Dr B, Orthopaedic Surgeon

A Report by the

Health and Disability Commissioner

(Case 03HDC06087)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Mr A	Consumer
Dr B	Orthopaedic Surgeon
Dr C	Vascular Surgeon

Complaint

On 29 April 2003 the Commissioner received a complaint from Mr A concerning the services he received from orthopaedic surgeon Dr B. The complaint was summarised as follows:

Dr B did not provide services of an appropriate standard when performing an anterior cruciate ligament reconstruction to Mr A's right knee at a military hospital on 29 January 2003. In particular, Dr B:

- *inadvertently severed Mr A's popliteal artery and vein during surgery*
- *did not diagnose that he had severed Mr A's popliteal artery and vein, or immediately refer Mr A for vascular assessment, despite excessive bleeding during surgery and adverse post-operative symptoms (including severe pain, reduced sensation and movement below the knee, and the lack of a foot pulse)*
- *did not make adequate arrangements for the monitoring of Mr A's condition, or for his ongoing care, while he was absent from the hospital for a period of approximately three hours during the afternoon of 29 January 2003*
- *did not transfer Mr A to a public hospital for vascular assessment in a timely manner when it became apparent at 5.00pm that Mr A's condition had not improved since his post-operative examination earlier that afternoon.*

In addition, Mr A made a verbal complaint that:

- Dr B did not provide Mr A with the information a reasonable patient in Mr A's circumstances would expect to receive. In particular, Dr B did not discuss the possibility of damage to the popliteal blood vessels during surgery.

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Independent advice to Commissioner

The following expert advice was obtained from Dr Alex Rutherford, orthopaedic surgeon:

"I have been asked to provide an opinion to the Commissioner on case number 03/06087/WS, and that I have read and agree to follow the Commissioner's guideline for Independent Advisors.

I am a Consultant Orthopaedic Surgeon practising at Nelson Hospital since 1987. I am a Fellow of the Royal Australasian College of Surgeons in Orthopaedics and a Fellow of the Royal College of Surgeons Edinburgh in Orthopaedics. I was Secretary of the New Zealand Association and the Education Committee of the Orthopaedic Association until October 2004. I am a General Orthopaedic Surgeon whose practice includes arthroscopic surgery of the knee and ligament reconstruction.

I have been asked to advise the Commissioner whether in my professional opinion the standard of care Mr A received from Dr B was an appropriate standard.

I had access to the following resource of information including documents, records and the following

Supporting Information

- Letter from Mr A to the Commissioner dated 29 April 2003 with enclosures, marked with an 'A'. (Pages 1 - 35)
- Record of telephone conversation with Mr A on 9 June 2003, marked with a 'B' (Pages 36 & 37)
- Letter and information from ACC received on 19 June 2003, marked with a 'C'. (Pages 38 - 48)
- Letter from Dr B to [the quality support advisor …], dated 25 June 2003, marked with a 'D'. (Pages 49 & 50)
- Medical records from the first public hospital received on 23 June 2003, marked with an 'E'. (Pages 51 - 192)
- Letter and enclosures from an ambulance service dated 11 July 2003, marked with an 'F'. (Pages 193-194)
- Letter and enclosures from [Mr A's general practitioner] to the Commissioner dated 30 July 2003, marked with a 'G'. (Pages 195-204)

and also a review of popliteal vascular injuries in Surgical Clinics of North America, Volume 2 No1 February 2002, pages 67 - 89. and Popliteal artery trauma A critical appraisal of an uncommon injury Gupta, Quinn and Rao Injury 32(5)357 - 61 June 2001

Background On 28 February 2002 [Mr A], a 23 year old airforce pilot, injured his knee in the officers' mess. After several weeks of physiotherapy, [Mr A] consulted [a] general practitioner in [a town], who diagnosed that [Mr A] had ruptured his anterior cruciate ligament, and recommended surgery and a suitable surgeon. However, [Mr A] had at that time been posted back to [a city], so he saw his own General Practitioner, [who] referred [Mr A] to

