IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2008 1729

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 60(1)
Section 67 of the ***Coroners Act 2008***

Inquest into the Death of: BRUCE JOHN STUBBS

Delivered On:	12 April 2013
Delivered At:	Level 11, 222 Exhibition Street Melbourne 3000
Hearing Dates:	11, 12, 13 and 14 October 2010
Findings of:	PETER WHITE, CORONER
Representation:	Mr D. J. Wallis appeared on behalf of relatives of the deceased Mr J. F. Carmody appeared on behalf of Melbourne Health
Police Coronial Support Unit	Leading Senior Constable Tracy Weir

I, PETER WHITE, Coroner having investigated the death of BRUCE JOHN STUBBS

AND having held an inquest in relation to this death between 11 and 14 October 2010
at Level 11, 222 Exhibition Street, Melbourne 3000
find that the identity of the deceased was BRUCE JOHN STUBBS
born on 22 July 1950
and the death occurred 23 April 2010
at The Royal Melbourne Hospital, 34-54 Poplar Road, Parkville 3052
from:

1 (a) RUPTURED ATHEROSCLEROTIC ABDOMINAL AORTIC ANEURYSM (OPERATED)

in the following circumstances:

Background

1. Bruce Stubbs was born on the 22 July 1950. At the time of his passing, he worked as a Field Sales Manager for Nike in Bendigo, where he was also temporarily residing in connection with that employment.

2. On the 21 April 2008, according to his wife Mrs Barbara Stubbs, Mr Stubbs presented himself to Bendigo Hospital at approximately 10.00pm, complaining of backache and severe abdominal pain.[1]

Hospital admission - Bendigo

3. An abdominal CT scan conducted from the Emergency Department, revealed a non-ruptured 8x8cm infra-renal abdominal aortic aneurism (AAA), which extended to the aortic bifurcation. Other than the fact that he was a smoker there was no other relevant history.

4. The Metropolitan Ambulance Service immediately transferred Mr Stubbs to the Royal Melbourne Hospital (RMH), arriving at 2.13am on the 22 April 2008.[2]

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[1] See evidence of Mrs Barbara Stubbs at transcript page 4, where she testified as to her recall of details of a phone call she received from Bendigo Hospital, on the 22 April 2008.

[2] See statement of RMH ED Dr Karpathakis, at exhibit 5 page1.

5. According to the history obtained by vascular surgeon Dr Paul Conaglen, who saw him in the RMH Emergency Department at 2.30am, the road trip to Melbourne was uneventful.

Royal Melbourne

6. Emergency Registrar, Dr Karpathakis, first examined Mr Stubbs in the RMH Emergency Department, at 2.15am on the 22 April 2008.

Medical Management at Royal Melbourne Hospital - Dr Karpathakis

7. Dr Karpathakis remained in the Emergency Department until the end of his shift at 8.00am. During this period, Mr Stubbs remained stable with systolic BP ranging between 120-140 mm HG, pulse ranging between 70-80 bpm and oxygen saturation above 96%. He was observed to have one episode of vomiting. He was given intravenous morphine, 2.5mg at 3.20am, (the time of Dr Conaglen's conversation with Mr Wagner), 5.20am and at 7.15am, for pain.[3] A full range of blood testing revealed no particular abnormalities.

8. Intravenous fluid as well as anti-emetic and narcotic analgesia, (morphine), was provided as required.

9. According to Dr Karpathakis,

> *"there were no other acute concerns regarding his progress."*[4]

10. In oral testimony, the witness further stated that he identified the AAA diagnosis and that it was an emergency requiring urgent assessment by the vascular team.[5]

11. Mr Stubbs was kept nil orally, and referred to the on duty vascular surgeon for further assessment and management.

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[3] According to Dr Conaglen, the notes reveal that the patient had 15mg of morphine between 10.55pm and 12.15am. The amount of pain relief provided to Mr Stubbs, was said not to have masked any flank pain or peritonitis, by the time of his examination at 2.30am. See transcript page 32-33. See also evidence of Dr Conaglen at page 41, setting out the analgesic medication apparently provided in the ED following his examination referred to above.

See also evidence at page 34 confirming that Mr Stubbs was not provided with additional analgesic medication during his ambulance trip to RMH.

[4] See Dr Karpathakis statement ibid at page 1.

[5] See transcript pages 153-4, responses to questions put by Counsel for the RMH.

Dr Paul Conaglen[6]

12. Dr Conaglen first assessed the patient in his role as the vascular registrar on duty, at approximately 2.30am on the 22 April 2008.

