

**IN THE DISTRICT COURT  
AT WELLINGTON**

**I TE KŌTI-Ā-ROHE  
KI TE WHANGANUI-A-TARA**

**[2023] NZACC 42**

**ACR 56/22**

UNDER	THE ACCIDENT COMPENSATION ACT 2001
IN THE MATTER OF	AN APPEAL UNDER SECTION 149 OF THE ACT
BETWEEN	TANIA BOULTON Appellant
AND	ACCIDENT COMPENSATION CORPORATION Respondent

Date of Hearing: 12 September 2022  
Heard at: Auckland/Tamaki Makaurau

Supplementary  
Memoranda/evidence  
received: 7 February 2023

Appearances: Mr P Schmidt for the appellant  
Mr A Butler for the respondent

Date of Judgment: 21 March 2023

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**RESERVED JUDGMENT OF JUDGE D L HENARE  
[Treatment Injury ss 20, 26, 32 and 33, Accident Compensation Act 2001]**

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**Introduction**

[1] The appellant, Tania Boulton claims cover for advanced right renal artery stenosis as a treatment injury, based on a failure to treat early-stage renal stenosis caused by fibromuscular dysplasia (FMD).

[2] The issue in this appeal is whether the progression of right renal artery stenosis is a treatment injury.

[3] Ms Boulton's position is that progressive renal stenosis caused by FMD is treatable and it is likely Ms Boulton would have been offered treatment to halt or reverse the stenosis to try and save her right renal artery and right kidney. The failure to provide such treatment over 13 years was a material cause of the stenosis progressing, becoming severe, and eventually destroying the right renal artery and kidney. Ms Boulton says on that basis, cover for advanced right renal artery stenosis should be granted.

[4] The Corporation's position is that cover for progression of renal stenosis was rightly declined because the narrowing of the right renal artery was a natural and inevitable consequence of a non-covered pre-existing health condition. Ms Boulton was granted cover for the right renal artery and right kidney atrophy leading to nephrectomy. Cover was granted on the basis these conditions are physical injuries that resulted from the failure to undertake the additional diagnostic test, because the opportunity for renal angioplasty was missed.

### **Post hearing**

[5] Following the hearing, the Court raised questions for counsel in clarification of the position of each party and the statement of agreed facts as filed. Supplementary submissions were filed together with a further bundle of documents.

### **Agreed facts**

[6] Mr Schmidt and Mr Butler filed an agreed statement of facts as follows.

[7] On 19 September 2003, Ms Boulton, then aged 28 years old, was admitted to Timaru Hospital after suffering from frontal headaches and neck pain for two weeks. Ms Boulton was identified as having a clinical history of hypertension. The attending physician recorded the results of the renal ultrasound as normal.

[8] On 20 October 2003, Dr Burton, the consultant physician, reported that Ms Boulton presented with a severely high blood pressure. He noted that investigations for secondary causes of Ms Boulton's raised blood pressure had thus far returned normal results. Dr Burton commented that if the results of her renal CT scan were negative, he would diagnose Ms Boulton with essential hypertension (or primary hypertension, which, by definition, has no identifiable cause).

[9] On 6 November 2003, Dr Brew, a radiologist, reviewed Ms Boulton's renal CT scan and observed that it appeared normal, there being no evidence of scarring, other pathology or other abnormality in the renal arteries.

[10] On 17 November 2003, Dr Burton ruled out secondary cause hypertension based on the negative results of the special investigations and the normal CT renal angiogram results, diagnosing Ms Boulton with essential hypertension.

[11] Between 2005 and 2016, Ms Boulton regularly saw Dr Hills, a consulting physician, at Timaru Hospital. The consultations concerned, *inter alia*, management and treatment of her hypertension. The medical evidence records that during this period Ms Boulton's blood pressure continued to increase. She also continued to experience a range of symptoms including headaches and paraesthesia.

[12] On 22 February 2016, Ms Boulton was admitted to Timaru Hospital, suffering from chest pain, numbness in her extremities and severely high blood pressure.

[13] On 19 May 2016, Ms Boulton underwent a CT scan. Based on the results of the CT scan, Dr Hills identified that Ms Boulton had an atrophic right kidney and right renal artery fibromuscular dysplasia (FMD).

[14] On 15 June 2016, Dr McGregor, a nephrologist, identified retrospectively that the FMD had been present in Ms Boulton's CT scan from 2003 and that there had been a failure to diagnose FMD. In this report, Dr McGregor also recommended nephrectomy of the affected kidney.

