CORONERS COURT OF SOUTH AUSTRALIA

INQUEST INTO THE DEATH OF KATHLEEN ETHEL SALTER

[2025] SACC 18

Inquest Findings of her Honour Deputy State Coroner Kereru

12 June 2025

CORONIAL INQUEST

Examination of the cause and circumstances of the death of a 76-year-old woman who died following elective surgery at the Clare Hospital. The Inquest explored the events leading up to and during the surgery, including the circumstances that led to the surgeon becoming misoriented and dividing incorrect physiological structures and injuring a major blood vessel, as well as how those injuries were addressed.

Held:

1. Kathleen Ethel Salter, aged 76 years of Clare, died at Royal Adelaide Hospital on 4 June 2020 as a result of multi-organ failure and sepsis due to complications of cholecystectomy.

2. Circumstances of death as set out in these findings.

Recommendations made.

Counsel Assisting: MR D EVANS

Interested Party: YORKE AND NORTHERN LOCAL HEALTH NETWORK
Counsel: MR K LINDNER - Solicitor: CROWN SOLICITOR

Witness: DR C TAN
Counsel: MR K LINDNER - Solicitor: CROWN SOLICITOR

Witness: DR D LITURI
Counsel: MR A HARRIS KC - Solicitor: WALLMANS LAWYERS

Witness: DR P KURUPPU
Counsel: MR J HOMBURG - Solicitor: GILCHRIST CONNELL

Hearing Date/s: 13/03/2024, 22/03/2024, 25/03/2024-28/03/2024

Inquest No: 04/2024 File No/s: 1092/2020

INQUEST INTO THE DEATH OF
KATHLEEN ETHEL SALTER
[2025] SACC 18

Introduction

1 Mrs Kathleen Ethel Salter was 76 years old when she died at the Royal Adelaide Hospital (RAH) on 4 June 2020. She had been retrieved from the Clare Hospital on 20 May 2020, following surgery to remove her gallbladder.

2 Mrs Salter's past medical history was atrial fibrillation for which she was prescribed apixaban and atenolol. She also suffered from sleep apnoea and used a continuous positive airway pressure (CPAP) machine.

3 At the time of her death, Mrs Salter lived in Clare with her (now late) husband. She had three children, six grandchildren and five great grandchildren. Mrs Salter was a much-loved member of her family.

4 Mrs Salter was a regular patient of the Clare Medical Centre and saw different general practitioners (GPs) at different times. On 20 February 2020, Mrs Salter saw Dr Tod Owen, a GP who had trained in laparoscopic surgery.[1] On that day, Mrs Salter complained of right upper quadrant abdominal pain that radiated around her abdomen to her back. She reported that she had suffered gallstones in the past and wondered if the pain was reflective of a recurrence of that condition. Dr Owen's assessment was '*mild Cholecystitis until proven otherwise*'. He prescribed Mrs Salter antibiotics and referred her to have bloods and an abdominal ultrasound. Dr Owen asked Mrs Salter to return to see him in 10-14 days, or to present to hospital if she was not able to manage the pain or it became worse.

5 Two days later, on a Saturday, Mrs Salter presented to the Clare Hospital Outpatients Department and was seen by Dr Prashan Kuruppu, a GP with a specialist qualification in anaesthetics. On this occasion Mrs Salter presented with a continuation of her pain and a low-grade fever. Dr Kuruppu reviewed the blood and imagery reports. While the blood results were unremarkable, the ultrasound identified '*a thickening of the gallbladder wall and an impacted gallstone ... within the gallbladder neck*'.[2] Dr Kuruppu discussed the possibility of a laparoscopic[3] cholecystectomy[4] in the near future and suggested that she complete the course of antibiotics as prescribed by Dr Owen.

6 On 28 February 2020, Mrs Salter returned to the Clare Medical Centre and saw Dr Owen again. After review of the ultrasound, Dr Owen diagnosed Mrs Salter with chronic cholecystitis and referred her to Dr Darren Lituri, a general surgeon, for a laparoscopic cholecystectomy. He noted that she was '*probably a good candidate*'[5] for the procedure to take place at Clare Hospital.

---

[1] Exhibit C16, paragraph 19
[2] Exhibit C5, pages 58, 97-98 (ultrasound report)
[3] Keyhole surgery used to inspect and operate on organs inside the abdominal and pelvic areas
[4] A laparoscopic procedure to remove the gallbladder
[5] Exhibit C5, page 59

7 Mrs Salter saw Dr Lituri on 25 March 2020, who agreed with both Dr Kuruppu and Dr Owen's assessment. Dr Lituri booked Mrs Salter for an elective laparoscopic cholecystectomy at Clare Hospital on 18 June 2020. On 15 May 2020 this procedure was brought forward at short notice and Mrs Salter was re-booked to undergo surgery on 20 May 2020. The events surrounding the rescheduling of Mrs Salter's surgery were the subject of some evidence and will be canvased later in the Finding.

8 Mrs Salter underwent a pre-anaesthetic consultation with Dr Kuruppu on 19 May 2020. Some concerns were identified in relation to Mrs Salter's upcoming anaesthetic, and so a second GP anaesthetist was arranged to be present at the surgery. With these additional arrangements in place, Mrs Salter's surgery remained on the list at Clare Hospital.

9 On 20 May 2020, Mrs Salter was second on Dr Lituri's surgical list. The first procedure (also a laparoscopic cholecystectomy) proceeded uneventfully. Following this, Mrs Salter's procedure commenced. There were two attempts to intubate Mrs Salter, with the third being successful and the procedure commencing at 11:10am. Dr Lituri found the gallbladder to be inflamed and embedded into the liver. He also encountered difficulties with dissection and an intraoperative venous bleed. Upon the removal of the gallbladder, a significant bleed was discovered which saw Mrs Salter very quickly become haemodynamically unstable. Dr Lituri converted the laparoscopic procedure to a laparotomy[6] and sutured a bleeding vessel in the gallbladder bed. Mrs Salter was stabilised with two units of O negative blood and provided with vasopressor support. These blood products were past their use by date. Her abdomen was packed with gauze and closed at approximately 4pm.

10 The MedSTAR retrieval team had been contacted at approximately 2pm[7] and arrived at Clare Hospital at approximately 4pm. Upon her retrieval and arrival at the RAH at 7:30pm, Mrs Salter was taken immediately to theatre for an emergency laparotomy. It was at that time that the surgeon, Dr Chuan Tan, discovered the common bile duct had been transected and the right portal vein and right hepatic artery were both divided. Mrs Salter's liver was found to be partly ischaemic. To address these findings, a hemi-hepatectomy[8] and left hepato-jejunostomy[9] were performed. Upon the surgery concluding, Mrs Salter remained intubated and was admitted to the Intensive Care Unit (ICU) of the RAH.

11 Over the course of the next four days, Mrs Salter's haemodynamic status was stable, but her hepatic function declined with increasing encephalopathy thought to be as a result of both hepatic and renal failure. She was commenced on dialysis with positive effect. On 29 May 2020, Mrs Salter became febrile and hypotensive with an increase in her inflammatory markers with a possible collection and small bowel pathology on CT scan. Mrs Salter underwent a further laparotomy with a peritoneal lavage[10] being performed.

---

[6] A surgical incision into the abdominal cavity
[7] Exhibit C15, page 5
[8] Removal of a portion of the liver
[9] Surgical creation of a communication between the hepatic duct and the jejunum
[10] Washing of abdominal cavity to allow inspection

12 Mrs Salter's condition improved with a decrease in her inflammatory markers until 3 June 2020 when she developed septic shock, with a CT scan suggesting bowel ischaemia. Another laparotomy was performed which did not reveal ischaemia. However, due to Mrs Salter's ongoing deterioration and poor prognosis a decision was made, in consultation with her family, to withdraw active treatment. Surrounded by her family, Mrs Salter died at 4:12 pm[11] on 4 June 2020.

Cause of death

13 A pathology review was conducted by Dr Jane Alderman of Forensic Science SA (FSSA). Dr Alderman's findings were discussed with forensic pathologists, Dr Cheryl Charlwood and Dr Karen Heath of FSSA. As Mrs Salter had been an inpatient in a hospital for a number of days, with her clinical treatment and surgeries extensively documented, an autopsy was not considered necessary. The pathology review was completed on 10 June 2020[12] with the cause of death suggested as '*multi-organ failure and sepsis due to complications of cholecystectomy*'. I so find.

Definitions

Cholecystectomy

14 By way of explanation, a cholecystectomy is the surgical removal of a gallbladder. The gallbladder is a small organ located under the liver that stores bile which is used by the body for the digestion of fat. The procedure is commonly performed to treat inflammation of the gallbladder. This medical condition is called cholecystitis and is often caused by the presence of gallstones. A cholecystectomy is commonly performed by way of a laparoscopic procedure; making small incisions in the abdomen and using a camera and specialised instruments to remove the gallbladder. This is a less invasive procedure. In more complex procedures, a laparotomy is performed which is a larger incision in the abdomen and provides direct access to remove the gallbladder, often referred to as an '*open procedure*'.