13. Both Mr Tim Wagner, vascular surgeon, and Dr Conaglen, were in surgery at the hospital on the evening of the 21 April 2008, with Dr Conaglen having assisted Mr Wagner in at least one operation.

14. I note here that they spoke later on the phone after Mr Wagner had left the hospital for the night, with Dr Conaglen having remained at RMH to examine Mr Stubbs, who was at the time still being transported to Melbourne.[7]

15. On review, Dr Conaglen recorded that initially Mr Stubbs had suffered from the sudden onset of lower back pain, which had radiated down both legs. The pain had commenced at work at around 3.00pm on the 21 April 2008. After his return home, he found the pain constant and he subsequently took himself to Bendigo Hospital presenting at around 10.00pm.

16. Dr Conaglen further noted that,

> *"there was no change in bowel or urinary habit, nor vomiting, chest pain, shortness of breath or cough. He was a smoker had evidence of hypercholesterolemia and hypertension but had no regular medication."*[8]
>
> Further, his abdomen was soft and,
>
> *"there was no tenderness in his abdomen or flanks, on examination."*

17. The CT and patient transfer letter,[9] from Bendigo were discussed with the on-call radiology registrar, and blood tests results, an ECG and chest x-ray were also reviewed. Dr Conaglen also rang the radiology dept at Bendigo to get their provisional findings on the CT.

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[6] Dr Paul Conaglen was the Junior Vascular Surgery Registrar (unaccredited), who was on duty on the evening of the 21 and 22 April 2008.

[7] See exhibit 2 at page 1, and transcript page 27-8 and 35.

[8] See statement at exhibit 2.

[9] See exhibit 2(a), transfer letter addressed to Dr Conaglen and Mr Wagner.

18. As set out above the matter was also discussed with the second on call vascular surgeon, Mr Timothy Wagner, who spoke with him at around 3.20am, while he Dr Conaglen, remained in the Emergency Department.[10]

19. Again according to Dr Conaglen, Mr Wagner's opinion was that the patient would need surgical repair for his AAA, but given no tenderness and that he was haemodynamically stable, (haemoglobin readings plus blood pressure and heart rate were stable, with no evidence of leaking),

> *"with no signs of imminent cardiovascular collapse."*[11]

> *"that he would benefit from further planning."*[12]

20. Dr Conaglen next reviewed Mr Stubbs between 8.30am and 9.00am the same morning, 22 April 2008. A Vascular unit resident, Dr Vasey, Intern, Dr Tee and Senior Resident, Dr Simring, also attended on the patient, who remained in the Emergency Department.

21. At this review, Dr Conaglen attended on Mr Stubbs and verbally handed the patient over to Dr Simring.[13]

Dr Simring[14]

22. It is not in dispute that at 9.00am on the 22 April 2008, Dr Simring recorded the history of the patient, and also noted that he was likely to have untreated risk factors for cardiovascular disease including heavy ongoing smoking, hypercholesterolemia and hypertension.

23. (Ongoing) back pain was also noted and there were,

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[10] See transcript page 38.

[11] See transcript page 36.

[12] Dr Conaglen further testified that AAA repair was a substantial operation which required the mobilization of surgical staff, perfusion staff, scrub nurses and anaesthetists,-which could be more easily managed in the morning. Transcript page 37-8.

I also note that at the time of what was an appropriately thorough review, that Dr Conaglen had been on duty for approximately 20 hours, with only a small break for sleep between approximately midnight and the arrival of Mr Stubbs at 2.15am. See transcript page 39.

[13] See transcript page 43-4.

[14] Dr Simring was a senior vascular surgical registrar at RMH, at the relevant time.

"Lengthy discussions with patient and family regarding aortic aneurysm surgery. Continued fasting for theatre."[15]

24. Dr Simring discussed the matter with Dr Wagner, at around 12.00 noon.

25. His note concerning that discussion was to the effect that it was resolved to delay surgery until the morning of the 24 April 2008, i.e. for a further 48 hours, with Dr Tee to convey that message to the patient and his family, and to nursing staff,- that he could resume oral intake.[16]

26. Dr Simring's later record was to the effect that Dr Matt Liava'a, a vascular resident, reviewed the patient over the next night, after nursing staff had noted a reduction in blood pressure from 110 to 86 systolic.[17]

"The patient is found to be pain free. Physical examination is unremarkable apart from dry mucus membranes. The patient is assessed as having, reduced BP (secondary) to mild dehydration".