[15] Subsequently four providers were asked to review the CT scan reported in 2003 to see whether on a blind peer review basis they would identify the FMD. None of the four identified FMD on the scan.

[16] However, the Corporation subsequently received advice that an additional diagnostic test could have been, and should have been, undertaken and had it been undertaken it is more likely than not that Ms Boulton's FMD would have been detected. Had it been detected, then atrophy of Ms Boulton's right kidney (and right renal artery) may not have occurred.

[17] On 8 September 2016, Dr Allawati, a nephrologist, diagnosed secondary cause hypertension caused by Ms Boulton's FMD. His report noted that failure to treat the FMD in a timely manner had caused Ms Boulton's hypertension to become treatment-resistant and caused the severe global atrophy of her right kidney.

[18] The Corporation does not accept the diagnosis of treatment resistant hypertension made by Dr Allawati is accurate. The medical advice it has received is that Ms Boulton's hypertension is not treatment-resistant, but rather persistent. This is addressed in the reports prepared by medical advisor Dr Garry Brown (dated 9 February 2021) and renal specialist Dr Hay (dated 9 November 2021).

[19] It is accepted that there is a causal link between the failure to correctly diagnose FMD in 2003 (due to the failure to undertake the additional diagnostic test) and Ms Boulton's right kidney atrophy.

[20] In a decision dated 13 February 2017, the Corporation granted cover for atrophy of the right kidney requiring nephrectomy.

[21] In a decision dated 16 February 2021, the Corporation declined cover for progression of right renal artery stenosis which was upheld at review.

### **Medical evidence**

[22] The review decision notes a complex and lengthy medical history for Ms Boulton, which is recorded in an earlier judgment of this Court.<sup>1</sup> FMD was not a covered injury because it was an underlying health condition at the time of Ms Boulton's renal scan in 2003.<sup>2</sup> Judge Walker described the aetiology of FMD and the resultant renal stenosis based on the medical evidence before her:

[149] It is accepted that Ms Boulton suffers from FMD. This is a condition that causes extra cells to grow within the walls of arteries. Arteries are blood vessels that carry blood to the heart from the rest of the body. The extra cell growth narrows the arteries allowing less blood to flow through them. One of the symptoms is it can lead to reduced blood flow to the kidneys. The causes of FMD appear to be unknown.

[150] There is no evidence before the Court however that this condition is caused by any physical injury.

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<sup>1</sup> *Boulton v Accident Compensation Corporation* [2018] NZACC 133.

<sup>2</sup> *Ibid*, at [12] – [23].

It is accepted that this resulted in stenosis (areas of narrowing), in the renal artery ultimately effecting the renal blood pressure but this is not of itself a physical injury caused by an accident.

[23] In his report dated 1 December 2016, Dr Irvine, treating consultant nephrologist responded to questions whether the delay in diagnosis resulted in a physical injury over and above the natural progression of her disease. He stated:

Fibromuscular dysplasia is a condition that leads to narrowing of the artery and therefore the kidney will have a reduced/impaired blood flow. This reduced blood flow can result in secondary hypertension **and if the narrowing is severe and progressive, then this can result in atrophy of the kidney. Fibromuscular dysplasia can be reduced through radiological intervention and angioplasty of the renal artery. In my opinion a delay in diagnosing and intervening with fibromuscular dysplasia could lead to chronic hypertension and renal atrophy...**

[Emphasis added]

[24] Dr Irvine replied to the question whether earlier treatment would have prevented Ms Boulton from requiring a nephrectomy. He stated:

It is likely that earlier intervention and continue follow up (possibly requiring further intervention) is likely to have prevented the development of renal atrophy, subsequent treatment resistant hypertension and therefore the need for a nephrectomy.

[25] Finally, Dr Irvine noted Ms Boulton had minimal comorbidities and he did not believe that any of these had contributed to her renal atrophy, treatment resistant hypertension and need for nephrectomy.

[26] In a report dated 1 February 2017, Dr Milne, radiologist stated his review of the imaging of November 2003 did reveal evidence of FMD in the right renal artery, but this was difficult to see without the benefit of hindsight. Dr Milne facilitated a blind review of the 2003 scan by four other radiologists. They did not detect FMD in the right renal artery. It was Dr Milne's opinion in a further report that a Doppler assessment should have been undertaken. Further, that angioplasty would have treated renal artery stenosis.

