemangioma of the kidney with intravascular growth and sinus fat invasion: a rare benign mimic of angiosarcoma', which summarised the available literature.

56. The urologist says given the unusual features of the case he sought advice from the uropathologist, and she was adamant the biopsy report was correct. He states,

    For a confirmed case of an anastomosing haemangioma, surgery is the only available treatment and is recommended for resectable lesions in patients who are fit for surgery. I also sought input of colleagues at the MDT …

    Although [redacted] *tumour was larger than other anastomosing haemangiomas reported in the literature, its size was not incompatible with this diagnosis.*

The Wesley Hospital

57. The Chief Medical Officer accepts the analysis expressed by Dr Shadforth, and states,

Overall, we consider this report to be comprehensive and balanced. We consider that Dr Shadforth has provided a detailed synthesis of the available information and provided deep clinical understanding of the events surrounding the death of [redacted]. We acknowledge the insights provided in Dr Shadforth's report regarding human factors, systems issues and potential opportunities for improvement, and note these are similar to the findings and recommendations from the RAC undertaken by the TWH. We note added detail regarding pre-operative clinical information and assessment.

58. The Wesley Hospital has confirmed it has taken the opportunity to identify and action additional opportunities for improvement because of Dr Shadforth's review, and thanks Dr Shadforth for her comprehensive and considered review.

Conclusion

59. After considering the material obtained during the coronial investigation, I consider I have sufficient information to make the necessary findings required by s45 of the *Coroners Act 2003*, in relation to Mr C's death.

60. Mr C's was a complex case with conflicting information regarding his diagnosis and the operability of the offending masses. As would be standard practice in such a complex case, the urologist sought input from the hepatobiliary surgeon and took the case to the MDT. The consensus was that surgery was warranted.

61. The urologist also consulted the uropathologist who provided literature supporting the diagnosis of anastomosing haemangiomas to support her findings as to the biopsies. It comes down to a clinical decision on the information available to the surgeons at the time. I accept the decision to proceed with the surgery was made with due care and consideration and was reasonable in the circumstances.

62. I accept the explanation by the urologist regarding emoblisation and that it was not appropriate in these circumstances.

63. Dr Shadforth opines, if the surgery was to proceed, it should have been abandoned early given the inoperability of the tumour. I though accept the evidence of the surgeons that it was not until well into the procedure that the nature of the mass became clear, and that by that stage the bleeding had already commenced, with the focus then being on attempts to stem the bleeding.

64. I am satisfied the hospital has undertaken a thorough review of the case. As has been outlined herein, issues have been identified which were not ideal. Dr Shadforth has also identified some additional issues. I acknowledge the hospital has already made improvements to practice and that it will implement further improvements based on the report of Dr Shadforth.

65. Importantly, Dr Shadforth has confirmed, which I accept, that none of the identified issues in the care Mr C received would have been outcome changing. Tragically, given the invasive nature of his tumour, the massive bleeding would always have resulted in his death. I accept the forensic pathologist's opinion as to the cause of Mr C's death.

66. It is clear the consultant medical officers who were involved in this case have reflected on it and there have been several learnings. If they have not already, I encourage them to consider publishing an article on Mr C's case so that others can hopefully learn from the very unusual presentation in the face of a biopsy result which confirmed an anastomosing haemangioma.

67. Due to the changes which have been already implanted by the hospital, I am not satisfied that it is in the public interest to hold an Inquest (formal court hearing). I have though sought permission from Mr C's family to publish de-identified findings so that others may learn from the events of this case.

68. I extend my condolences to Mr C's family and friends for their loss. It is always very difficult to lose someone in such circumstances. I recognise there are no words which can adequately express the depth of your sorrow, or the profound impact Mr C's loss has had on you all.

Findings required by s.45

Identity of the deceased – Mr C

How he died –

CAUSE OF DEATH
1(a) Intraoperative haemorrhage

ANTECEDENT
1(b) Metastatic clear cell renal cell carcinoma (surgical treatment)

2. Other significant conditions contributing to the death but not related to the underlying cause given in Part 1
Hypertensive heart disease

Place of death – The Wesley Hospital AUCHENFLOWER QLD 4066 AUSTRALIA

Date of death– 16 January 2024

I close the investigations.

Melinda Zerner
Coroner
CORONERS COURT OF QUEENSLAND - BRISBANE OFFICE
18 February 2026