"Neither Dr Simring, as the on call, or Mr Wagner were informed of these events."[18]

27. Mr Stubbs was not seen again that night. The next note of Dr Simring, records that at between 8.30am and 9.00am on the 23 April 2008, he was paged to attend Mr Stubbs who had reported to nursing staff to be feeling unwell and dizzy. On arrival the earlier notes were reviewed and Mr Stubbs complained of,

"feeling awful...anxious and giddy, but pain free."

28. Dr Simring further noted that the aneurysm is,

"non-tender (and) *the patient was hemodynamically unchanged, i.e. his current blood pressure and heart rate have been the same over the previous 6-8 hours, although there has been a drop from the previous day."*

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[15] Statement of Dr Simring. Exhibit 3, page 2.

[16] Ibid.

[17] No time is given for this entry.

[18] Exhibit 3, ibid.

29. Urgent blood and ECG testing was ordered and Mr Wagner was informed. Subsequent to the receipt of test results, an urgent CT was undertaken, with staff then put on standby for,

> *"a potentially urgent theatre case."*[19]

30. At 11.15am, the CT results were received and the suspected ruptured AAA was confirmed, with Mr Stubbs transferred to theatre and noted again to be hemodynamically unchanged.

31. Between 11.45am and 2.00pm, open operative repair was undertaken, with the aorta replaced with a tube graft. Numerous packs and a VAC dressing were employed, when Mr Stubbs then being prepared for transfer, became,

> *"hemodynamically unstable."*

32. He was then prepped again for urgent re-exploration and his abdomen was re-opened. This was followed by cardiac arrest, from which he died, soon afterwards.[20]

Dr Mathew Liava'a[21]

33. In the early morning of 23 April 2008, Dr Liava'a was called to see Mr Stubbs by nursing staff who had recorded a blood pressure reading of 86 over 70mmHg. Dr Liava'a reviewed the history and spoke with Mr Stubbs who denied,

> *"abdominal, back ,loin or groin pain."*

34. Dr Liava'a then took a second BP rate, as the patient had earlier been asleep, recording 94/70 mmHg.

> *"and thoroughly examined his back due to his known history... observing that the aneurysm was completely non tender."* [22]

35. Dr Liava'a ordered that the patient be monitored. He felt he was dehydrated and ordered further fluids to rehydrate by oral intake, rather than through an IV line, because he

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[19] Ibid page 2-3. The blood count revealed a drop in haemoglobin from 13.8 to 10.6 grams per decilitre.

[20] Ibid page 3.

[21] Dr Liava'a was on the relevant night the covering on duty resident for Cardiothoracic, Vascular and Urology surgical services.

[22] See exhibit 6 page 1.

"didn't want to shoot his blood pressure up."[23]

36. He did not contact the on call Senior Vascular Registrar, Dr Simring.

37. In additional testimony, (in answer to questions from counsel representing Mr Stubbs family), the witness stated that he felt the presentation was not a symptomatic AAA.

38. He was aware of the morphine use but not aware of the number of administrations. After examination, he did not think that a AAA rupture was likely.[24]

39. His further evidence was that he was not given any further information about Mr Stubbs and the risk of aortic rupture, prior to being called in to examine him and that he would have acted differently, had he been so instructed.

40. After leaving the patient, the witness has no recollection of receiving further advice from nursing staff concerning Mr Stubbs:

"although the notes say otherwise."[25]

41. In answer to a further question from the court, Dr Liava'a testified that he was not aware if there was any formal direction as to when an out of hours phone call should be made to an on-call resident.

Mr Timothy Wagner[26]

42. In his statement, Mr Wagner records that he first received a call from the Senior Vascular Registrar, Dr Conaglen concerning Mr Stubbs at approximately 5.20am, on the 22 April 2008.

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[23] See transcript page 225.

I also note that at page 229 the witness stated that he wasn't sure if he checked to see whether fluid was being given via the IV, when he first examined Mr Stubbs.

He agreed that this would have been relevant to establishing whether his preliminary view that the blood pressure drop had occurred because of dehydration, was correct. (Exhibit 6A page A 174, suggests that the patient was not on IV fluids when seen overnight).

He also gave further reasons for not ordering additional blood tests, or a CT scan and for not discussing the matter with other Unit members.

[24] See transcript page 228.

[25] Transcript page 232.

[26] Mr Wagner is a vascular surgeon at RMH.

He understood that the patient had been admitted earlier that morning suffering from a AAA, with no rupture.

> *"Admitted with intent to repair promptly because although non tender and non ruptured on CT, back pain was on going and unexplained by other pathology."*
>
> The underlining is mine.

