An Accident and Medical Centre

General Practitioner, Dr B

A Report by the

Health and Disability Commissioner

(Case 12HDC01291)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Table of Contents

Executive summary

1. On 15 September 2012 Mr A, was lifting heavy items. He began to suffer lower back pain. This increased in severity during the day to the extent that he had severe pains, cramping and "pins and needles" sensations down his right leg.

2. On 16 September 2012 Mr A went to an accident and medical centre, where he saw general practitioner Dr B. Mr A told Dr B that he had a history of back problems including that he had had a discectomy[1] carried out two years earlier following an injury.

3. Dr B advised HDC that, as Mr A was presenting with similar symptoms to those he had experienced with his previous injury, he concluded that Mr A had "a right 5th lumbar nerve sciatica,[2] moderate to severe in nature". Dr B prescribed diclofenac (an anti-inflammatory), Norflex tablets for the muscle spasms, and tramadol for pain. Dr B documented in Mr A's medical notes that he should return to physiotherapy and to his usual general practitioner, Dr C, for follow-up.

4. Dr B did not give Mr A advice to seek medical help immediately should his symptoms deteriorate or if new symptoms such as bladder or bowel problems should develop.

5. The medication prescribed by Dr B initially eased Mr A's pain. However, later that day the pain spread to both legs. He also developed numbness around his buttocks and groin and down the backs of both legs and the bottoms of his feet.

6. On 17 September 2012, Mr A went to the Emergency Department at the public hospital as he "was in excruciating pain". He was examined and a provisional diagnosis of suspected cauda equina syndrome was made.[3] Mr A was immediately referred to the Orthopaedic Department, and underwent emergency surgery that afternoon, where the diagnosis of cauda equina syndrome was confirmed.

7. On 25 September 2012 Mr A was transferred to another hospital for rehabilitation, where he remained an inpatient until 4 October 2012.

Findings

Dr B

8. Dr B had a duty to provide services to Mr A with reasonable care and skill. By failing to recognise the "red flags" in Mr A's presentation, investigate his symptoms, identify Mr A's possible diagnosis of cauda equina syndrome, and refer him for urgent clinical

[1] The surgical removal of a herniated disc.
[2] Pain caused by general compression or irritation of one of five spinal nerve roots.
[3] Cauda equina syndrome occurs when the nerve roots are compressed and paralysed, cutting off sensation and movement. Nerve roots that control the function of the bladder and bowel are especially vulnerable to damage.

review, Dr B breached Right 4(1)[4] of the Code of Health and Disability Services Consumers' Rights (the Code).

9. By not advising Mr A to seek further assistance immediately if his symptoms worsened, Dr B did not take all reasonable steps to ensure that Mr A was provided services in a manner that minimised the potential harm to him. Therefore, I find that Dr B breached Right 4(4) [5] of the Code.

10. Adverse comment was made regarding Dr B's failure to document Mr A's presentation comprehensively.

The accident and medical centre

11. Adverse comment was made about the accident and medical centre's failure to have in place a policy regarding the assessment and management of lower back pain. However, it was not found vicariously liable for Dr B's breaches of the Code.

Complaint and investigation

12. The Commissioner received a complaint from Mr and Mrs A about the services Dr B provided to Mr A at an accident and medical centre. The following issues were identified for investigation:

- *Whether general practitioner Dr B provided Mr A with an appropriate standard of care on 16 September 2012.*
- *Whether the accident and medical centre provided Mr A with an appropriate standard of care on 16 September 2012.*

13. An investigation was commenced on 4 September 2013.

14. The parties directly involved in the investigation were:

Mr A	Consumer/complainant
Mrs A	Complainant
Dr B	Provider
Accident and medical centre	Provider

Also mentioned in this report:

Dr C	General practitioner

15. Information was also reviewed from the public hospital/district health board.

[4] Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."
[5] Right 4(4) of the Code states: "Every consumer has the right to have services provided in a manner that minimises the potential harm to, and optimises the quality of life of, that consumer."

16. Independent expert advice was obtained from general practitioner (GP) Dr David Maplesden. (**Appendix A**).

Information gathered during investigation

Background

17. On 15 September 2012 Mr A, was lifting heavy items. He began to suffer lower back pain. This increased in severity during that day to the extent that he had severe pains, cramping and "pins and needles" sensations down his right leg. Mr A took diclofenac and ibuprofen, but that night he struggled to sit or lie down to sleep.

Presentation to the accident and medical centre

18. On 16 September 2012 Mr A went to the accident and medical centre,[6] arriving at 8.18am. Mr A was seen by a registered nurse at 9.00am, and he saw general practitioner (GP) Dr B shortly afterwards.[7]

Examination by Dr B

19. Mr A explained to Dr B the pain he had been experiencing after loading heavy wool packs the previous day. Mr A told Dr B that he had a history of back problems, including that he had had a discectomy carried out two years previously to remove a herniated disc following an injury.