Critical view of safety

15 In order to safely remove the gallbladder by way of laparoscopic procedure, prevailing medical training suggests that the '*critical view of safety*' should be achieved. The critical view of safety is unique to gallbladder surgery. It involves identifying the cystic duct and the cystic artery as the only two structures entering or passing into the gallbladder, with the gallbladder clearly dissected away from the liver for a reasonable distance, before the gallbladder is removed. If this is not achieved, or it is believed to be achieved in error, injury can be sustained during the removal of the gallbladder by interfering with the incorrect structures, notably those which supply blood to the liver. The critical view of safety is important as there are anatomical variations in the structure of vessels from patient to patient which can be easily misidentified. As will be detailed later in the Finding, in Mrs Salter's case, her gallbladder was positioned intrahepatically, which increased the difficulty of identifying the critical view of safety.

---

[11] Mrs Salter was pronounced life extinct at 5:08pm on 4 June 2020
[12] Exhibit C2a

CT cholangiogram

16 An intraoperative cholangiogram (IOC) assists with the critical view of safety. The mechanics of this procedure involve a catheter being inserted through one of the small abdominal incisions and then through an incision in the cystic duct, typically near the gallbladder neck, then advanced into the cystic duct. Special radiographic contrast dye is then injected allowing the common bile duct to be clearly visualised on live x-ray imaging. This imagery has the benefit of identifying potential anatomical variations in the biliary tree before the irreversible severing of the vessels and the removal of the gallbladder. This is undertaken to prevent injury to the common bile duct and hepatic artery. It is also used to look for filling defects within the bile duct, to ensure a smooth tapering of the bile duct and flow into the duodenum.

17 The above three terms will be referred to frequently throughout the Finding.

Reason for Inquest

18 Mrs Salter's death was reported to the South Australian Coroners Office on 4 June 2020 by an ICU registrar by way of medical deposition. The reason for reporting was that her death was considered to have met the criteria for a reportable death under Section 3 of the *Coroners Act 2003* (the Act) namely, that death was 'during, **or as a result**, or within 24 hours of a surgical procedure, or invasive medical or diagnostic procedure, or anaesthetic procedure'.[13] While Mrs Salter had undergone three surgical procedures following the cholecystectomy (at the RAH), it was evident from the reporting documentation[14] that it was the cholecystectomy performed at Clare Hospital that gave rise to the reason for the report. There was also reference in the deposition to this surgery being additionally complicated by a difficult intubation and airway, a difficult dissection and bleeding requiring a transfusion of two units of blood and four gauze swabs to be packed in the abdomen before Mrs Salter was retrieved to the RAH. Of most concern, however, was reference to a transected common bile duct, a divided right portal vein and a divided right hepatic artery from the surgery at Clare Hospital. These injuries required a hemi-hepatectomy[15] and left hepato-jejunostomy[16] at the RAH, upon Mrs Salter's retrieval. Put simply, the deposition properly gave rise to the concern that Mrs Salter's death was '**as a result'** of the surgery at Clare Hospital.

19 During the investigation process an independent expert clinical review was obtained from Professor Robert Padbury, a general surgeon with a special interest in bile duct injuries and liver and pancreatic surgery. Professor Padbury identified '*significant discrepancy*' between the operation record and what must have happened during the surgery based on the findings at the rescue operation once Mrs Salter was at the RAH, namely the unrecognised injuries to the bile duct, the portal vein and hepatic artery. Professor Padbury described this in his report as '*the very upper end of the spectrum of injury that one could ever see secondary to undertaking a cholecystectomy*'.[17] It was therefore considered necessary to conduct an Inquest into the cause and circumstances of Mrs Salter's death. It is important to note that just prior to the Inquest commencing,

---

[13] *Coroners Act 2003*, Section 3(1) reportable death (d) (i)
[14] Death Report to Coroner Medical Practitioner's Deposition
[15] Removal of a portion of the liver
[16] Connection of the bile duct to the jejunum
[17] Exhibit C14, page 2

a histological report (from testing undertaken on the removed gallbladder) came to the attention of the Coroners Court. Professor Padbury was provided with this report which revealed the microscopic findings of '*denuded mucosa, fibrotic thickened gallbladder wall and florid chronic inflammation with* ***multinucleated foreign body giant cells****…*'[18] Professor Padbury identified the finding of multinucleated foreign body giant cells as significant as it placed the cholecystitis from which Mrs Salter was suffering, into a more serious category which had implications for surgery.[19] This was not a variant that could have been identified with imaging, only with histopathology. I will return to this important issue later in the Finding.

20 There were other ancillary issues identified and explored at Inquest. They included Mrs Salter's surgical procedure on 20 May 2020 being undertaken during the height of the COVID-19 pandemic and taking place in a regional area; the Clare Hospital. During the Inquest, evidence was heard in relation to what, if any, impacts these factors may have had on Mrs Salter's death. Ultimately, it was submitted that while the usual smooth running of the surgical lists was affected by COVID-19, creating anxiety amongst staff and resulting in the lack of surgical resources (including qualified surgical staff) in the regional area, neither impacted directly or indirectly on Mrs Salter's death. I agree with this submission. There was also the issue of the expired blood products required when Mrs Salter's portal vein was damaged. It is certainly an undesirable state of affairs to conduct a surgical procedure without ensuring the blood stores were in date. However, when it was realised that the blood was a few hours out of date, consideration was given to the risk versus benefit of transfusing such blood with expert guidance provided over the phone. It was determined that the benefit far outweighed the risk in the circumstances. This ultimately prevented Mrs Salter from suffering fatal hypovolaemia in the Clare Hospital operating theatre. Furthermore, a process was put into place after Mrs Salter's surgery to ensure that this would not occur in the future.[20] In the circumstances, I am satisfied that with their brief mention in their chronological place, these issues do not require further exploration.

21 The only other issue relating to the procedure being conducted in Clare was that the Clare Hospital did not then, and does not now, have a cholangiogram CT machine. Evidence was heard during the Inquest that this imaging tool is important to assist with determining the anatomy before the gallbladder is removed. As will be detailed below, it is probable that Dr Lituri would have utilised this tool in Mrs Salter's case had it been available. Furthermore, had he utilised it, the expert evidence supported a conclusion that this would have illuminated the anatomical confusion that Dr Lituri subsequently operated under. Given the difficulties that Dr Lituri encountered in the laparoscopic procedure, it naturally followed that had a cholangiogram CT machine been available, Mrs Salter's death could have been prevented. I consider this to be an important issue and one that requires urgent attention. I will detail this later in the Finding by way of a recommendation.

---

[18] Exhibit C6a, emphasis added
[19] Transcript, page 254
[20] Exhibit C8b, Letter to Dr Joshi dated 14 January 2021 from Ms Wadsworth, Regional Blood Management Committee

Evidence at Inquest

22 The documentary evidence at Inquest comprised 34 exhibits.

23 In addition to the documentary evidence, oral evidence was heard from:

- Dr Chuan Tan, medical practitioner, Royal Adelaide Hospital
- Dr Darren Lituri, general surgeon, formerly of Clare Hospital
- Dr Prashan Kurrupu, assistant surgeon, Clare Hospital
- Professor Robert Padbury (expert witness), Clinical Director Surgery and Perioperative Medicine, Flinders Medical Centre

Hindsight bias

24 I warn myself concerning a vital consideration in the assessment of the evidence and any potential criticisms of witnesses in this Inquest, namely hindsight bias.

25 A description of 'hindsight bias' is given in the Australasian Coroners Manual, namely:

> 'The tendency after the event to assume that events are more predictable or foreseeable than they really were. What is clear in hindsight is rarely as clear before the fact. If it were, there would be far fewer mistakes made. It is an obvious point, but one that nonetheless bears repeating, particularly when Coroners are considering assigning blame or making adverse comments that might damage a person's reputation…
>
> Hindsight, of course, is a very useful tool for learning lessons from an unfortunate event. It is not useful for understanding how the involved people comprehended the situation as it developed. The distinction needs to be understood and rigorously applied.'

26 As stated, I am very mindful of this warning when considering the evidence in this Inquest.

27 In writing this Finding, I do not purport to summarise all of the evidence tendered or heard at the Inquest, but refer to it only in such detail as appears warranted by its forensic significance. It should not be inferred from the absence of reference to any aspect of the evidence that it has not been considered.

Circumstances leading up to death

Mrs Salter is diagnosed with cholecystitis

28 There is no controversy in the events leading up to and including Mrs Salter's first appointment with Dr Lituri on 25 February 2020. While I have touched briefly on these facts at the beginning of the Finding, it is important to note that this aspect of the clinical care leading up to the surgery was all timely and appropriate. This included:

- On 20 February 2020, Mrs Salter had experienced right upper quadrant pain, radiating around to her abdomen and then to her back and consulted with her regular GP, Dr Owen.
- At the consultation, Dr Owen agreed with Mrs Salter's suspicion (based on her medical history) that a gallbladder condition was likely and referred her for bloods and an abdominal ultrasound and prescribed antibiotics. He advised

Mrs Salter to present to hospital if the pain worsened, otherwise he would see her in a fortnight.