43. Further discussion is noted, at a point between 12.00pm and 1.30pm on the 22 April 2008, which we know took place between Mr Wagner and Dr Simring. At this time according to Mr Wagner the patient was reported as stable with no abdominal tenderness reported.

44. Apart from morphine administered in the Emergency Dept and a single dose of Oxycodone,

> *"there had been no need for analgesia administration."*[27]

45. On this basis, Mr Wagner made a decision to (again) defer surgery.

46. Later that night Mr Wagner records that the patient was seen by night resident, (Dr Liava'a), with low pressure and abdominal pain. No discussion with vascular unit is noted.

47. Next Mr Wagner records that Mr Stubbs was found unwell on ward round, with AAA not immediately evident and a CT scan ordered. CT result by late morning, confirming that AAA rupture had occurred, and the patient taken directly into surgery.

48. In answer to a series of questions posed by the court, Mr Wagner further set out his reasons for deferring surgery, when he was first informed about the matter in the early hours of the 22 April 2008, and why that surgery was not scheduled until the 24 April 2008.

49. According to those responses, the matter was understood to be serious but was deferred because of his understanding that the patient required minimal on going analgesia.

> *"On this understanding surgery was deferred to Thursday, 24/4, and premised on the consideration that this, rather than an unscheduled trip to theatre out of usual hours*

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[27] Ibid page 1.

I note here that the reference to 5.20am appears at odds with the evidence of Dr Simring and that the evidence of Dr Simring given by reference to the clinical notes constitutes a more reliable estimate of the time this call was actually made.

(with lesser resources available peri operatively) would provide optimal operative management. Even then he would still remain of high risk for major peri operative work-up including cardiac evaluation."[28]

50. Mr Wagner further stated that he now believed the rupture had occurred just prior to Dr Liava'a assessment, but when reviewed by the vascular team the next morning, that pain and tenderness were absent and that the rupture was not immediately evident, with surgery ordered after the results of the CT were known.

51. His further statement was that he had not become aware of the drop in BP referred to above, until he had the opportunity to review the clinical notes, after the attempted repair.

Expert Opinion - Professor Kenneth Myers[29]

52. Mr Myers noted with approval that upon discovery of the AAA at Bendigo Hospital, Mr Stubbs was immediately transferred to RMH, where he could be reviewed by suitably qualified vascular specialists.

53. Mrs Stubbs and her son arrived at the RMH at approximately 4.00am on Tuesday, 22 April 2008, Mr Stubbs having arrived earlier at 2.13am. Mr Myers further noted that at 7.00am, Mrs Stubbs was told by a member of the RMH, Vascular Unit that her husband required an operation, and that this did not in fact take place until 12.30pm on Wednesday 23 April 2008, when Mr Stubbs died on the operating table.

54. Professor Myers further observed that the delay in getting to surgery following Mr Stubbs arrival, with a AAA diagnosis, was more than 24 hours.[30] Professor Myers opined that the fact that the patient presented with pain was indicative that the abdominal aneurysm was already leaking. The time taken before the leak became a rupture, was seen as critical,

"in terms of survival or a fatal outcome."

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[28] Exhibit 7 page 2.

[29] Professor Ken Myers is a Clinical Associate Professor of Surgery at Monash University and was formally Head of the Department of Vascular Surgery at Prince Henry's Hospital and the Monash Medical Centre, and Chairman of the Division of Vascular Surgery within the Royal Australasian College of Surgeons.

[30] This was based upon Professor Myers belief that his arrival at RMH occurred at 4 am, rather than at 2.15am. In fact, the delay referred to occurred over a period of 34 hours.

"the delay in surgery was excessive and inappropriate and ...and that he should have been operated on within hours of arrival...on the Tuesday morning."[31]

55. His further opinion was that a symptomatic AAA such as that, which occurred here, would usually rupture within 24 hours or within 24-48 hours.[32] Additionally, Professor Myers offered criticism of the reasons offered for delay. He felt that a specialist anaesthetist, (see report of Dr Simring), should have been available at RMH at any time and that the absence of pain could be explained by the intravenous morphine, with the falling blood pressure and haemoglobin,

"clearly due to blood loss and not dehydration."

"The patient was bleeding from the onset, initially slowly and later more rapidly, leading to his death."[33]

57. In regard to delay Professor Myers further stated that he must,

"totally disagree,"

58. With Mr Wagner's assessment, (that the imminent risk of rupture was low and the need to ensure that optimal facilities were available, justified the decision to defer).