20. Dr B advised HDC that Mr A "was very sore" and in obvious pain when he tried to move. Dr B recorded Mr A's presenting symptoms in the medical notes as: "Pain back, both buttocks R [right] thigh and down to foot, numb feeling. No bowel or urinary problems."

21. Dr B recorded his examination of Mr A as follows:

> "Back has scoliosis concave to R side, back movements flexion 70,[8] ext full, lat [lateral] flexion[9] full both ways. Tender down over the scar area, SLR [straight leg raise] 20 degrees both legs,[10] twitching muscles R thigh and calf. Paraesthesia in foot as well."

22. On 1 December 2012, after HDC requested information in relation to his care of Mr A, Dr B made the following retrospective addition to the electronic clinical notes:

> "The following was missed out of the examination below. Done but not recorded. When standing could take wt [weight] on his R leg. Could feel me examining his

[6] The medical centre is owned and operated by a group of general practitioners. It deals with common medical conditions and accidents, and is open from 8.00am to 11.30pm every day. Dr B worked there as a self-employed doctor.
[7] Dr B documented Mr A's electronic medical notes at 9.40am.
[8] Bending was limited to 70 degrees.
[9] Sideways movement.
[10] Each leg could be raised only to 20 degrees.

lower back down onto the sacrum. Weakness in R knee ext. weakness in dorsiflexion[11] of foot but no footdrop, weak ext of big toe."

23. Dr B made a further retrospective addition to these notes, in pen, noting that he had been unable to tell whether knee and ankle reflexes were present, as he could not test these properly because Mr A could not relax his muscles. This addition is not dated, but Dr B advised HDC that it was also added when he received the request from HDC for information. Mr and Mrs A confirmed that Dr B attempted to test these reflexes, but could not do so because Mr A could not relax his leg.

24. Dr B further advised HDC that the strength of Mr A's lower legs was also tested (although this is not recorded). Dr B acknowledged that he did not test for perianal sensation[12] or sphincter reflexes[13] and tone.

25. Dr B concluded that Mr A had "a right 5th lumbar nerve sciatica,[14] moderate to severe in nature". Dr B prescribed an anti-inflammatory (diclofenac), Norflex tablets for the muscle spasms, and tramadol for pain.

26. Dr B documented in Mr A's medical notes that he should consult his usual GP, Dr C, for follow-up. Dr B advised HDC that he gave this advice because Mr A had presented with symptoms similar to those he had experienced following his previous injury two years ago, and because Dr C was aware of Mr A's previous back problems.

27. Dr B advised HDC that, contrary to his usual practice, he did not give Mr A advice to seek medical help immediately should his symptoms deteriorate, or if new symptoms (such as bladder or bowel problems) developed, because on the day he assessed Mr A he felt under significant time pressure:

> "The [accident and medical centre] was extremely busy. [Mr A] had already waited an hour to be seen … I am not sure how long the consultation would have taken but by the nature of the problem and examination required it would have taken longer than usual. I would have been rushing to conclude the consultation and get on to the next patient (I was rushed in writing up my notes as well and missed out recording the examination results).
>
> …
>
> [Although] I do not think it [the accident and medical centre being busy] influenced my assessment of [Mr A], it would have influenced the medical notes recording and any advice to [Mr A] if he got any worse. … I did not think I rushed the examination of [Mr A] but once I had decided that he had a L5 sciatica I did rush giving him advice, as he has been in this situation before. My note recording was also rushed as I thought I would come back to finish them later during the day but I never did."

[11] Flexing upwards.
[12] Sensation/feelings around the anal area.
[13] Circular muscle that normally maintains constriction of a natural body passage or orifice.
[14] Pain caused by general compression or irritation of one of five spinal nerve roots.

Mr A's pain on returning home

28. Mr A advised HDC that the medication prescribed by Dr B eased the pain sufficiently for him to be able to lie down in bed. Later that day, however, the pain extended to both legs, and he had to move one leg forward to be able to urinate. Further, the "pins and needles" sensation increased to the point that he was numb around his buttocks and groin and down the backs of both legs and the soles of his feet.

Emergency Department

29. On 17 September 2012, Mr A went to the Emergency Department (ED) at the public hospital. Mr A advised HDC that he "was in excruciating pain with cramping and shooting pains in his legs" and, although he felt that his bladder was uncomfortably full, he was unable to urinate at all. The numb sensation was becoming worse, and Mr A could barely walk.