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[Dr B], Orthopaedic Surgeon at [the military hospital]. On 5 August 2002 [Mr A] saw [Dr B] at [the military hospital] for assessment of his injury. There was a delay in [Mr A's] surgery being arranged due to armed services procedural matters, but on 29 January 2003 he was admitted to the [the military hospital] for surgery to his knee. [Dr B] saw [Mr A] on the ward at 8am on 29 January for a pre-op check and to mark the operation site. Written instructions for the procedure for theatre staff were contained within a document described as 'standing orders', which was situated within the theatre environment. [Mr A] was taken to theatre, and the surgery to repair his torn anterior cruciate ligament commenced at 11.15am. During the resection of the ligament stump, more bleeding than generally occurs was encountered and [Dr B] confirmed with theatre staff that Adrenalin had been added to the infusion fluid to prevent excessive bleeding. However, the area was irrigated and the stump resected satisfactorily. At the conclusion of the surgery, [Dr B] discussed with the theatre staff the possible reasons for the bleeding. He was told that the leg had not been exsanguinated with an Eshmark bandage prior to the tourniquet being inflated and believed that this was the reason for the bleeding he had encountered. The standing orders did not specify an Eshmark bandage, although [Dr B] stated that he always performed the procedure using an Eshmark exsanguinated tourniquet applied field. [Dr B] said he would normally expect to be given the opportunity to check the standing orders, but this did not occur.

[Mr A] was taken to recovery at 1.20pm. [Dr B] went to the dictation office to record the details of the surgery. When [Dr B] finished his dictation he checked on [Mr A] in recovery and found that when the drainage clamps had been removed, there was an initial drainage of 350ml from the knee joint. [Dr B] examined [Mr A's] leg. [Mr A] was able to feel light touch below the knee but lacked active ankle and toe motion and the posterior tibial and dorsalis pedis pulses were absent, although he did have skin circulation. [Dr B] considered that the tourniquet time of 112 minutes at 250mms of pressure was sufficient to affect circulation for a reasonable time post-operative and, as such, was not particularly concerned. [Dr B] also observed some neurological abnormality which he also considered would resolve. He informed recovery nursing staff that he expected the full resolution of symptoms once the pressure had dissipated. [An] anaesthetist reviewed [Mr A] at 1.40pm and noted that [Mr A] was complaining of pain in his knee and recommended that he have further Morphine. He noted the impaired circulation of [Mr A's] foot and was told by the recovery nurse that [Dr B] was aware of the condition of the foot. [Dr B] informed the ward Charge Nurse, of [Mr A's] neurovascular signs which he believed was due to pressure in the popliteal fossa from pumping of Adrenalin in the infusion fluid. He informed [the ward Charge Nurse] that he would return to review [Mr A]. [Dr …] reviewed [Mr A] at 2pm and found that the foot had no pulses, was a dusky colour and that the veins of the foot and leg were distended. There were 400ml of blood in

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the drainage bottle. [Dr …] discussed his concerns with the recovery nurse, who informed him that [Dr B] knew about the condition of the foot and was returning to review the situation. At 3pm, the Registered Nurse who was taking over the afternoon care of the post-operative patients, was told by [the ward Charge Nurse] that [Mr A] did not have a pedal pulse and his temperature had risen to 38°C. [The registered nurse] advised [the Ward Charge Nurse] to contact [Dr B]. [The Ward Charge Nurse] found that [Dr B's] mobile was switched off, so she contacted his wife who informed her that his cell phone was turned off because he was playing golf. [The Ward Charge Nurse] informed Mrs B of her concerns, and [Mrs B] stated that she would contact her husband at the golf club.