- Mrs Salter's pain did worsen, and she presented to the Clare Hospital two days later and was seen by local GP anaesthetist Dr Kuruppu.
- Dr Kuruppu viewed the results from the recent investigations and noted that the ultrasound identified '*a thickening of the gallbladder wall and an impacted gallstone ... within the gallbladder neck*'.[21] Dr Kuruppu suggested that she complete the course of antibiotics as prescribed by Dr Owen and raised the possibility of requiring a cholecystectomy.
- On 28 February 2020, Mrs Salter returned to the Clare Medical Centre and saw Dr Owen again. This was the planned consultation to review the results of the bloods and ultrasound. Although not specifically addressed in his note, it is likely that Dr Owen had access to and reviewed Dr Kuruppu's entry from 22 February 2020 at the Clare Hospital as the electronic records of the Clare Hospital and the Clare Medical Centre were linked electronically.[22] After review of the ultrasound, Dr Owen diagnosed Mrs Salter with chronic cholecystitis and referred her to Dr Darren Lituri, a general surgeon, for a laparoscopic cholecystectomy. A letter of referral was written by Dr Owen to Dr Lituri dated 28 February 2020 and attached the ultrasound findings and blood results.[23]
- On 25 March 2020, Dr Lituri saw Mrs Salter at the Clare Medical Centre and booked her surgery to take place at the Clare Hospital on 18 June 2020. He wrote to Dr Owen to advise him of the planned surgery and to ensure that Mrs Salter stopped her anticoagulant medication (apixaban) two days prior to the surgery.[24]

Dr Darren Lituri, general surgeon

29 Dr Darren Lituri obtained a Bachelor of Science from the University of Central Queensland in 1986 and then a Bachelor of Applied Science with an Honours Degree in Science at Flinders University in 1995 and 1996. He was then conferred with a Bachelor of Medicine and Surgery at Flinders University in 2000. Dr Lituri was accepted in the surgical trainee program and obtained a Fellowship with the Royal Australian College of Surgeons in General Surgery in December 2013. He commenced working in private practice as a consultant surgeon in February 2014. Prior to that, Dr Lituri had been working as a registrar at major tertiary hospitals in Adelaide. During this period of his training, Dr Lituri was frequently on call for emergencies which often consisted of trauma related matters. When working as a senior fellow at the Lyell McEwin Hospital, his primary work was in the acute surgical unit. Dr Lituri explained that experience as a trauma surgeon involved the stabilisation of patients as well as surgical repair. He explained that this experience assisted in his ability to remain calm and provide careful and clear orders to theatre staff while attempting to stabilise a patient in an often high pressure environment.

---

[21] Exhibit C5, pages 58, 97-98 (ultrasound report)
[22] Transcript, page 168
[23] Exhibit C7, page 1
[24] Exhibit C7, page 17

30 Once reaching consultant level, Dr Lituri worked as a visiting specialist at a number of private hospitals including the Calvary Wakefield, Calvary Central Districts Hospital and Northeast Community Hospital as well as public hospitals such as Gawler Health Service, Lyell McEwin Hospital and Modbury Hospital. For a period of 13 months between April 2019 and June 2020, Dr Lituri was a fee for service staff specialist at Clare Hospital. This was where Mrs Salter's surgery was performed. Dr Lituri indicated in his statement that laparoscopic cholecystectomy was a routine part of his practice in May 2020 and he estimated that he had performed hundreds of these procedures as the primary operator by that time. However, Clare Hospital was the only hospital at which he operated that did not have facilities for cholangiography.[25]

31 Dr Lituri explained how he came to provide surgical services at Clare Hospital. He was approached to take over the practice of retiring surgeon, Dr Andrew Lord. Initially Dr Lituri's practice only required him to consult once a month, but as his practice became busier, the consulting and operating became a fortnightly arrangement. When operating at Clare Hospital, Dr Lituri relied on the GP anaesthetists and GP surgical assistants.[26] This is commonplace in regional areas.

32 Dr Lituri gave oral evidence at the Inquest. He also provided a statement.[27] Dr Lituri was working at an interstate hospital at the date of his summons and could have elected to give his evidence remotely via Webex. It was conveyed by Dr Lituri's solicitor, prior to the Inquest commencing, that he wished to give evidence in person. Dr Lituri expressed in his oral evidence that he felt it was important to appear personally.[28] For reasons detailed below, I was impressed with Dr Lituri as a witness. It was evident that the events of 20 May 2020 deeply affected him, to the point that he self-elected to cease performing cholecystectomy surgery for a period of time and sought further training by observing colleagues perform the surgery. This allowed him a period of professional reflection and an opportunity to observe whether the technique he had previously employed was in any way deficient. I observed a willingness on the part of Dr Lituri, particularly during cross-examination, to accept the error he made during the surgery. I agree with the submission of Mr Darren Evans of counsel assisting:

> 'What Dr Lituri did in this Court would have been difficult. He came along and owned his mistake and the consequences of it. Your Honour will have heard evidence from…surgeons who are less forthcoming than Dr Lituri, who appeared to be, in my respectful submission, doing his best to give an account of what happened.' [29]

Surgery date is brought forward

33 Returning to the narrative, Mrs Salter's surgery at Clare Hospital was initially scheduled for 18 June 2020. On 15 May 2020, Mrs Salter was added to a surgical list for 20 May 2020. Her surgery was brought forward by one month. During the course of the oral evidence there were a number of reasons postulated as to why Mrs Salter's surgery had been brought forward. Evidence was heard that patients added to surgical lists at short

[25] Exhibit C11a, paragraph 10
[26] Exhibit C11a, paragraph 15
[27] Exhibit C11a
[28] Transcript, page 58
[29] Transcript, page 312

notice was not unusual.[30] No definitive reason why this occurred was established, however the only matter of importance that arose from the surgery being brought forward was the rushed nature of the pre-anaesthetic consult process and the availability of blood products. Dr Kuruppu, as the GP anaesthetist, gave detailed evidence on the topic of the pre-anaesthetic consult. He explained that upon learning of Mrs Salter's surgery being scheduled for 20 May 2020, he undertook the pre-anaesthetic consultation on 19 May 2020.

34 As touched on briefly above, Dr Kuruppu is a rural generalist at the Clare Medical Centre. He has been in this role since December 2016. Dr Kuruppu provided an affidavit to the Court and gave oral evidence at the Inquest.[31] Dr Kuruppu's affidavit outlined his medical training, including that he was conferred with his basic medical degree in India in 2006 and relocated to Australia in December 2007 where he continued with his medical career. At the time of Mrs Salter's surgery in May 2020, Dr Kuruppu was a registrar trainee in the Australian College of Rural and Remote Medicine (ACRRM) training program. Between 2010 and 2016, he was a trainee in the Australian and New Zealand College of Anaesthetists training program, but changed programs in 2016.[32] In his affidavit, Dr Kuruppu outlined that he had been in the anaesthetics training program for six years and was confident as the primary anaesthetist for cholecystectomy procedures (laparoscopic or open). He considered himself less experienced in the role of assistant surgeon as his main focus in theatre had been anaesthetics. When approached to be Dr Lituri's assistant surgeon for Mrs Salter's expedited procedure, Dr Kuruppu explained that he felt somewhat hesitant. He stated in his oral evidence that the surgical list on 20 May 2020 was the first time he had scrubbed into surgery in an assistant surgical role in 10 years.[33] However, he agreed to assist as he understood there was a shortage of staff due to the COVID-19 pandemic.[34]

35 Annexed to Dr Kuruppu's affidavit was an email dated 15 May 2020 from Katie Martin, the Clare Medical Centre's executive assistant, to the Clare Medical Centre's roster manager, Ms Kylie Sabeeney.

> 'From: Katie Martin
> Sent: Friday, 15 May 2020 3:34 PM
> To: Kylie Sabeeney
> Cc: Julie Lewcock
> Subject: Changes to Theatre
>
> *Hi Kylie,*
>
> *Lituri has added a list very last minute. I didn't want to bother you with this on your day off. So I think I have it covered, fingers crossed.*
>
> *Wednesday 20th May - Lituri*
>
> *Anaes: JM* [35] *(had the day off anyway - have confirmed with him)*

---

[30] Transcript, page 177
[31] Exhibit C16
[32] Dr Kuruppu has since become a Fellow of the Australian College of Rural and Remote Medicine (FACRRM) in 2021 and received his Diploma of Rural General Anaesthetics (RGA) in 2021
[33] Transcript, page 159
[34] Transcript, page 175
[35] Dr James McLennan

Assist: PSK [36] *(have confirmed with him - doesn't like assist - but has agreed to do)*

I have moved nursing home visits from PSK Thurs am to DC on Monday 18th (as she opened up a session there).

I have let Dyne know she has nursing home Monday and have called Carinya and Kara house to let them know.

Hopefully this is all ok.

Kind regards,

Katie Martin
Executive Assistant' [37]

36 Even though Dr James McLennan was listed as the anaesthetist for the surgery, the pre-anaesthetic consult was booked in with Dr Kuruppu. This appeared to be due to the lack of availability of Dr McLennan at short notice as the surgery had been brought forward:

'From:	Katie Martin
Sent:	Monday, 18 May 2020 7:56 AM
To:	Melissa Lynch
Subject:	Fwd: Final list for Wednesday
Attachments:	Clare Hospital Theatre List 20 May 2020.docx

Hey Mel, would you be able to call Kathleen and get her booked in for PAC tomorrow afternoon, their (sic) should be one left with Prash?