30. At 7.06am on 17 September 2012, Mr A was triaged as a category 3.[15] At 7.52am, an ED house officer saw Mr A's triage note on the computer screen. She advised HDC that she "immediately went to the waiting room and took Mr A into a bed space after up-triaging him to a category 2".[16]

Presumptive diagnosis of cauda equina syndrome

31. The house officer examined Mr A and documented that he had decreased sensation in his lower limbs, decreased perianal sensation,[17] decreased anal tone,[18] and brisk reflexes,[19] and that he was unable to urinate or pass a bowel motion. The house officer documented that she thought Mr A might be suffering from cauda equina syndrome (CES) and immediately contacted the on-call orthopaedic registrar.

32. At 8.30am Mr A had an urgent MRI scan. The radiology report documents: "A new very large central disk protrusion and extrusion are seen at L4–L5, causing marked compression of the thecal sac[20] in this region."

Surgery

33. At 1pm a consultant orthopaedic surgeon performed an L4 laminectomy[21] and a L4/5 discectomy on Mr A.

34. The presumed diagnosis of CES was confirmed. The orthopaedic surgeon advised HDC that after the surgery Mr A made "great" progress regarding relief of the leg pain, and that in the following days his back pain also improved. However, he continued to suffer from urinary retention, constipation, and perianal numbness.

---

[15] Triage category 3 means "[p]otentially life-threatening, potential adverse outcomes from delay > 30 min, or severe discomfort or distress".
[16] Triage category 2 means "[i]mminently life-threatening, or important time-critical".
[17] Decreased feeling around the anal area.
[18] Unable to use his anal muscles.
[19] Increased/exaggerated reflexes.
[20] A membrane that surrounds the spinal cord and the cauda equina (a bundle of nerve roots). The thecal sac is filled with cerebrospinal fluid.
[21] Surgery to remove the lamina — the back part of the vertebra that covers parts of the spinal canal.

Referral to another hospital

35. On 25 September 2012 Mr A was transferred to another hospital for rehabilitation, where he remained an inpatient until 4 October 2012. While there, Mr A received input from physiotherapists and occupational therapists.

36. On 6 November 2012 Mr A was reviewed at the first public hospital by an orthopaedic registrar who documented: "[Mr A] is back [doing exercise]. He doesn't get much pain anymore." The orthopaedic registrar also noted that Mr A still required some self-catheterisation to manage his bladder function, and suffered from muscle weakness.

Further information gathered during the course of the investigation

Dr B

37. Dr B advised HDC that he was "very sorry to hear about the horrific outcome" for Mr A. He apologised to the family "for any hurt they feel [he has] caused".

38. Dr B advised HDC that following these events, he further studied the "red flags" for CES (and other potentially serious conditions). The red flags are primarily: saddle numbness,[22] urinary retention,[23] faecal incontinence, and neurological symptoms (resulting in abnormal functioning of the lower limbs). Regarding saddle numbness, Dr B acknowledged that he "did not think this was present, but unfortunately [he] did not do the appropriate perianal, perineal or sphincter tests to confirm this was so". He further advised:

> "I had thought that the perianal examination was only required if there was a history of loss of sphincter control but now realise that it should also be done in patients with serious or progressive neurological findings."

39. Dr B advised HDC that there were no problems with urinary retention and faecal incontinence at the time of the consultation with Mr A.

40. In terms of neurological problems in the lower limbs, Dr B advised HDC:

> "This part of the examination should have alerted me to the seriousness of [the] problem. The pain was worse when he tried to lie down and rest and the neurological examination, even if it was not complete, showed that he had at least 3 nerve roots involved and possibly more if the perianal examination had been done."

41. Dr B advised that he felt his biggest failure was not testing for buttock and perianal paraesthesia. However, Dr B noted that, "as [Mr A] did not have bladder or bowel problems at the time the patient was seen, [he] felt some reassurance".

42. Dr B also advised: "This complaint has been a salutary lesson to me. I need to learn from this experience." He said that he has used the case anonymously at a peer review group to educate the group on the issues around CES.

[22] A loss of sensation restricted to the area of the buttocks and perineum.

[23] Inability to empty the bladder properly.

43. Dr B provided HDC with a copy of a certificate of completion for a course on acute back pain, which he completed since these events, attaining a score of 100%.

The accident and medical centre

44. The accident and medical centre advised HDC that the doctors working at the facility are generally vocationally registered GPs who contract independently to provide rostered cover. As such, they are responsible for their own professional development, including continuing medical education and peer review.

45. Further, the accident and medical centre advised that it has no policy in place around the assessment and management of lower back pain.

Response to provisional opinion

46. Mr and Mrs A, the accident and medical centre and Dr B were given the opportunity to respond to relevant sections of my provisional opinion. Dr B responded and his responses have been incorporated into the report where relevant.