At approximately 5pm [Dr B] arrived back at the hospital and took down the dressing to observe the condition of [Mr A's] knee. Upon examination [Dr B] formed a differential diagnosis of swelling due to fluids or vascular damage. [Dr B] explained to [Mr A] that he was transferring him to [the first public hospital] so that the circulation of his leg could be assessed. He then left the hospital after contacting [an ambulance service] at 6.01pm and requesting an ambulance be sent "as soon as convenient". The ambulance arrived at [the military hospital] at 7.18pm. [The registered nurse] contacted [Mr A's] family to notify them of his transfer. [Mr A] arrived at [the first public hospital] at 8.06pm and was admitted by [a] general surgical registrar. A large tense haematoma was noted in the popliteal fossa. An ultrasound examination failed to detect flow in the dorsalis pedis and posterior tibial arteries. An angiography was performed at 9.34pm which showed an absence of circulation below knee indicating a severed popliteal artery. [Mr A] was immediately taken to the operating theatre for vascular surgery which was performed by [Dr C], Vascular Surgeon. [Dr C] reported that following revascularisation and drainage of the haematoma, [Mr A] had full calf fasciotomies, but despite successful revascularisation he went on to lose significant amounts of his calf muscle because of irreversible tissue loss. Almost all of the anterior compartment in the lateral aspect of [Mr A's] calf was removed and a significant component of his peroneal compartment. There was minimal debridemont of his posterior-medial compartment. [Mr A's] recovery was complicated by the colonisation of his wounds with MRSA. He was referred to [a physiotherapy clinic] for ongoing physiotherapy and rehabilitation. [Mr A] submitted a claim to ACC for medical misadventure which was accepted as medical mishap on 19 March 2003. In forming their decision ACC obtained advice from an Orthopaedic Surgeon … [who advised] that the surgical procedure performed by [Dr B] was of an appropriate standard. [Mr A] submitted an application for review which was heard in June 2003. ACC obtained advice from Dr Peter Hunter who stated that Mr A made reasonable comments about the cumulative effects of delay in definitive treatment, but maintained his view that the treatment provided was reasonable in the circumstances. [Mr A's] application was dismissed.

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OPINION

On the 28th of January 2003 [Dr B] carried out an Arthroscopic anterior cruciate ligament reconstruction and excision of a torn lateral meniscus on [Mr A] at [the military hospital]. [Mr A] was prepared for surgery in a standard fashion with the application of a pneumatic tourniquet to the leg which was inflated to 200mms of mercury to stop blood flow in the leg. An Eshmark bandage, which is an elastic bandage applied to the leg to express blood from the veins was not applied, though this is written on [Dr B's] standing orders. The use of an Eshmark bandage varies from Surgeon to Surgeon with many Surgeons electing simply to elevate the limb. Normally the application of an Eshmark bandage would be delegated to one of the circulating nursing staff, though the decision as to whether it should or should not be used is that of the Surgeon.

[Dr B] has subsequently gone on to perform a standard arthroscopic anterior cruciate ligament reconstruction and excision of a bucket handle tear of the lateral meniscus. It should be noted at this stage that there is a difference between repair of a lateral meniscus which involves putting sutures through the meniscus in to the capsule and is a manoeuvre which does carry risk to nerves and vessels and excision of the lateral meniscus which has virtually no risk to nerve or vessels. It is the latter procedure that [Dr B] carried out. Surgery proceeded uneventfully with the exception of increased bleeding which subsequently [Dr B] has put down to the lack of exsanguination from an Eshmark bandage. This is a reasonable assumption, though in hindsight it was wrong. The operation however continued uneventfully. In order to obtain adequate visualization the amount of fluid being pumped through the knee was increased and a hand pump was used. The procedure was then completed satisfactorily.

During the immediate post operative period there was evidence of neurovascular impairment to the lower limb. [Dr B] assumed that this was due to tourniquet and ischaemia along with fluid extravasation in to the popliteal fossa which was a reasonable, though again an incorrect assumption.

Tourniquet and infusion fluid related nerve compression might resolve in a few hours to up to a month. [Dr B] expected a resolution of symptoms and thus his plan for review at 5pm was reasonable and does not breach the standard of care.

When the expected improvement did not occur at approx. 3 PM [the ward Charge Nurse] attempted to contact [Dr B] but his cell phone was turned off. His wife was contacted who arranged to contact him at the golf club. [Dr B] arrived back at the Hospital at 5 pm. With the benefit of hindsight a more rapid response would have been appropriate.

On reviewing [Mr A] a differential diagnosis of swelling due to fluid or vascular damage was made and transfer arrangements made for [Mr A] to go to [the first public hospital] for assessment.

At [the first public hospital] [Mr A] underwent Ultrasound examination and Angiography prior to transfer to the operating Theatre. Surgery to revascularise the

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limb began at approx. 10pm. Despite the reestablishment of blood flow there has been irreversible damage to the muscles of the leg.

The time taken to achieve a blood flow in the leg is a combination of the delay in diagnosis, the need to transfer the patient to another hospital and surgical team and the requirement that further imaging studies be performed before going to the operating theatre.