Thank you, then this list should be done.

I can email it out tomorrow.' [38]

37 The pre-anaesthetic consult (PAC) occurred on 19 May 2020 and was conducted at the Clare Medical Centre.[39] Dr Kuruppu identified several risks relevant to Mrs Salter's anaesthetic profile, namely medically treated atrial fibrillation, sleep apnoea, a high BMI and a history of post-operative nausea and vomiting. Perhaps most relevantly for the consultation, it was noted that Mrs Salter had a morphologically small mouth and receding jaw. Dr Kuruppu identified this as creating potential difficulties with intubation. He assessed her overall physiological status as ASA3. Dr Kuruppu explained that this put Mrs Salter at a moderate risk in terms of anaesthesia.[40]

38 Dr Kuruppu told the Court that if there had been more time between his pre-anaesthetic consult and the surgery, he would have discussed Mrs Salter's risk with Dr Lituri. However, he did discuss the matter with Dr McLennan and a plan was formed for Dr Kuruppu to undertake a dual role of support for both anaesthetist and then the surgeon. Dr Kuruppu gave oral evidence that he also discussed the plan with either the nurse manager or the anaesthetic nurse, and it was agreed that the surgery could proceed as planned. Three plans A, B and C were devised for intubation, and Dr Kuruppu

---

[36] Dr Prashan Kuruppu
[37] Exhibit C16, PSK-2
[38] Exhibit C16, PSK-4
[39] Exhibit C5, pages 61-62, page 99
[40] Transcript, page 181

described this in his evidence.[41] Ultimately, plan B and C were not required, and Mrs Salter was intubated successfully on the third attempt of plan A. This was recorded in Mrs Salter's clinical notes at 11:30am on 20 May 2020, by Dr Kuruppu.[42] The expedition of the surgical list therefore played no adverse role in the anaesthetic care or intubation of Mrs Salter. This was well-managed by Dr Kuruppu and appropriate clinical care was provided.

The surgery

39 After intubating Mrs Salter, Dr Kuruppu, who was already scrubbed in, changed roles to assist Dr Lituri. Dr Lituri was the primary surgeon conducting the procedure. Dr Lituri gave detailed evidence on this topic and was extensively cross-examined. He explained that after placing the ports into the abdominal incisions and gaining laparoscopic access to Mrs Salter's abdomen, he commenced by firstly removing adhesions, where he divided some tissue and pushed away other tissue, such as the stomach or colon, to a safe distance. This allowed Dr Lituri to see what he was doing, as well as not to inadvertently damage adjacent tissues and organs.[43] Once he was able to clear the adhesions, he found that the gallbladder was intrahepatic, or stuck within the bottom part of the liver, and was inflamed. While Dr Lituri recalled exclaiming '*oh that gallbladder doesn't look happy*' out loud in the operating theatre, he explained that he did not consider the inflammation sufficient reason to discontinue the procedure at that point. He had seen worse gallbladders in previous operations and thought it necessary to continue dissecting to decide if performing the cholecystectomy would be '*doable*'.[44]

40 Dr Lituri proceeded to expose the gallbladder by using a grasper to hold the fundus and lift the liver up to expose the gallbladder and structures beneath. Another instrument was then passed in to grasp Hartmann's pouch and retract it laterally to achieve an angle that provided the best view. Dr Lituri recalled that he then turned his mind to obtaining the critical view of safety, which as touched on above is the view to identify only two structures connecting to the gallbladder, being the cystic duct and cystic artery. He admitted it was difficult to release the gallbladder from the liver in Mrs Salter's case as her gallbladder was contracted and swollen.

41 Having released what he estimated to be less than one third of the gallbladder from the liver, Dr Lituri considered he had obtained the critical view of safety and had ensured there was a space behind the second structure to indicate he was clear of the liver. He was unable to recall whether he had, at the time, asked Dr Kuruppu to double-check whether the correct structures had been identified. Dr Kuruppu was not able to remember whether he was asked either.[45] Dr Lituri placed a clip on the structure he believed to be the cystic duct close to the gallbladder, and two clips lower down. He repeated the same process for the structure he believed to be the cystic artery. Dr Lituri gave the following evidence:

> 'So they - those structures to me appeared to be coming from or to the gallbladder and so then I identified what I thought was the cystic duct and placed a clip close to the

[41] Transcript, page 182
[42] Exhibit C6, page 17
[43] Transcript, page 126
[44] Transcript, page 127
[45] Transcript, page 243

gallbladder itself and then two clips lower down, and the same with what I thought was the cystic artery, a clip close to the gallbladder, two further down on the side that would stay with the patient. Then I divided between those two with laparoscopic sharp scissors.' [46]

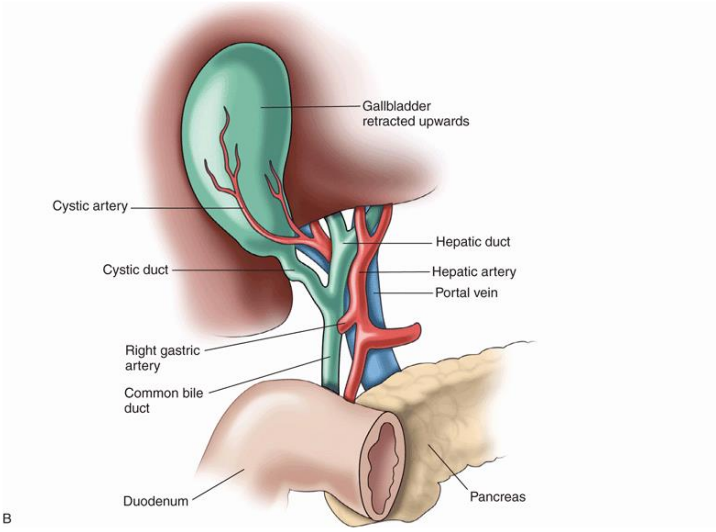
42 In his evidence, Dr Lituri acknowledged that the two structures were, in fact, likely the common bile duct and the right hepatic artery and that he had become '*misoriented*' in his identification of the critical view of safety.[47] I will return to this topic when dealing with the expert evidence of Professor Padbury.

43 The next step of the procedure involved the separation of the gallbladder from the liver. Dr Lituri explained this process was difficult and time-consuming due to the intrahepatic nature of the gallbladder. As was commonplace, there were minor spots of bleeding along the way which were addressed with diathermy.[48] At a point during this process Dr Lituri noticed a site of active bleeding adjacent to the area where he was undertaking diathermy. He explained that he must have caused an injury at some stage while pulling on tissue to dissect the gallbladder from the liver.[49] Diathermy was not effective with this site of bleeding, so Dr Lituri initially attempted to address the bleeding by pressing the gallbladder against the area, but this was unsuccessful. He then passed a swab through one of the laparoscopic ports to put pressure on it, which seemed to control the bleeding. The anaesthetic record corroborated this evidence and reflected a drop in Mrs Salter's blood pressure from 110 systolic to 70 at approximately 12:30pm with a steady increase until approximately 1:10pm.[50] With the bleeding seemingly controlled by the swab, Dr Lituri continued the operation. He was able to eventually release the gallbladder from the liver, after which the gallbladder was placed into a plastic bag called an Endo Catch[51] and removed from the abdomen. It was then placed in formalin and taken for examination by SA Pathology. The SA Pathology form recorded a time of 1:15pm for when the gallbladder was '*received*'[52], meaning the time it was removed from Mrs Salter's abdomen and submitted for histological analysis.

44 Dr Lituri explained that even accepting (as he did in evidence) that he had likely clipped the wrong structures to remove the gallbladder, being the common bile duct and the right hepatic artery, he was still able to remove the gallbladder as the cystic duct is the most proximal or closest to the gallbladder, and it comes from the common bile duct. Therefore, in having divided the common bile duct, he had divided the cystic duct at the same time. The diagram below[53] illustrates that the cystic duct is an extension (so to speak) of the common bile duct.

---

[46] Transcript, page 128
[47] Transcript, page 150
[48] Diathermy is a medical technique that uses high-frequency electromagnetic currents or ultrasound to generate localised heat within tissues, used for various purposes, including surgical procedures to coagulate blood
[49] Transcript, page 129
[50] Exhibit C6, page 50
[51] A single use specimen pouch used during laparoscopic procedures to remove a specimen from the abdominal cavity
[52] Exhibit C6a, page 93
[53] Redrawn from Schwartz et al. Principles of Surgery. 6th ed. New York, NY: McGraw-Hill, 1994:1368



45 Once the gallbladder was removed from Mrs Salter's abdomen, Dr Lituri turned his attention to checking whether haemostasis was achieved and whether there was any bile leaking that required washing. Looking through the camera, Dr Lituri described growing concern when he noticed the swab he had placed earlier was now liquid, soaked with blood, and underneath was continuing to actively bleed.[54] Upon removing the swab, an alarming amount of blood flowed. Dr Lituri immediately took more swabs from the scrub nurse to put pressure on the area to control the bleeding. This allowed him time to consider what vessel or vessels were bleeding. Dr Lituri was unable to identify what structure was bleeding, only the area where the blood was pooling. The blood was also impeding Dr Lituri's ability to visualise with the laparoscopic camera.