47. Dr B accepted the findings, and advised that he has taken steps to improve his practice. He submitted that one of those steps includes having an external party review his record keeping.

48. The accident and medical centre also accepted the findings.

Opinion: Dr B

Examination and diagnosis — Breach

49. Mr A had a history of back problems and had previously had a discectomy to remove a herniated disc. On 15 September 2012, after lifting heavy items, Mr A experienced lower back pain, which became progressively worse during the day.

50. On 16 September 2012 Mr A consulted general practitioner Dr B at the accident and medical centre, reporting pain and "pins and needles". Dr B examined Mr A but failed to test for perianal sensation or sphincter reflexes and tone. Dr B considered that Mr A had "a right 5th lumbar nerve sciatica, moderate to severe in nature, similar to his previous injury two years ago". Dr B failed to recognise that Mr A had symptoms that suggested the possibility of cauda equina syndrome.

51. My in-house clinical advisor, vocationally registered GP Dr David Maplesden, advised me that it is common knowledge among medical practitioners that CES is a serious complication of back pain, which should be recognised by all practitioners.

52. Dr Maplesden further advised that Mr A displayed several "red flags" that pointed to CES, including pain radiating into the lower extremities, numbness, pins and needles, motor weakness and loss of reflexes. Dr Maplesden considers that Dr B failed to recognise the "red flags" in Mr A's presentation.

53. Dr Maplesden stated that Dr B asked appropriate questions regarding urinary and bowel issues, and was reassured that there were no signs of such issues at the time of his assessment. However, Dr Maplesden advised that, while Mr A's symptoms were somewhat reassuring in terms of absence of urinary or bowel symptoms, he did have fairly widespread neurological symptoms and signs, including bilateral buttock pain and "numbness". Dr Maplesden considered that "a more careful review of the symptoms and history" would have alerted Dr B to the possibility of CES, the need for further testing of perianal sensation and tone, and the probable need for an emergency referral.

54. Dr Maplesden also advised that, while it is relatively common to see patients with back pain and unilateral radiculopathy,[24] CES is a very uncommon presentation in primary care, and is frequently misdiagnosed in both primary and secondary care.

55. The New Zealand Guidelines Group's "New Zealand Low Back Pain Guidelines 2003" states: "Cauda Equina Syndrome is a medical emergency and requires urgent hospital referral. … All patients with symptoms or signs[25] of Cauda Equina Syndrome should be referred urgently to hospital for orthopaedic or neurological assessment."

56. Dr B advised HDC that he has learnt from this experience and now knows to test for buttock and perianal paraesthesia "in patients with serious and progressive neurological findings".

57. Dr B had a duty to provide services to Mr A with reasonable care and skill. By failing to recognise the "red flags" in Mr A's presentation, and to investigate his symptoms, identify his possible diagnosis of CES, and refer him for urgent clinical review, Dr B breached Right 4(1) of the Code.

Follow-up advice — Breach

58. Dr B told Mr A to treat his pain with bed rest, and prescribed medication to treat inflammation, muscle spasms, and pain. Dr B did not give Mr A advice to seek medical help immediately should his symptoms worsen, or if new symptoms (such as bladder or bowel problems) developed. Rather, he advised Mr A to return to his usual GP for follow-up.

59. Dr Maplesden advised me that Dr B should have warned Mr A of the need to seek further assistance, as an emergency, should he develop increasing neurological symptoms, bowel symptoms or bladder symptoms. Dr Maplesden said that this advice should have been given at the time of Dr B's assessment of Mr A, even if he felt that acute CES was not likely.

60. Dr B's failure to give adequate follow-up advice regarding development of further CES symptoms was suboptimal care.

61. By not advising Mr A to seek further assistance immediately if his symptoms worsened, Dr B did not take all reasonable steps to ensure that Mr A was provided

[24] The set of conditions with which Mr A presented, where one or more nerves are not working properly, and affecting one side of the body in particular.
[25] See paragraph 38 for a description of the symptoms or signs of CES.

services in a manner that minimised the potential harm to him. Therefore, I find that Dr B breached Right 4(4) of the Code.

Poor record-keeping — Adverse comment

62. On 1 December 2012, Dr B retrospectively added several points to the clinical notes regarding his examination of Mr A on 16 September 2012. Some of these amendments were typed, and some were made in pen. Dr B acknowledged that he did not record that he tried to test the strength of Mr A's lower legs.