Gupta, Quinn and Rao in their review of 9 Popliteal artery injuries treated in Perth over a 5 yr. period found that long delays occurred between injury and subsequent treatment, mainly due to the tyranny of distance but further delay occurred while undergoing Angiography.

It is clear that had the diagnosis been made immediately post operatively valuable time might have been saved. Unfortunately the rarity of the injury and the presence of a plausible alternative made a delay in the diagnosis almost inevitable.

I believe the relevant standards have been met in this case but that the Orthopaedic community at large could learn from this case and have a much lower threshold for investigation when confronted with a cold pulseless foot after arthoscopic surgery around the knee.

EXPERT ADVICE REQUIRED:

1. Whose responsibility is it to apply an Eshmark bandage in these circumstances?

An Eshmark bandage is an elastic bandage wrapped around the limb with a view to forcing the blood out of the venous system exsanguinating the limb prior to tourniquet being applied. This is not used universally by Surgeons many of whom will simply elevate the limb prior to applying the bandage.

2. Should the Surgeon ensure than an Eshmark bandage has been applied?.

It is the Surgeon's responsibility to decide whether an Eshmark bandage should be used, but he may delegate the application of this to theatre nursing staff. The decision regarding the use of an Eshmark bandage is the Surgeon's.

3. Were [Dr B's] actions in relation to the tourniquet and Eshmark bandage appropriate?

[Dr B's] actions in relation to the tourniquet and Eshmark bandage were appropriate.

4. Was the surgery that [Dr B] performed on [Mr A's] knee of an appropriate standard?

[Dr B] prescribed a standard arthroscopic anterior crucial ligament reconstruction and lateral meniscal tear, which he performed on the 29th of January 2003. In his operation note he pointed out there was a posterior bucket handle tear of the inner third of the posterior horn of the lateral meniscus and this was excised using forceps without difficulty under clear vision. This latter procedure differs from a repair of a lateral

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meniscus in that instruments or sutures are not passed through the capsule and this latter manoeuvre is not associated with a high risk of vascular injury. During the operation [Dr B] noticed increased bleeding during the surgery and requested higher fluid volumes to improve visibility and asked whether or not Adrenaline had been added to the solution. Adequate vision was then achieved, but subsequently [Dr B] realised that an Eshmark bandage had not been applied and felt that this was a reason for the increased bleeding during the latter part of the operation. This would be a reasonable assumption particularly if the Surgeon was used to using an Eshmark bandage as a routine for their surgery.

5. Did the lack of the Eshmark bandage have any effect on the operation and the level of expected bleeding?

The lack of the Eshmark bandage did not have any significant effect on the operation but did provide a plausible reason why there was excessive bleeding.

6. Was [Dr B's] assumption that the tourniquet induced ischaemia would resolve spontaneously appropriate?

[Dr B's] assumption that the tourniquet induced ischaemia would resolve spontaneously is an appropriate assumption.

Tourniquets are used to produce a bloodless operative field during surgical procedures, however tourniquet use has been implicated in various complications including arterial occlusions and nerve injuries. Inflation of a tourniquet can adversely affect the nerve function. This is related largely to the pressure gradient in the nerve between the compressed and non-compressed regions. Factors relevant to the likelihood of tourniquet related complications include the duration of use, the inflation pressure and size and shape of the cuff. A further potential source of neurovascular complications is the use of an infusion pump where fluid is pumped through the knee at greater pressure than simply gravity irrigation. Most neurological symptoms after the use of tourniquet and/or infusion pumps are sensory deficit that will resolve over days to weeks.

7. Was it appropriate that [Dr B] left the hospital, given [Mr A's] condition? If so, what instructions should have been given to the nursing staff, including how to contact him?

[Dr B] advised the Charge Nurse of what he considered was the cause for [Mr A] neurovascular signs and advised that he would return to review [Mr A] which was an acceptable action, considering the diagnosis at that stage was thought to be transient tourniquet and infusion fluid pressure in the popliteal fossa.

8. Did [Dr B] make adequate arrangements for the monitoring of [Mr A's] condition and his ongoing care before he left that afternoon?

[Dr B] advised that he would be returning to review the patient and had his cell phone with him. It was known where he was going and how to contact him. These

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arrangements are adequate and would be considered standard practice amongst Surgeons in New Zealand after performing elective orthopaedic surgery.