46 It was at this point that Dr Lituri recalled the anaesthetic and theatre staff informing him Mrs Salter had lost a considerable volume of blood. While he could visualise an active bleed, the notification that Mrs Salter's haemodynamic status was beginning to deteriorate informed him that she had lost more blood than he realised.[55] Dr Lituri's evidence relating to the timing of this event was corroborated by Dr Kuruppu's account, as well as the anaesthetic record.[56]

47 Dr McLennan made the decision around this time to contact another GP anaesthetist, Dr Lisa Beament, requesting her urgent assistance in surgery. Dr Beament made a detailed retrospective entry[57] in Mrs Salter's clinical records and provided an affidavit[58] to the Court. She was not summonsed to give oral evidence. Dr Beament deposed to receiving the urgent phone call while consulting at the Clare Medical Centre and arrived in theatre shortly before 2pm. She received a quick handover and observed that Mrs Salter's blood pressure was quite low. She was also tachycardic. In Dr Beament's retrospective note, she contacted the MedSTAR retrieval team at approximately 2pm. Dr Beament stated in her affidavit that it was clear to her upon arrival in theatre that Mrs Salter would require transfer to Adelaide.[59] Dr Beament assisted in administering

---

[54] Transcript, page 131
[55] Transcript, page 132
[56] Transcript, page 197; Exhibit C6, page 50
[57] Exhibit C6, pages 25-26
[58] Exhibit C15
[59] Exhibit C15, paragraph 14

blood pressure supporting medications and crystalloid fluid to provide electrolyte and glucose in an attempt to resuscitate Mrs Salter.[60] She then assisted with the transfusion of blood which is detailed below.

48 Shortly before Dr Beament's arrival in theatre, Dr Lituri made the decision to convert to a laparotomy (an open procedure) in an attempt to have better access to the bleeding. He estimated there was a time span of 5 to 10 minutes between having become concerned about the bleeding, to converting to an open procedure. If performed quickly, the laparotomy itself could be done within a 5-to-6-minute period. Once Mrs Salter's laparotomy had been performed, Dr Lituri worked on clearing the blood and clot and directly putting pressure on the area. It was around this time, although Dr Lituri could understandably not be precise, that the anaesthetic staff informed him that a transfusion was indicated. Following that conversation, Dr Lituri was also notified that the blood available was not within date. A decision was made to transfuse the blood due to the '*critical situation*' as noted in the retrospective entry by Registered Nurse Knappstein:

> 'Retrospective note for 20.5.2020
>
> 1525 Overheard discussion re need to transfuse blood – 2 units on site; both outdated at midnight on 19/5/2020. Staff involved in agreeance that in this critical situation, this blood could be potentially life-saving. Both units given as charted.' [61]

49 As recorded on the Blood Bank Fridge Register, Mrs Salter received two lots of red cell products at 2:09pm and 2:35pm.[62] The blood was recorded as having expired at 11:59pm the day before. As touched on above this was a life-saving measure as, just prior to the second infusion, Mrs Salter's haemoglobin levels were measured at point of care testing to be 61 grams per Litre (g/L). This was compared to her haemoglobin result in a haematology test undertaken on 20 February 2020, which was a normal level of 143g/L.[63] It was apparent from this result that Mrs Salter had lost a critical amount of blood. Following the second infusion, and around the time MedSTAR arrived, the clinical records reflected that Mrs Salter's haemoglobin level had risen to a more stable level of 95g/L.[64] A Safety Learning System (SLS) Report was appropriately lodged in respect of the out-of-date blood[65], raising the issue for the attention of SA Health management.

50 Dr Lituri explained that identifying the source of the bleed was difficult due to the amount of blood and clot in the area, and that it took about 10 to 15 minutes to identify the source and then secure it with a figure of eight suture. To ensure he had achieved haemostasis, he described placing fresh packs against the area, leaving them for a couple of minutes, then removing them to check if there was any blood on the packs or from the site. Once Dr Lituri was satisfied that he had secured the bleeding, and the anaesthetist having confirmed Mrs Salter had stabilised, he closed the layers of Mrs Salter's abdomen.[66] Dr Lituri gave evidence that while he had identified the source

---

[60] Exhibit C15, paragraphs 11-13
[61] Exhibit C6, page 23
[62] Exhibit C6, pages 15, 63
[63] Exhibit C5, pages 77-78
[64] Exhibit C6, page 88
[65] Exhibit C8a
[66] Transcript, pages 133-134

of bleeding in order to suture it, he was not aware at that time that he had divided the right hepatic artery and the common bile duct or damaged the portal vein. Dr Lituri's operation record supported this evidence as it made reference to a non-specific injury: '*inadvertent injury to* ***vein in GB Fossa***'.[67]

51 Dr Lituri described feeling '*frazzled*' while trying to locate and contain the bleeding. He gave the following evidence:

> 'Bleeding that is uncontrollable is a very stressful thing to happen and it's one of those things that you just hope never happens in an operation because it's real time, you have to get control of it there and then. You can't wait and it's often there is blood in the field, it's difficult to see anything. Everything is happening very quickly and it's not something that you particularly are expecting in an elective procedure.' [68]

Notwithstanding Dr Lituri's internal stress, those in the operating theatre (in particular Dr Kuruppu) were complimentary of his calm demeanour and ability to navigate and suture the source of bleeding. Dr Kuruppu agreed that Dr Lituri remained calm and composed, and it was evident to him that Dr Lituri's priority was to maintain control of the bleeding.[69] It is likely that Dr Lituri's experience in trauma surgery assisted him in remaining calm and composed.

52 Following the procedure, and once Mrs Salter's abdomen was closed, a routine instrument and pack count was conducted by the scrub nurse and it became apparent that there were four gauze swabs (Raytec) unaccounted for. An abdominal x-ray was undertaken at the Clare Hospital which identified the four unaccounted gauze in Mrs Salter's upper abdomen.[70] Dr Lituri made the well-documented decision to leave the packs in situ knowing that Mrs Salter would undergo further surgery at the RAH and they could be retrieved at that time. He also considered Mrs Salter too unstable to undergo another surgery at Clare Hospital.[71] While this did not impact on Mrs Salter's condition in anyway, an SLS report was appropriately filed.[72] Mrs Salter's family were also notified. Professor Padbury gave evidence that it was appropriate for Dr Lituri not to attempt to retrieve the Raytec at Clare Hospital.[73]

---

[67] Emphasis added
[68] Transcript, page 73
[69] Transcript, page 223; Exhibit C16
[70] Exhibit C6a, page 90
[71] Exhibit C11a, paragraph 46; Exhibit C6, page 23; Exhibit C8b, Tool Documentation and Discussion Summary, page 2
[72] Exhibit C8b
[73] Transcript, page 283

53 Dr Lituri's operation record was found in Mrs Salter's clinical notes and was transcribed for the purposes of the Inquest. He wrote:

> 'OPERATION RECORD:
>
> PRE-OPERATIVE DIAGNOSIS: Biliary Colic
> OPERATION DATE: 20/5/2020 TIME COMMENCED: 11:10 TIME COMPLETED: 14:45
> SURGEON: Lituri ASSISTANT: [Kurrupu] ANAESTHETIST: McLennan
> POST-OPERATIVE DIAGNOSIS: Acute cholecystitis •
> PROCEDURE PERFORMED: Laparoscopic ➔ Open Cholecystectomy
>
> DETAILS OF OPERATION: TTO ✓ MBS ITEM NO:
> Patient entered OT with informed consent Checklist ✓ 30445
> Positioned Supine - GA given ➔ IV Cephazolin SCCs
> Area prepared with Betadine and draped
> Open cutdown using Hassan technique ➔ pneumoperitoneum
> Working ports under vision
> Acutely inflamed GB [gallbladder] - dense adhesions requiring extensive adhesiolysis
> Dissection at Hartmann's pouch until critical view of safety achieved. Cystic duct+ artery divided between clips 2:1
> Difficult dissection of GB from liver using cautery
> ***Inadvertent injury to vein in GB Fossa causing bleeding requiring conversion to open incision to oversew with 2.0 vicryl ➔ 10 Blakes drain***
> Initial count correct but later 4 swabs missing + located with x-ray in RUQ [right upper quadrant]
> 1 prolene mass closure of Kochers incision + umbilical fascia
> 3.0 monocryl to skin Postop visible
>
> SPECIMEN SENT TO PATHOLOGY: ☑ Yes
>
> POST-OPERATIVE ORDERS:
>
> Transfer intubated and ventilated to RAH ICU
> Continue IV ceftriaxone and metronidazole
> Drain on suction
> Will need 4 gauze swabs removed at a later date
> SIGNATURE OF SURGEON: D Lituri' [74]

54 The MedSTAR retrieval observation chart recorded the first set of observations on arrival at 4pm.[75] Although there was a slight delay in the arrival of MedSTAR due to inclement weather, Mrs Salter was retrieved to the RAH without incident, by road rather than helicopter as was originally intended. I do not consider this brief delay to be material in any way to Mrs Salter's death.