63. Dr B had a professional and legal responsibility to keep "clear and accurate patient records that report relevant clinical findings, decisions made, information given to patients, [and] any drugs or other treatment prescribed".[26]

64. The Medical Council of New Zealand states in its best practice guidelines on "The maintenance and retention of patient records" that patient records are to be made "at the same time as the events you are recording or as soon as possible afterwards".[27]

65. As I have stated previously, the importance of good record-keeping cannot be overstated.[28] To ensure continuity of care, handwritten and computerised notes need to be integrated appropriately.[29] When Dr B made his original clinical notes, he failed to document his examination accurately, and therefore felt he had to add to the notes (some 10 weeks later, and after a complaint had been made) to document more accurately what had taken place.

66. I note that Dr B advised that the after-hours clinic was extremely busy that day, and that he "was rushed in writing up [his] notes … and missed out recording the examination results". I also note that Dr B has since reviewed his record keeping and taken steps to improve his practice. Nonetheless, I am critical that, on this occasion, the additions were made some 10 weeks after his examination of Mr A, after receiving a letter from HDC. I expect it to be well within the capability of all general practitioners to devise and employ effective record-keeping strategies to deal with busy situations such as this.

Opinion: The accident and medical centre — Adverse comment

67. Under section 72(3) of the Health and Disability Commissioner Act 1994 (the Act), an employing authority may be vicariously liable for acts or omissions by an agent of that employing authority.

[26] MCNZ, "The maintenance and retention of patient records", August 2008. Available from www.mcnz.org.nz.
[27] MCNZ, "The maintenance and retention of patient records", August 2008. Available from www.mcnz.org.nz.
[28] Opinion 10HDC00610, at page 10.
[29] Opinion 09HDC01765.

68. When Dr B was working at the accident and medical centre he was doing so in his capacity as a vocationally registered GP providing contracted services. The accident and medical centre advised HDC that Dr B was responsible for his own professional development, and that it did not have in place any policies providing guidance on the assessment and management of patients presenting with lower back pain.

69. I consider that Dr B's failure to recognise the "red flags" in Mr A's presentation, and to investigate his symptoms, identify a possible diagnosis of CES, and refer Mr A for urgent clinical review, and also Dr B's failure to provide adequate follow-up advice, were matters of individual clinical judgement. I therefore do not consider that the accident and medical centre is liable for those failures.

70. However, I am critical that the accident and medical centre had no policy in place regarding this challenging medical issue. In my view, the accident and medical centre should have policies in place to provide clinical support and guidance for its rostered GPs. In particular, I consider that the accident and medical centre should have in place a policy regarding the assessment and management of lower back pain. The accident and medical centre should also ensure that all doctors are adequately orientated and trained with regard to the policies, before they provide services at the accident and medical centre.

Recommendations

Dr B

71. Dr B has provided a written apology to Mr A.

72. I recommend that the Medical Council of New Zealand consider whether a review of Dr B's competence, in regard to his diagnostic skills and record-keeping, is warranted.

The accident and medical centre

73. I recommend that the accident and medical centre develop and implement a policy regarding the assessment and management of lower back pain, for use by doctors providing services at the accident and medical centre. A copy of this policy should be sent to this Office within three months from the date of this report.

Follow-up actions

- A copy of the final report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Medical Council of New Zealand, the Royal New Zealand College of General Practitioners, and the District Health Board, and they will be advised of Dr B's name.
- A copy of the final report with details identifying the parties removed, except the expert who advised on this case, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent clinical advice — Dr David Maplesden

"Thank you for providing this file for review. I have examined the available documentation: complaint from [Mrs A] regarding the management of her husband, [Mr A] by [Dr B]; response from [Dr B]; GP notes from the accident and medical centre; response from [the] DHB; [the accident and medical centre's] clinical notes. [Mrs A] states her husband developed acute back pain on 15 September 2012 after [lifting heavy items]. *He had severe pains and cramping all down one leg* [right leg] *and could not sit or lie down to sleep that night.* [Mr A] saw [Dr B] at [hospital] the following morning 16 September 2012 (a Sunday) and recounted the injury and pain and that he *had 'pins and needles' sensations all down his right leg and that he felt 'funny' around his buttocks.* There was no disturbance in urinary function at this point. [Dr B] stated he could not adequately assess [Mr A's] reflexes because he *would not relax his leg properly.* [Dr B] was aware [Mr A] had required a lumbar discectomy two years previously, and suggested he see his GP next morning and get a referral to a specialist. He prescribed [Mr A] Tramadol, Norflex and an anti-inflammatory. During the course of the day [Mr A] rested and gained some relief with the medication prescribed. However, the pain began to radiate down both legs, he had some difficulty passing urine, the numbness increased to involve both groin and buttocks and by the following morning he was unable to pass urine although was aware his bladder was full. He attended [the] ED that morning where cauda equina syndrome (CES) was suspected, confirmed on urgent MRI and emergency surgery performed the same day. [Mrs A] is concerned her husband was not adequately assessed by [Dr B], particularly in light of his numbness, and they were not warned of the possibility of CES if the symptoms affected both legs or there were urinary symptoms, or what to do if such symptoms occurred. [Mr A] currently has significant residual symptoms.