9. Please comment on whether [Dr B] should provide nursing staff a time frame for the expected resolution of symptoms and instructions as to what action to take if this did not occur (including what a reasonable time frame would be.)

The expected time for resolution of Tourniquet induced ischaemia and/or neurological symptoms varies from a few hours to some months. A deterioration of symptoms and signs instead of the expected improvement was a cause for alarm and was recognised as such by [the nurses on duty].

10. Do you consider that [Dr B] was sufficiently contactable during the following afternoon?

With the benefit of hindsight it would have been preferable for [Dr B] to have been reached at 3pm. Unfortunately [Dr B's] cell phone was switched off at this time.

Although in this instance [Dr B] was on golf course he could have equally been in another operating theatre at another hospital when his cell phone would also have been switched off and this would be an equivalent level of contactability. This level of contactibility is routine within New Zealand

11. Given his subsequent diagnosis of vascular injury do you consider [Dr B] organised [Mr A's] transfer to [the first public hospital] with sufficient urgency? ([Dr B] requested the ambulance at 6.01pm 'as soon as convenient').

Once the diagnosis of vascular injury was entertained then it is urgent to diagnose the degree of ischaema and relieve this if possible. The presence of capillary return (signs of blood flow in the skin) may have masked the seriousness of the situation. [Dr B] made appropriate arrangements in the situation. The term 'as soon as convenient' can be interpreted in different ways, but from the records provided the call to the ambulance was made at 18.04 and the ambulance arrived at 1918. It then took 1918 to 1955 to arrive at [the first public hospital]. Even the most urgent priority would have only saved some thirty minutes.

12. When should [Mr A] have been transferred to [the first public hospital]?

With the benefit of hindsight [Mr A] should have been transferred to [the first public hospital] at approximately 2 to 3 o'clock when it was clear that symptoms of ischaemia in the leg were deteriorating rather than improving.

13. What else should [Dr B] have done in the circumstances?

Again with the benefit from hindsight [Dr B] may well have elected to review [Mr A] earlier than 5 o'clock, but realistically this would have only saved some two and a half hours.

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On review of popliteal injuries Carey and Perth have shown that the results of popliteal injury may be severe and that the delay in treatment invariably has a bearing on the end result. The cause of the delay in treatment is usually multifactorial. Delay in diagnosis, transfer from one hospital to the other if no Vascular Surgeon is on hand and the decision to obtain further imaging studies such as arteriogram. All three factors occurred in this case leading to the severe consequence for [Mr A].

14. What are the relevant standards relating to this complaint and did [Dr B] comply with those? If you consider that relevant standards were not met, was the departure minor, moderate, or major?

[Dr B] performed an Arthoscopic Ligament reconstruction in which he inadvertently injured the politeal vessels. This was undiagnosed for approximately three hours after which [Dr B] arranged transfer to [the first public hospital] for definitive surgery. The total time before surgery was carried out was sufficiently long that irreversible muscle damage occurred.

With the benefit of hindsight decisions could have been made more rapidly but this does not constitute a departure from the relevant standard.

It is my opinion that [Dr B] complied with the relevant standards relating to this complaint.

15. Are there any other matters, which you believe to be relevant to this complaint?

No.”

No further action

On 6 December 2004 the Commissioner informed Mr A that he was considering taking no further action on his complaint. The Commissioner invited comment and on 17 December 2004 received a written response from Mr A’s lawyer. Mr A accepted Dr Rutherford’s opinion that it was understandable that Dr B did not diagnose the damage to Mr A’s popliteal artery immediately after surgery. However, Mr A remain concerned that “over an hour elapsed” between when Dr B formed his diagnosis of possible vascular damage at 5pm and when he contacted an ambulance (at 6.01pm) to arrange for his transfer to the public hospital. Mr A had also criticised Dr B for not requesting an urgent ambulance. Mr A believes the delay in seeking further assistance was “crucial” and contributed to the damage he suffered to his leg.

The Commissioner carefully considered Mr A’s response but formed the view that it remained appropriate to discontinue the investigation for the reasons outlined below.

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Expert advice to the Commissioner
Dr Rutherford advised that the care provided to Mr A by Dr B in relation to his anterior cruciate ligament reconstruction surgery to his right knee was appropriate in the circumstances.