Royal Adelaide Hospital

55 Once at the RAH, Mrs Salter was briefly assessed in the ICU and then taken to theatre for a further laparotomy, conducted by surgeon, Dr Chuan Ping Tan. Dr Tan provided an affidavit to the Court and gave oral evidence. The retrospective entry in the RAH electronic records reflected that Mrs Salter's arrival was '*expected from Clare with*

---

[74] Exhibit C6, page 56; Exhibit C11b, transcribed Operation Note dated 20 May 2020, emphasis added
[75] Exhibit C4, pages 327-328

hepatic vein bleeder during elective cholecystectomy – intubated and HD unstable'.[76] The operation note completed by Dr Tan at 00:13am on 21 May 2020, stated the following:

> '**Operation Description**
> R hemihepatectomy and L hepaticojejunostomy
>
> Summary of injuries:
>
> 1) **transected CBD with separation of the R and L hepatic ducts**
> 2) **Divided R portal vein**
> 3) **divided R hepatic artery**
>
> Procedure:
> Through a roof top incision the abdomen was entered. The R liver looked ischemic. L liver was normal. There was also bile seen in the hilum of the liver. The following injuries were seen and a cholangiogram was performed through a stump of bile duct that was ligaclipped and that showed distal CBD only with no proximal ducts.
> Decision was made to explore the hilum and the **L hepatic duct was seen to be separated from the R hepatic duct**. a the R liver was ischemic decision was made to perform a R hemihepalectomy. The R liver was mobilised and the short hepatics were either tied or liga clipped before it was divided. Once the R liver had demarcated the liver parenchyma division was performed with a crush clap technique and the intraparenchymal branches were taken with ligaclips or ties.
> The R hepatic vein was then stapled and the R liver was sent off to pathology.
> A vascularise pedicle of proximal jejunum was prepared and then the distal end of the jejunum was brought up in an antecolic position was anastomosed to the L hepatic duct with 5/0 PDS. The anastomoses were stented. Then an enteroenterostomy was performed with 3/0 Maxon in a double layer. The biliary anastomosis was checked and there was no bile leak seen . The cut edge of the liver was treated with some Tisseal. One drain was left behind the biliary anastomosis and the wound was closed in layers.' [77]

56 It was the findings at the operation conducted by Dr Tan, namely the transected common bile duct with separation of the right and left hepatic ducts, the divided right portal vein and divided right hepatic artery, that alarmed Professor Padbury when he prepared his expert report. This was for two reasons. Firstly, these injuries did not appear in the original operation record of Dr Lituri, with Professor Padbury describing this as a significant discrepancy. Secondly, he observed the injuries repaired by Dr Tan as at the upper end of the spectrum of injury one could ever see secondary to undertaking a cholecystectomy.[78]

57 As touched on above, Dr Lituri was aware that he had caused an injury and that he had successfully stopped the bleeding. Beyond that he was not aware of the specific injuries caused, accepting in his evidence that he had become misoriented when attempting to identify the critical view of safety.

---

[76] Exhibit C4, page 459
[77] Exhibit C4, page 462
[78] Exhibit C14, page 2

Professor Padbury

58 Professor Padbury was physically present in Court during Dr Lituri's oral testimony. He then gave evidence in the Coroners Court. Two presentations were provided by Professor Padbury, with slides and two videos. Professor Padbury described his assessment of the complexity of Mrs Salter's surgery as '*much worse*' than the two examples of a cholecystectomy shown in the videos.[79] That was due to the condition discovered after Mrs Salter's gallbladder was sent for histopathological testing, as described earlier in the Finding. The microscopic findings were:

> 'The representative sections of the gallbladder show denuded mucosa, fibrotic thickened gallbladder wall and florid chronic inflammation with multi-nucleated foreign body giant cells containing numerous cholesterol clefts in the gallbladder wall. There is no dysplasia or malignancy. The included liver parenchyma is unremarkable'.[80]

59 Professor Padbury described the significance of the multi-nucleated foreign body giant cells. It indicated a more severe degree of chronic inflammation. Instead of the condition being chronic cholecystitis, it was xanthomatous or xanthogranulomatous cholecystitis. The surgical implication of xanthogranulomatous cholecystitis is that the inflammation also involves surrounding tissue. He explained that it is not just the inflammation of the gallbladder, the surrounding tissues become inflamed, and things get stuck together which makes surgery very difficult. This is because it is very difficult to find tissue planes and very difficult to separate one structure from another safely.[81] Perhaps most relevantly for the surgery undertaken on Mrs Salter, xanthomatous or xanthogranulomatous cholecystitis is not typically recognised preoperatively and the giant cells can only be diagnosed histopathologically.[82] It also sees a high conversion rate to a laparotomy. The imagery undertaken on Mrs Salter prior to her surgical procedure gave no indication of this condition.

60 In order to visualise how this condition might impact a surgical procedure, Professor Padbury explained the following:

> '..[t]he gallbladder sits adjacent to the liver and there is some tissue between the gallbladder and the bile duct. This tissue needs to be dissected safely to separate the gallbladder away from those surrounding structures. With this sort of inflammation that is a very difficult task.' [83]

61 Professor Padbury continued:

> 'So this is just the summary - which I've already spoken about - of xanthogranulomatous cholecystitis. I've summarised in simple terms the papers and other - the papers that I've submitted and some other information - but it is relatively rare. Probably .5% or something like that of all inflammations, so it is pretty rare, and it's a spectrum from xanthomatous to xanthogranulomatous. I suspect this one was somewhere in the middle, between simple and the most complex. I say that because there were no findings on imaging to suggest that the situation was going to be as was found. So it was entirely

[79] Transcript, page 261
[80] Exhibit C6a, page 93
[81] Transcript, page 254
[82] Transcript, page 255
[83] Transcript, pages 254-255

unexpected and that is completely reasonable from the imaging report. I haven't seen the images myself but from the imaging report. So it's a gallbladder, I think it was described as being 5mm. That's not unusual and that wouldn't necessarily raise your index of suspicion to think that you were going to find something terrible. So the giant cell seen on pathology with the florid chronic inflammatory reaction is the key to understanding the case. It's a more severe inflammatory reaction involving the surrounding structures, usually not recognised preoperatively, and it is very difficult to dissect and separate tissue planes. I've mentioned the high conversion rate to open cholecystectomy, a higher rate of alternative strategies such as partial cholecystectomy and a recorded significantly higher complication rates of bile duct damage.' [84]

62 From Professor Padbury's evidence, it was clear that the inflammation found in Mrs Salter's gallbladder was rare and some surgeons may never encounter it in their professional lifetime. Professor Padbury had removed gallbladders affected by this condition, recalling a recent surgery that he initially thought was a high-risk cancer. It was only after resection and histological sampling that xanthogranulomatous cholecystitis was revealed.

63 During the course of his evidence, Professor Padbury provided three articles detailing this condition, to which he referred in the above passage of evidence. These articles outlined that it was a particularly rare and destructive variant of cholecystitis marked by unique inflammatory changes evident in pathologic specimens.[85] Both articles concluded that the condition had a non-specific presentation making it difficult to recognise preoperatively with it not being detected on ultrasound, CT or MRI in the subject patients.[86]

64 Professor Padbury opined that Dr Lituri was misled by the inflammation, believing that he was dissecting the critical view of safety, whereas in fact he was on the left-hand side of the bile duct. The inflammation created a visual appearance that Dr Lituri was in the right-hand spot when he was not.[87] In cross-examination, Professor Padbury also agreed another reasonable possibility was that Dr Lituri could have made a decision about a structure being something that it was not due to the inflammation clouding the ability to clearly identify it.[88] Both possibilities really amounted to the same situation; that Dr Lituri clipped and transected the wrong structures.

65 Based on the evidence of Professor Padbury, the anatomical structures would have been difficult to distinguish due to the inflammation. As a result, Dr Lituri was conducting the procedure in an area of the anatomical structures that he did not appear to appreciate at the time. Meaning, that he was dividing the common bile duct when he intended to divide, and thought he was dividing, the cystic duct. The cystic duct and common bile duct are areas of the same vessel, the cystic duct branching away from the common bile duct. Given the structures that were divided, I find that there was an error of misorientation due to the florid inflammation.

---

[84] Transcript, pages 268-269
[85] A Contemporary analysis of xanthogranulomatous cholecystitis in a Western cohort, 2021, Azari et al, Turkish Journal of Surgery; The management of xanthogranulomatous cholecycstitis,2024, Simsek et al, Turkish Journal of Surgery
[86] Xanthogranulomatous cholecystitis: experience in 100 cases, 2020, Feng et al, ATM Annals of Translational Medicine
[87] Transcript, page 270
[88] Transcript, page 297

66 Given the misorientation, Dr Lituri also divided the hepatic artery rather than the branch of it which provided blood supply to the gallbladder; the cystic artery. The consequence of this was to compromise the liver of its primary source of blood. Professor Padbury gave evidence that a secondary supply of blood would have taken over, but would not have been sufficient for the liver to survive in the longer term.[89] The consequence was that by the time Mrs Salter was operated on again at the RAH, a portion of her liver was noticeably ischaemic and had to be resected.