2. GP notes and response

(i) [Dr B] has noted an addendum/qualification to the contemporaneous notes, dated 1 December 2012. He states … *done but not recorded. When standing could take wt on his R leg. Could feel me examining his lower back down onto the sacrum. Weakness in R toe ext, weakness in dorsiflexion of foot but no footdrop, reflexes — both KJ and AJ unable to tell if present or not as patient could not relax.*

(ii) Contemporaneous notes recount the history of back injury the previous day and *gradually as day went on got more and more painful … pain back, both buttocks R thigh and down to foot, numb feeling, no bowel or urinary problems.* Past history of previous discectomy noted. Examination findings include observation of a scoliosis concave to the right, *back movements flexion 70, ext full, lat flexion full both ways, tender down over scar area, SLR 20 degrees both legs, twitching muscles R thigh and calf, parasthesiae in foot as well. For diclofenac, norflex and tramadol, return to physio and GP for follow.*

(iii) In his response, [Dr B] notes [Mr A] *complained of pain in his lower back, both buttocks and down the right thigh to his right foot. He also had a numb feeling in these areas.* He notes he tested the power and reflexes in [Mr A's] lower limbs (the

latter confirmed by the complainant) but failed to record these findings. He did not examine [Mr A's] perianal sensation or sphincter tone, assuming this was required only if disturbance in bowel or bladder function was suspected. He made a diagnosis of *right 5th lumbar nerve sciatica, moderate to severe in nature, similar to his previous injury two years ago.*

(iv) [Dr B] has admitted not giving [Mr A] advice to return immediately should his symptoms worsen, or new symptoms develop. It is his usual practice to give such advice, but he felt under significant time pressure the day he assessed [Mr A] as the medical centre was particularly busy. He has outlined the research he has undertaken since learning of the incident, and feels assessment of [Mr A's] anal tone and sensation may have been warranted given the multiple nerve roots involved on initial assessment, and this may have led to an earlier diagnosis and treatment. He has outlined an intention to use this case (anonymised) in a peer group education session to increase awareness of CES presentations and optimising a time-limited back examination.

3. The DHB response is consistent with the ED hospital notes. The ED officer saw [Mr A] at 0752hrs on 17 September 2012. *He presented two days following a back injury after developing numbness and being unable to pass urine for the previous twelve hours.* The recorded history implies bilateral lower limb symptoms from the time of injury and *last night developed numbness in both legs, spreading up into groins/backside up to level of hips …*On examination there was decreased sensation in both lower legs, decreased peri-anal sensation, decreased anal tone, mild weakness in the right leg and *brisk reflexes.* Bladder ultrasound showed 400ml and [Mr A] was catheterised later that morning. Urgent MRI scan was undertaken at 0830hrs and confirmed a central L4–5 disc protrusion and urgent decompression discectomy was performed at 1300hrs by [a surgeon] as soon as a theatre became available. Comment: The correct diagnosis was made in a timely manner by the ED officer and investigated with appropriate urgency. Surgical management was undertaken also in a timely manner, optimising [Mr A's] chances of recovery. Management was consistent with current recommendations (see below).

4. The New Zealand acute low back pain guidelines[1] state: *Features of Cauda Equina Syndrome include some or all of: urinary retention, faecal incontinence, widespread neurological symptoms and signs in the lower limb, including gait abnormality, saddle area numbness and a lax anal sphincter … Cauda Equina Syndrome is a medical emergency and requires urgent hospital referral … All patients with symptoms or signs of Cauda Equina Syndrome should be referred urgently to hospital for orthopaedic or neurosurgical assessment.* There are few surgical emergencies in the treatment of back pain but this is one that, in my opinion, is common knowledge and should be recognised by all GPs. While [Mr A's] symptoms were somewhat reassuring in terms of absence of urinary or bowel symptoms, he did have fairly widespread neurological symptoms and signs, including bilateral buttock pain and 'numbness' which should have alerted [Dr B] to the possibility of CES (and further testing of peri-anal sensation and tone) and probably emergency referral, particularly

[1] NZGG. *New Zealand Acute Low Back Pain Guidelines* 2003

if objective decrease in saddle sensation, or sphincteric weakness, was confirmed[2]. A warning to [Mr A] of the need to seek further assistance as an emergency should he develop increasing neurological symptoms or bowel or bladder symptoms should have been given if [Dr B] had felt acute CES was not likely at the time of the examination.