The Commissioner also considered the expert advice obtained by ACC from Dr Peter Hunter, an orthopaedic surgeon who is also a member of the Commissioner's panel of expert advisors, having been nominated by the Royal Australasian College of Surgeons. Dr Hunter provided advice to ACC in relation to Mr A's medical misadventure claim, which was accepted as medical mishap on 19 March 2003. Mr A appealed the decision, on the basis that the claim should have been accepted as medical error on the part of Dr B. Mr A's appeal was declined on 29 July 2003.

ACC's expert advisor was not asked by this Office to specifically comment on Mr A's case. However, the comments he made in his two reports to ACC dated 14 March 2003 (in relation to Mr A's initial ACC claim) and 27 July 2003 (in relation to Mr A's ACC review hearing) are clearly relevant. In his report of 14 March 2003 Dr Hunter stated:

> "It does appear that appropriate action was taken and when, after a reasonable time, the symptoms were deteriorating and not, as expected, improving, transfer for appropriate investigation and management was arranged.
>
> Only again in retrospect, can it be said that this would have been better earlier. Repair of the damaged blood vessels with the re-establishment of blood flow appears to have been approximately 10 hours. Whether reduction of this time by three hours would have made any difference to the eventual outcome is uncertain. "

Prior to submitting his second report, Dr Hunter was provided with a copy of Mr A's submissions for the ACC review hearing, together with the report of 18 March 2003 by vascular surgeon Dr C, detailing Mr A's treatment after arrival at the public hospital. Dr C commented:

> "The time to revascularization, in my opinion, is likely to have influenced the final outcome."

Dr Hunter considered that Mr A made "some very important points" in relation to the cumulative effect of delay in his treatment in the postoperative period. Dr Hunter noted that Dr C's report confirmed that Mr A's leg was ischaemic for approximately 12 hours and commented that it "is implicit that the sooner circulation is restored to ischaemic tissue the better the result is likely to be". However, Dr Hunter maintained his opinion that Dr B provided Mr A with an appropriate standard of care.

Dr Rutherford considered that the surgery itself was performed to an appropriate standard, and that it was reasonable (although incorrect) of Dr B to form the view that Mr A's postoperative ischaemia was due to pressure on neurovascular structures, caused by the tourniquet and infusion fluids used during the operation. It was therefore reasonable of Dr B to advise nursing staff that the symptoms would be expected to resolve spontaneously. Dr Rutherford commented that the time for resolution varies from a few hours to months.

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Furthermore, because Dr B expected the symptoms to resolve, his plan for review at 5pm was appropriate.

Dr Rutherford was specifically asked to comment about the matters that Dr Hunter acknowledged were significant, but did not give detailed consideration to, in his reports to ACC. Dr Rutherford considered that Dr B's advice to nursing staff, his availability through the afternoon and the arrangements he made for Mr A's transfer to the public hospital were appropriate. Dr Rutherford made the following comments in this regard:

> "[Dr B] advised that he would be returning to review the patient and had his cell phone with him. It was known where he was going and how to contact him. These arrangements are adequate and would be considered standard practice amongst surgeons in New Zealand after performing elective orthopaedic surgery.
>
> …
>
> With the benefit of hindsight it would have been preferable for [Dr B] to have been reached at 3pm. Unfortunately [Dr B's] cell phone was switched off at that time.
>
> Although in this instance [Dr B] was on [the] golf course he could have equally been in another operating theatre at another hospital when his cell phone would also have been switched [off] and this would be an equivalent level of contactability. This level of contactability is routine within New Zealand.
>
> [Mr A disagrees with Dr Rutherford's advice that [Dr B] was sufficiently contactable.]
>
> …
>
> Once the diagnosis of vascular injury was entertained then it is urgent to diagnose the degree of ischaema and relieve this if possible. The presence of capillary return (signs of blood flow in the skin) may have masked the seriousness of the situation. [Dr B] made appropriate arrangements in the situation."

In his letter to the Commissioner dated 23 June 2003, Dr B provided an explanation of what occurred when he returned to examine Mr A. Dr B stated:

> "I arrived to examine [Mr A] at approximately 1700 hours. [The medical notes confirm the time was 1700 hours.] This examination consisted of asking general questions relating to his status, then performing a careful neurovascular assessment of his limb and removing surgical dressings in a sterile manner to examine his knee.
>
> …
>
> I spoke by telephone to [the anaesthetist] during the operation, and we reviewed [Mr A's] condition – discussion included the possibility of a vascular injury. [The anaesthetist] advised me that [a vascular surgeon] attached to [the military hospital] was unavailable and therefore not able to contribute to [Mr A's] diagnosis or treatment.