67 In the process of completing what was clearly a stressful surgery, confounded by the unexpected level of inflammation which prolonged the task and increased the difficulty in identifying structures, Dr Lituri made a second error. This was to inadvertently open the portal vein, a large vessel that pumps a large amount of blood at high pressure. Based on Dr Lituri's description of the difficulties encountered with inflammation and separating the gallbladder free of the liver, the entries in the anaesthetic record (*attempt at bleeder*[90]) and the drop in Mrs Salter's blood pressure at approximately 12:30pm, it is probable that this injury occurred while he was attempting to free the gallbladder from the liver. This was when he noticed a bleed that diathermy could not remedy and placed a swab on it. Although the portal vein pumps 1.5 litres of blood per minute, the wound to the portal vein is likely to have received pressure from the gallbladder, providing a tamponade effect which prevented blood escaping. Once the gallbladder was removed, the damage to the portal vein was no longer being contained and Mrs Salter suffered an extensive bleed, quickly becoming haemodynamically unstable.

68 Dr Lituri converted to an open procedure, identified the area of the bleed and went about correcting it. He managed to find the source and suture it, in tremendously difficult circumstances. Professor Padbury gave evidence about the extreme difficulty of the task of suturing an active bleed on a vessel exerting so much pressure.

69 Professor Padbury opined that if a cholangiogram had been available, performed and correctly interpreted, it would have provided an opportunity to stop and re-orientate before the two sets of injuries occurred. Although a hole would still have been put in the common bile duct (as that is how the cholangiogram is performed) it would not have been completely divided.[91] Professor Padbury emphasised the importance of a cholangiogram, stating that he performed one in 100% of these surgeries. He commented that:

> 'I'd perform a cholangiogram in 100% of cases. Now that's not a universal view by all surgeons but certainly that is the view of a significant body of people in Australia. It's not necessarily international but certainly in Australia it is. I think that there are arguments as to whether a cholangiogram needs to be done in every situation, but I think that we have passed the time where cholecystectomy should be done in an organisation that does not have the capability to do a cholangiogram, to have a cholangiogram performed.' [92]

[89] Transcript, page 275
[90] Exhibit C6, page 50
[91] Transcript, page 278
[92] Transcript, page 278

Injury during surgery

70 Professor Padbury was asked how common injuries were in cholecystectomy surgery. He stated that often mistakes are made, but few have catastrophic consequences. Professor Padbury described the most common mistake to be putting a hole in the gallbladder and spilling gallstones as not uncommon, but undesirable to say the least.[93] At the other end of the spectrum is damage caused to the common bile duct or common hepatic duct. Beyond that he described the '*next level of transections*' to be vascular injury and the vasculobiliary injuries as seen in Mrs Salter's surgery. This was not common, but he considered that it might happen more often than has been reported given it can often be repaired. The Court heard that the portal vein is responsible for pumping blood at the extraordinary rate of a 1 to 1.5 litres a minute. With this understanding it was not difficult to see why Mrs Salter became haemodynamically unstable very quickly following the injury to her portal vein.

71 Professor Padbury was asked whether an anatomical variation or an inflammatory profile (such as xanthogranulomatous) may contribute to an injury to the portal vein in a cholecystectomy. He explained that it was more likely with the particular inflammation profile suffered by Mrs Salter. He did emphasise that it was still very uncommon and he had only attended on two injuries to a portal vein in his career.

Bail out

72 Anecdotally, Professor Padbury gave evidence about the risk of surgery in rural areas. He described (in general terms) the advanced disease profiles of those who live in the country, as they are typically less likely to see a doctor regularly due to distance. Furthermore, there is understanding that these patients will put up with more for longer than their metropolitan counterparts. Those living in rural areas have a slightly higher body mass index (BMI) as well.[94] This is compounded by the isolation of a rural surgical setting without immediate help in emergencies. Professor Padbury stated that this risk matrix made interoperative decision-making critical.[95]

73 The red flags for not proceeding with a surgery in a rural area were listed by Professor Padbury as significantly advanced disease on imaging, BMI of greater than 40, a significant medical comorbidity and a previous significant upper abdominal surgery. Mrs Salter did not meet any of these categories.[96] Her intentions were also clearly documented in the lead-up to the surgery that she was fearful of the COVID-19 pandemic and preferred to have her surgery in Clare.[97] I find that it was not inappropriate for Mrs Salter to have been booked for surgery at the Clare Hospital.

74 The issue was not where the surgery should have taken place, but whether or not Dr Lituri should have stopped the surgery and, if so, at what point. Professor Padbury described bail out procedures including partial cholecystectomy and cholecystostomy. However, as events transpired, these bail out options were not considered by Dr Lituri,

---

[93] Transcript, page 276
[94] Transcript, page 278
[95] Transcript, page 281
[96] Transcript, page 281
[97] Exhibit C5a

as the injuries to Mrs Salter were only appreciated after the removal of the gallbladder, which was achieved laparoscopically.

75 With that said, there was another bail out option open to Dr Lituri and that was to have stopped the laparoscopic procedure and rebooked the surgery for another day at a tertiary hospital. The first opportunity to consider this was when Dr Lituri discovered Mrs Salter's gallbladder to be inflamed. This was when he exclaimed '*oh that gallbladder doesn't look happy*'. He gave evidence that at the time he made the decision to continue with the procedure, with a '*wait and see approach*'. The other opportunity was when he found it difficult to dissect the gallbladder from the liver, as it was intrahepatic. The inflammation causing the intrahepatic gallbladder also led Dr Lituri to believe he had visualised the critical view of safety, when in fact he had not.

76 Dr Lituri was asked by his counsel, Mr Andrew Harris KC, whether, upon reflection, he should have considered stopping the procedure. Dr Lituri explained that he should have made the decision to rebook Mrs Salter's surgery when he observed an inflamed gallbladder at the beginning. He said:

> 'On reflection, recognising where I was, in Clare Hospital, two hours from Adelaide, no other surgeons around, that when the gallbladder was not as the previous gallbladder had been, very similar to that video that we saw, quite straightforward, given her age and comorbidities, it would have been more appropriate to think: no, I need to abandon this procedure before I even start, and then tell Mrs Salter later, "I'm sorry, this was not a place where I think we should be doing this now, having seen what your gallbladder was like", and referred her to the metropolitan area.' [98]

I agree that the finding of an unexpectedly inflamed gallbladder was the primary opportunity to have abandoned the procedure and rebooked for another time and place. The other potential occasion to reconsider proceeding further was when Dr Lituri encountered difficulties dissecting the intrahepatic gallbladder from the liver. While this was not specifically put to Dr Lituri in cross-examination, it goes without saying that further difficulties encountered for the same reason (inflammation) should have brought about the same consideration. Had Dr Lituri stopped at that point, it is likely the injury to the portal vein would not have been caused, although the injuries to the common bile duct and right hepatic artery had already been sustained. These injuries were contributory to Mrs Salter's death. Therefore, I do not consider this to have been a genuine opportunity, in the circumstances, to prevent Mrs Salter's death.

77 Professor Padbury spoke of the pressure, particularly felt by general surgeons, to continue with a surgery that may not be what was expected. He explained:

> I think there's a lot of pressure on people to not [bail out]. So if I take my own situation as a subspecialist in a very small area, that it's a lot easier for me to make the decision to stop and bail out because its less likely that I'll be criticised by others. I think its difficult for general surgeons because there's always – and this is part of the culture within surgery – there is a risk and they would feel the pressure that they would be criticised by people that they refer the case to or if they don't feel that they want to do it themselves in a more

[98] Transcript, page 93

supportive environment. Yeah, I think that's hard and difficult to do and we don't have a great culture around it.' [99]

78 While Dr Lituri did not give evidence that he felt pressure to continue with Mrs Salter's surgery at any time, it is certainly appreciable that there is pressure at play when a room full of health professionals are booked to do a task and there are other patients waiting on a list. Surgeons are highly skilled specialist doctors and are expected to perform at a certain level creating its own inherent pressure for the smooth running of procedure lists. Certainly, if Dr Lituri had decided not to proceed with Mrs Salter's surgery when he observed the gallbladder to be unexpectedly inflamed, the outcome would have been very different. Dr Lituri candidly reflected on that missed opportunity, both in his surgical practice and when giving oral evidence.

79 Professor Padbury opined that once Mrs Salter's haemodynamic status began to decline, the rescue efforts by both the GP anaesthetists were outstanding, particularly in light of an estimated blood loss of 2.5 litres. He described it as a '*really magnificent effort*'.[100] He was not in the least bit critical of transfusing the out-of-date blood, stating the decision to use it was lifesaving. He postulated what he described as the '*extraordinarily interesting*' alternative scenario to withhold the out-of-date blood while the patient exsanguinated on the operating table.[101] Of course, that did not happen and the appropriate course of action was taken.

External reviews

80 It is important to acknowledge that three separate reviews were conducted following Mrs Salter's death, looking into various aspects of the anaesthetic and surgical care Mrs Salter received on 20 May 2020. This was in addition to the SLS reports lodged.

81 They included a clinical case review by the Yorke and Northern Local Health Network (YNLHN) on 21 May 2020, relating to the sedation and anaesthetic capabilities of Clare Hospital.[102] The review recommended a re-evaluation of elective surgery procedures at country sites and was subsequently endorsed by Dr Viney Joshi, the Executive Director of YNLHN.