5. As a basis for my further comments I attach extracts from a recent clinical article on cauda equina syndrome (CES)[3], and another comprehensive article on the subject[4] noting the medicolegal ramifications of the condition which leads to frequent claims for mismanagement. Both articles concur with the concept of incomplete CES (CES-I) where significant subjective symptoms may be more prominent than objective symptoms. Both articles emphasise the need for urgent investigation and intervention with possible CES-I when good neurological recovery is likely, with less emphasis on urgency with obvious complete CES when neurological recovery, even with prompt decompression, is much less likely.

(i) Cauda equina syndrome (CES) is a rare condition with a disproportionately high medicolegal profile and figures significantly in terms of medicolegal costs.

(ii) CES is usually characterised by the following so-called 'red flag' symptoms:

- Severe low back pain (LBP)
- Sciatica — often bilateral but sometimes absent — especially at L5/S1 with an inferior sequestration
- Saddle and genital sensory deficit
- Bladder, bowel and sexual dysfunction.

(iii) The commonest cause of difficulties in passing urine in patients with lumbar degenerative disorders is pain and not a cauda equina syndrome. Despite that, where a patient with a lumbar degenerative disorder has difficulties in passing urine, that problem cannot always safely be attributed to pain alone.

(iv) Three types of cauda equina syndrome have been identified:

- Rapid onset without a previous history of back problems.
- Acute bladder dysfunction with a history of low back pain and sciatica.
- Chronic backache and sciatica with gradually progressing CES.

[2] A 2009 BPAC article on lower back pain advised that any of the following clinical findings warranted emergency referral for exclusion of CES: Sphincter disturbance e.g. recent bladder dysfunction (retention, overflow incontinence); Gait disturbance: severe and/or progressive neurological deficit in lower extremities; Saddle anaesthesia: diminished sensation over the buttocks, posterior-superior thighs and the perineal region in the 'saddle' distribution … The diagnosis is usually possible from the history and examination. Always err on the side of caution rather than risk leaving your patient with permanent disability. Reference available at: http://www.bpac.org.nz/magazine/2009/june/lowbackpain.asp

[3] Todd N. An Algorithm for Suspected Cauda Equina Syndrome. Ann R Coll Surg Engl. 2009; 91(4): 358–359.

[4] Gardner A, Gardner E et Morley T. Cauda equina syndrome: a review of the current clinical and medico-legal position. Eur Spine J. 2011 May; 20(5): 690–697.

Within these groups, CES may be complete or incomplete and its onset may be either acute within hours or gradual over weeks or months.

(v) Low back pain and sciatica are of course common, but bilateral neurogenic sciatica should always ring alarm bells. An important distinction is whether, at any given time, CES is complete or incomplete in relation to urinary function and perineal sensation. These are both relatively easy to assess — urinary dysfunction is often the most distressing sequel of CES. When the syndrome is incomplete (CES-I), the patient has urinary difficulties of neurogenic origin, including altered urinary sensation, loss of desire to void, poor stream and the need to strain. Saddle and genital sensory deficit is often unilateral or partial. The complete syndrome (CES-R) is characterised by painless urinary retention and overflow incontinence. There is usually extensive or complete saddle and genital sensory deficit.

(vi) There are a group of patients at risk of developing a cauda equina syndrome where there are 'red flags' including bilateral radicular pain and/or bilateral sensory disturbance, bilateral motor weakness and/or bilateral loss of reflexes. These patients do not have a cauda equina syndrome but they are at high risk. Patients who do not have a cauda equina syndrome but who are at high risk should have urgent MRI; if there is a large central disc prolapse, they should have urgent surgery to prevent the development of a cauda equina syndrome [in hindsight, [Mr A] may have been in this category when he first presented to [Dr B]].

(vii) The outcome for patients with CES-I at the time of surgery is generally favourable, whereas those who have deteriorated to CES-R by the time the compression is relieved have a poorer prognosis — although around 70% have a socially acceptable long-term outcome.

(viii) If a patient has CESI there should be urgent, or possibly emergency, surgery to treat the patient prior to the development of CESR because outcomes in patients treated at the time of CESI are generally favourable, whereas outcomes following bladder paralysis are less favourable. [[Mr A] still had some bladder sensation (awareness of fullness and no incontinence) but was in a degree of retention when assessed in [the] ED, and was likely to have had CES-I. His management, with emergency surgery, was therefore consistent with expected practice].

(ix) There is debate as to whether earlier surgical treatment following bladder paralysis (CES-R) leads to better outcomes. Some believe that there is no benefit to prompt decompressive surgery following CESR. Others believe that there is a window of opportunity following CESR. That window of opportunity may extend to 24 h after the onset of CES-R, or it may extend to 48 h after CES-R.