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I was concerned to transfer [Mr A] to a facility equipped to deal with the possible severed artery, so called [a second public hospital] … I discussed [Mr A's] case with the surgical registrar who did not feel it would be appropriate to transfer him to [the second public hospital].

I immediately called [the first public hospital] and spoke with the duty surgical registrar. I discussed [Mr A's] case and arranged to transfer him.

I then contacted [an ambulance service] myself, and arranged for [Mr A] to be transferred from [the military hospital] to [the first public hospital]. The issue of priority or urgency was not discussed by the ambulance service … I assumed that because of the nature of the transfer and that I had advised an escort would be provided that priority would be given. I understand [Mr A] asserts that a non-urgent request was specifically made. I am absolutely certain that I did not state the matter was non-urgent, or any words to that effect."

My advisor stated:

"On reviewing [Mr A] a differential diagnosis of swelling due to fluid or vascular damage was made and transfer arrangements made for [Mr A] to go to [the first public hospital] for assessment.

…

[Dr B] made appropriate arrangements in the circumstances."

Dr Rutherford concluded that the postoperative care provided by Dr B was not a departure from relevant standards. Dr Rutherford stated:

"The time taken to achieve a blood flow in the leg is a combination of the delay in diagnosis, the need to transfer the patient to another hospital and surgical team and the requirement that further imaging studies be performed before going to the operating theatre.

…

It is clear that had the diagnosis been made immediately post operatively valuable time might have been saved. Unfortunately, the rarity of the injury and the presence of a plausible alternative made a delay in the diagnosis almost inevitable.

…

With the benefit of hindsight decisions could have been made more rapidly but this does not constitute a departure from the relevant standard."

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Commissioner's Opinion

Dr Rutherford's advice addresses the questions raised in Mr A's complaint. ACC's expert advisor (in his two reports) and Dr Rutherford both consider that Dr B provided Mr A with an appropriate standard of care.

Mr A remains concerned that over an hour elapsed following Dr B's examination and when he requested an ambulance. Clearly, an earlier examination and diagnosis and a more prompt transfer to hospital would have reduced the length of time Mr A's leg was ischaemic. The treatment he received could have been improved, but only with the benefit of hindsight. I am satisfied that Dr B acted appropriately, based on the information available to him. The reasons for the delay in the restoration of circulation to Mr A's leg were complex and multi-factorial and not attributable to any particular fault or omission on the part of Dr B.

Accordingly, I have decided to take no further action on the complaint, as I am of the view that little more would be gained by this Office continuing the investigation.

Dr Rutherford did not specifically comment in relation to Mr A's concerns about the preoperative information he provided. This matter is discussed below.

Information provided by Dr B
Mr A was concerned that Dr B did not advise him of the possibility of damage to the popliteal artery during surgery, even though he met with him twice (on 5 August 2002 and 21 January 2003) to discuss the proposed procedure.

Dr B informed me:

> "I do not accept that insufficient information was provided. In particular, the second consultation was initiated by [Mr A] to ask specific questions, and I answered all of these.
>
> …
>
> It is not my policy to discuss the possibility of damage to the popliteal artery or vein because of the outright rarity of the complication. It is my normal procedure to advise patients that there are risks from surgery, and to describe the major risks known to be associated with the procedure."

In his reports to ACC, Dr Hunter confirmed that damage to the popliteal artery is a very rare complication and, as such, easily qualified as medical mishap. I note that in the ACC review decision it is recorded that Mr A's case of popliteal artery injury "is apparently the only case of its type in New Zealand".

The adverse consequences suffered by Mr A are rare and Dr B clearly did not anticipate them. Based on this information, I am satisfied that Dr B's care was reasonable in respect of the information he provided to Mr A.

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Conclusion

In light of the advice I have received, I do not consider further investigation of the matter is warranted.

Dr Rutherford commented on the educational value of what occurred to the wider orthopaedic community. Accordingly, an anonymised copy of this report will be forwarded to the New Zealand Orthopaedic Association and placed on the Commissioner's website, www.hdc.org.nz.

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