59. Rather his opinion was that the large AAA coupled as it was with pain requiring any analgesics, particularly IV morphine,

"is a clear signal for urgent surgery as soon as possible. <u>It is my personal opinion that this should be performed prior to any investigations, including a CT scan which I feel to be a waste of precious time....</u>"

And...,

<u>"The best time to operate for a large AAA that is causing symptoms is immediately."</u>[34]

The underlining is mine.

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[31] Exhibit 8, pages1 and 2.

[32] See transcript at pages 289 and 295.

[33] Ibid page 2.

[34] Ibid page 3. See also page 4 where Mr Myers speaks of his policy at Prince Henry's Hospital, in regard to any patient presenting with a large AAA who was complaining of pain.

Findings

Having reviewed all of the evidence, including all statements, and all testimony and having considered counsels written submissions and rebuttals, I make the following findings.

Before and following Mr Stubbs' admission to the RMH at 2.13am on the 22 April 2008, the staff of the hospital's Vascular Unit, called on to review and treat Mr Stubbs, understood that his condition was life threatening.

While the serious nature of the presentation was understood, I find however that the degree of urgency required in the delivery of a surgical response was not, and that the original decision to defer surgery was sub optimal and did not reflect adequately upon the pathology of this AAA, and its likely progression.

I further find that the results of the otherwise appropriate use of morphine and other analgesics to support the patient are likely to have misled surgical staff and contributed to error made at that time, concerning the urgency of treatment.[35]

Following a subsequent review the decision by Mr Wagner to delay again, was also sub optimal and was followed by what was ongoing bleeding, and ultimately by the onset of a rupture.[36]

It is relevant that in what I find was a very honest appraisal of the events under consideration, that Mr Wagner did not seek to testify that the decisions made in respect to Mr Stubbs were correct.[37]

In conclusion, I am satisfied that on arrival at RMH, Mr Stubbs had a better than 80% chance of survival.[38] I further find that the delays referred to, coupled with the passage of these not unlikely events, made the surgery which was finally undertaken, extremely problematic.[39]

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[35] Mr Wagner made the decision during a telephone consultation with junior resident Dr Conaglen, at approximately 3.20am.

[36] The second decision concerning the scheduling of the operation also amounted to a decision to defer and was made on the basis of a conversation between Dr Simring and Mr Wagner, which took place at around midday on 22 April 2008. The evidence of Dr Simring suggests that he mentioned to Mr Wagner that Mr Stubbs was suffering from ongoing pain, although I note Mr Wagner's evidence is to the effect that pain was not an issue, (Transcript page 248). The evidence does not suggest that Dr Simring voiced opposition to the further delay implicit in the approach directed by his senior.

[37] See appraisal at transcript page 265.

[38] This estimate is based upon mortality rates, if surgery had been carried out promptly.

[39] By this time, the chances of a successful outcome were very poor, and were complicated by the patients underlying cardiac disease. (Professor Myers testified at transcript page 302, that in an emergency situation, involving an AAA

COMMENTS

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comment(s) connected with the death:

1. Following an internal investigation undertaken in this matter, the hospital developed the Deteriorating Patient Project. The report of Mr Noel Atkinson, Head of RMH Vascular Surgery Unit, concerning this project, is attached to the exhibits list as MFI 10.[40] The underlining is mine.

2. I note here that the process adopted, directed as it is at early identification, appears to be an excellent initiative and that the evidence so far collected suggests that the cost of the additional training, which supports this programme, has been money well spent.

3. I would also add however, that in cases of AAA involving an aneurysm of the size measured in the matter before me, which has caused or is suspected of causing pain, requiring analgesics, or is otherwise symptomatic, that the evidence establishes that the need for immediate surgical intervention should always be the paramount consideration.

4. I am further satisfied from the evidence of Professor Myers, (and Mr Wagner), that such an approach should dominate any discussion on the matter of appropriate management of an AAA, presenting patient.

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presentation in a patient with coronary artery disease like Mr Stubbs, that you treat the aneurysm as a matter of urgency and that the presence of coronary artery disease is part of the risk, and often the reason for the 20 % mortality rate).

[40] I have directed that this report MFI 10, be made available to interested parties on application.

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

The family of Bruce Stubbs

The CEO Bendigo Base Hospital

The CEO Royal Melbourne Hospital

Mr N Atkins

Mr T Wagner

Dr P Conaglen

Dr D Simring

Professor K Myers

Signature:

PETER WHITE
CORONER
Date: 12 April 2013