82 Dr Joshi also commissioned an independent review from Dr Robert Franz (a senior surgeon from Queensland). Dr Franz recommended consideration of whether the adhesions could have been predicted prior to the surgery. The rarity of Mrs Salter's condition and the inability to detect the particular inflammation prior to surgery was uncovered during the Inquest. I am satisfied that this issue has been explored and answered.

83 Another independent surgical review was conducted by Associate Professor Ivan Rapchuk.[103] Associate Professor Rapchuk was critical of the timing of the pre-anaesthetic consult suggesting that it should have been conducted earlier to allow for comprehensive consideration of potential issues arising during surgery. While

[99] Transcript, page 282
[100] Transcript, page 283
[101] Transcript, page 284
[102] Exhibit C8b
[103] Exhibit C8bi

expediting the surgery created anxiety amongst theatre staff and resulted in issues regarding availability of blood, this did not impact on Mrs Salter's death.

84 I have taken into account the opinions expressed in each review as well as the recommendations.

Preventability

85 I am of the view that Mrs Salter's death was a preventable one.

86 There were two primary opportunities to have prevented Mrs Salter's death. The first opportunity was at the point Dr Lituri identified Mrs Salter's gallbladder to be unexpectedly inflamed. This was the point at which Dr Lituri should have (and duly acknowledged) rebooked Mrs Salter's surgery at a tertiary hospital. Had he done so, the injuries to the common bile duct, the hepatic artery and the portal vein would not have occurred.

87 The second opportunity related to the unavailability of a CT cholangiogram at Clare Hospital. I accept Dr Lituri's evidence that, had one been available, he would have used it intraoperatively. I further accept the evidence of Professor Padbury that this would have illuminated the anatomical area in which Dr Lituri was and should not have been, providing him an opportunity to correct himself. I also repeat the evidence of Professor Padbury that he uses a cholangiogram in 100% of cholecystectomies. In the identification of the correct structures intraoperatively, it is simply too important not to have available during a cholecystectomy.

Conclusions

88 The findings I have made are set out in accordance with the issues above. I have come to these conclusions on the basis that I am comfortably satisfied each of them were established on the evidence.

1. Kathleen Ethel Salter died on 4 June 2020 at the Royal Adelaide Hospital. She was 76 years old.

2. The cause of Mrs Salter's death was multi-organ failure and sepsis due to complications of cholecystectomy.

3. The cholecystectomy was performed on 20 May 2020 by Dr Darren Lituri, general surgeon, at the Clare Hospital.

4. The surgery was indicated due to symptoms of cholecystitis.

5. While the surgery was brought forward and the pre-anaesthetic consult by Dr Kuruppu was rushed, being undertaken the day before surgery, it had no impact on the adverse outcome either on the day of surgery or in relation to Mrs Salter's death.

6. Dr Kuruppu identified certain risk factors in placing Mrs Salter under general anaesthetic. He appropriately mitigated against those risks by asking for a second GP anaesthetist to be present at the procedure.

7. Notwithstanding the risk identified by Dr Kuruppu, Mrs Salter's surgery was appropriately scheduled at the Clare Hospital on 20 May 2020. The standard pre-surgical tests and imagery were undertaken and did not (and could not) identify the inflammatory condition that Mrs Salter was suffering from.

8. On the day of the procedure, Mrs Salter was the second on Dr Lituri's surgical list. The first patient's cholecystectomy procedure proceeded uneventfully.

9. Mrs Salter was successfully intubated by Dr Kuruppu at approximately 11:30am.

10. Upon gaining laparoscopic access to her abdomen, Dr Lituri observed that Mrs Salter's gallbladder was unexpectedly inflamed. It was at this point Dr Lituri should have abandoned the procedure and rescheduled for another time and at a metropolitan hospital.

11. Dr Lituri continued the procedure and attempted to identify the critical view of safety. He thought he had identified the correct structures being the cystic duct and the cystic artery and clipped them. He then divided between the two structures with his laparoscopic sharp scissors.

12. Due to the level of inflammation, Dr Lituri had in fact become misoriented and clipped the wrong structures, being the common bile duct and the hepatic artery. He was not aware of his error at this time.

13. Had Dr Lituri had access to a CT cholangiogram, he would have utilised this tool to assist him to identify the critical view of safety.

14. Had he done so, his identification of the correct structures and his realisation that he had become misorientated would have been markedly improved.

15. Clare Hospital did not have a CT cholangiogram.

16. Dr Lituri continued to separate the gallbladder from the liver. Mrs Salter's gallbladder was embedded into the liver (intrahepatic) making this task difficult and time consuming.

17. During this process and at approximately 12:30pm, Dr Lituri identified a site of bleeding that could not be addressed with diathermy. Mrs Salter's blood pressure began to drop. Dr Lituri attempted to address the bleed by pressing the gallbladder against the area. This was not effective. He then passed a swab through one of the laparoscopic ports and placed pressure on the site. This appeared to contain the bleed as Mrs Salter's blood pressure rose.

18. At approximately 1:15pm, Dr Lituri released Mrs Salter's gallbladder from the liver and sent it off to be pathologically examined.

19. After the removal of the gallbladder, the site where Dr Lituri had placed the swab was actively bleeding. This saw Mrs Salter become haemodynamically unstable. This was due to an injury in the portal vein that had, on balance, been inflicted during Dr Lituri's attempts to separate the gallbladder from the liver.

20. At approximately 1:30pm, Dr Lituri converted the procedure to a laparotomy in order to better visualise the area. This was undertaken quickly and was an appropriate course of action.

21. Dr McLennan contacted another GP anaesthetist, Dr Beament, to attend surgery urgently and assist with Mrs Salter's deteriorating condition. This was appropriate.

22. Dr Beament arrived in theatre shortly after the laparotomy had been performed and administered blood pressure supporting medications, crystalloid fluids, electrolytes and glucose. This was all appropriate and lifesaving.

23. Dr Beament contacted MedSTAR at approximately 2pm. This was appropriate.

24. Mrs Salter received two units of O negative blood, at 2:09pm and then at 2:35pm. While the blood was out of date by several hours, it was an appropriate and life-saving decision.

25. Dr Lituri sutured the site of the bleeding. He was unaware at that time that the injury he had repaired was to the portal vein.

26. Dr Lituri remained calm and composed during the emergency, however was not aware that he had closed Mrs Salter's abdomen with Raytec packs inside. Once this was realised and identified at x-ray, a decision was made not to reopen and retrieve them due to the knowledge that Mrs Salter would undergo further surgery upon retrieval and her unstable condition. This was an appropriate decision.

27. Dr Lituri contacted a hepatobiliary surgeon at the RAH and informed him of Mrs Salter's condition and impending arrival.

28. Once at the RAH, Mrs Salter underwent two rescue surgeries but, despite the best efforts of the teams involved, she died.

29. The condition that was ultimately identified at histopathology, xanthogranulamatous cholecystitis**,** was not identified in the routine radiological investigations undertaken in the lead up to the procedure. The multi-nucleated foreign body cells could only have been diagnosed after biopsy and histopathological examination.

30. Mrs Salter's death was preventable.

Recommendations

89 Pursuant to section 25(2) of the Coroners Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.

90 Laparoscopic cholecystectomies are considered to be relatively routine procedures. However, like all surgical procedures, there is risk.

91 Mrs Salter’s pre-anaesthetic surgical assessment did reveal a moderate risk and that was appropriately identified and dealt with by Drs Kurrupu and McLennan. Mrs Salter’s routine pre-surgical tests did not however reveal anything to suggest that her procedure would be anything other than uneventful. The surgical risk presented itself when Dr Lituri observed an unexpectedly inflamed gallbladder. Although xanthogranulamatous cholecystitis is a rare condition, the difficulty detecting it until the procedure is underway (at the earliest), highlights the importance of having tools available such as CT cholangiogram. The CT cholangiogram used intraoperatively would have assisted in re-orientating Dr Lituri, in a floridly inflamed area. Had this tool been available to Dr Lituri, Mrs Salter’s death could have been prevented. Information received just before this Finding was published confirmed that the Clare Hospital still does not have a CT cholangiogram.

92 I therefore recommend, to the Minister for Health and Wellbeing, that consideration be given to the provision of CT cholangiogram facilities at all rural sites in South Australia where elective cholecystectomy is performed.

93 Dr Lituri should not have proceeded when he identified the unexpectedly inflamed gallbladder. However, he could not have known of the condition underlying the inflammation. The importance of contingency plans, ‘*bail out options*’, were highlighted by Professor Padbury during oral evidence, as was a culture of continuing with surgeries where unexpected issues were encountered.

94 I hereby recommend, to the Royal Australasian College of Surgeons, that training be provided to trainees of the surgical program on the importance of minimising harm by not continuing with procedures/surgeries attended to by unexpected circumstances of high risk.

Acknowledgments

95 I acknowledge the valuable assistance of special counsel, Mr Darren Evans.

96 I would like to convey my sincere condolences to the family and loved ones of Mrs Salter.

Keywords: Cholecystectomy; Laparoscopic Surgery; Rural Hospital