(x) Taking all of this into account, the following algorithm may be helpful:

a. A complaint of difficulty in passing urine particularly in the context of severe pain, with no subjective or objective neurological deficit: admit, pain relief and MRI the following day at the district general hospital (DGH). Very few patients will have a central disc prolapse. Those that do can be referred to the local spinal surgery service.

b. Those who are at high-risk of developing a cauda equina syndrome 'red flags' but who have no features of a cauda equina syndrome: the same management as above.

c. Patients with CES-I (i.e. subjective or objective evidence of CES who do not have bladder paralysis): emergency MRI either at the DGH or at the local spinal service with urgent or emergency surgery to decompress the cauda equina prior to the onset of CESR. There is on-going debate as to whether that surgery should be carried out as an emergency, out-of-hours, or on the next day-time list.

d. If, at the point of first assessment, the patient has bladder paralysis (CES-R), the decision (as to whether urgent or emergency MRI and/or surgery is required) depends upon the surgeon's assessment of the medical literature. If the surgeon takes the view that there is no benefit to urgent decompression following bladder paralysis, there is no urgency for diagnosis and treatment. However, the fact that there is uncertainty in this area and the fact that some studies have suggested a window of opportunity extending to 24 h (or possibly 48 h) after the onset of CES-R, suggests that perhaps the precautionary principle should be adopted and patients should be decompressed urgently on the basis that there is scientific uncertainty. Whether such patients should be operated out-of-hours as a true emergency is also a matter of debate.

6. Comments

(i) There were deficiencies in [Dr B's] management of [Mr A] and he has acknowledged these. The failure to record his neurological observations was a mild departure from expected practice. The failure to recognise the 'red flags' in [Mr A's] presentation, particularly the subjective description of 'saddle area' (buttock) numbness, and to further assess these, was at least a moderate departure from expected practice. The failure to give advice regarding development of more classic CES symptoms was a moderate departure from expected practice. The failure to refer [Mr A] for urgent clinical review was a moderate departure from expected practice with respect to the comment on 'red flags' above. [Dr B] had made a diagnosis of right sided disc L5 prolapse with radiculopathy and his management was appropriate to this diagnosis — therefore I cannot say the failure to refer immediately was a severe departure from expected practice. However, more careful review of the symptoms and history would have indicated [Mr A] was at least at risk of CES and required urgent assessment. Mitigating factors are: the fact that while it is relatively common to see patients with back pain and unilateral radiculopathy, CES is a very uncommon presentation in primary care, and is not infrequently misdiagnosed in both primary and secondary care (hence the medico-legal concerns); the fact that [Dr B] asked appropriately regarding sphincter disturbance and was reassured there were no signs of this at the time of his assessment (the urinary symptoms developing several hours later) — sphincteric disturbance as a presenting symptom of CES has perhaps been over-emphasised in the past at the expense of other 'red flags' which, as illustrated in the discussion above, may be more relevant in terms of diagnosis of CES-I.

(ii) [Mr A] may have had a better outcome from his surgery had he undergone surgical decompression of his disc prolapse on 16 September 2012 following review by [Dr B]. This assumes his condition was recognised in ED as being possibly

suggestive of CES-I, and an urgent MRI undertaken, despite the absence (at that time) of any subjective complaint of sphincteric disturbance. [Dr B] has reviewed this case in detail and acknowledged where his management might have been improved, and is planning to provide peer education on the early recognition and appropriate management of CES. I think these are reasonable remedial actions, although I think a written apology to the patient for any distress caused by his role in the delayed diagnosis might also be appropriate.

(iii) […] I note in a further completed case, a breach finding was made when the clinician made a diagnosis of CES but failed to organise appropriate urgent intervention (this patient also had urinary symptoms).[5] This is a somewhat different issue to the failure to make the initial diagnosis of CES."

Further expert advice

Dr Maplesden was asked to review the recommendation that the accident and medical centre develop and implement policy regarding the assessment and management of lower back pain, for use by doctors providing services at the accident and medical centre. He advised:

> "I think it is reasonable that there is some type of algorithm available that represents best practice for management of acute back pain, and that practitioners are aware of/have ready access to. Such an algorithm already exists in the NZGG/ACC New Zealand Acute Low Back Pain Guide (2004) (http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_ip/documents/internet/wcm002131.pdf) and it might be equally reasonable to suggest the [accident and medical centre] 'ensures its members are familiar with, and have ready access to, the [publication]' or that the publication is used as a basis for the development of the process document you talk about. There is no need for them to 'reinvent the wheel' when there are adequate local evidence-based guidelines available."

[5] 10HDC00454, 29 June 2012.