[27] In his report dated 25 July 2017, Mr Hills, consultant physician noted that retrospective review of the 2003 scan, indicated renal artery disease was present at this time. It was as result of longstanding renal artery stenosis that "Ms Boulton developed an atrophic, essentially non-functioning right kidney". In respect to injury, he said "the real injury" is the missed opportunity to manage hypertension. Mr Hills stated:

The missed opportunity to treat this lady's hypertension means that Mrs Boulton's blood pressure will never effectively come under pharmacological control. Her current blood pressure is what would be described as severe hypertension.

Persistent and severe hypertension is a significant health risk, and Mrs Boulton could be expected to suffer significant future disability related to it.....

There is also the real threat of prematurity of onset of particular medical conditions, including heart disease strokes, damage to the remaining kidney, leading to potential requirements for dialysis, as well as risks to eye sight. There is also increased propensity to epistaxis, and headaches, increased anxiety is a real consequence of the situation as well.

There is every reason to believe Ms Boulton's life trajectory would have been very different given earlier intervention to her right artery stenosis.

[28] In her report dated 20 August 2017 provided as part of the initial investigation of the claim, Dr Hay, renal physician, identified no physical injuries other than to the kidney. However, she indicated Ms Boulton suffers a cardiovascular risk. Dr Hay stated:

**Ms Boulton is fortunate to have escaped other physical injuries from her severe treatment-resistant hypertension during the 13-year period (2003-2016) when she was denied appropriate radiological intervention to her potentially salvageable right kidney. Sadly, the right kidney has become atrophic and ultimately required nephrectomy due to the missed diagnosis.** She has had a normal ophthalmology review on 11.3.16 and no retinal abnormalities were identified. She has had a normal CT head scan in 2014. A cardiac echo on 5.5.16 shows "a hint of LVH" only, as noted in Dr Hills' letter dated 5.5.16. There have been no cardiovascular sequelae thus far. To answer Question Three, **there are no identified physical injuries other than to the right kidney.** Questions Four, Five, and Six are thus not applicable.

I note the letter in file dated 25.7.17 from Consultant Physician Dr Hills. I agree with the points he has made. Although **I am unable to identify any new physical injury I would like to emphasise that she is now at substantially increased risk for cardiovascular events now and in the future as a direct consequence of her severe hypertension. If her fibromuscular dysplasia had been correctly identified by the Radiologist in 2003 then this would have provided an opportunity for early intervention via renal artery angioplasty (the treatment of choice) that could have allowed preservation of her right kidney and potentially minimised or even eliminated the requirement for lifelong antihypertensive medication.** Her cardiovascular risk in that circumstance would be the same as the general (smoking) population. In contrast, her cardiovascular risk now is vastly increased compared to an age-matched population. She is also exposed to potential adverse effects from multiple medications now and in the future and has demonstrated a general intolerance to medications historically. In addition, there is the emotional trauma associated with delayed/missed diagnosis, loss of an organ, and uncertainty regarding future health - all of which is difficult to quantify.

[Emphasis added]

[29] Following Dr Hay's report, Mr Hills reported again in January 2018. He discussed hypertension, noting "Ms Boulton has suffered from severe hypertension for a prolonged time from a very much younger age ...". Mr Hills stated:

...I would argue that the ACC have not fully accepted cover for atrophy of the right kidney due to the delayed diagnosis and had become confused with respect to what is happening. The nephrectomy is but part of the consequences of the problem, and the atrophic kidney is not the actual problem, but a consequence of the missed diagnoses of the problem, the renal artery stenosis.

[30] Dr Brown, GP and medical adviser to the Corporation, reviewed the medical reports as part of the treatment injury investigation. In his report dated 9 February 2021, Dr Brown stated:

Conclusion:

**The underlying disease of FMD caused the right renal artery to become stenosed.**

**The question at issue is whether the failure to diagnose this condition in 2003 has led to progression in the extent of the stenosis of the right renal artery.**

International expert consensus is that progression of Ms Boulton's multifocal FMD (pathologically classified as medial fibroplasia) is uncommon.

Literature evidence notes that: *'It can be challenging to accurately determine progressive stenosis over time because visual estimation of luminal stenosis in renal artery FMD is not feasible'*.

Against this is Dr Irvine's opinion that progression can occur, and the consensus of the 25/05/2018 Urology/Nephrology Radiology Meeting in Christchurch that the remaining left renal artery has progressively narrowed from 5 mm (unaffected) to 3 mm in the two year interval between 2016 and 03/05/2018.

**On balance it is reasonable to conclude that there was likely some degree of progression in the extent of narrowing (stenosis) of the right renal artery between 17/11/2003 (the date of failure) and 09/12/2016 (the date on which the right kidney and right renal artery were surgically removed).**

[Emphasis added]

[31] The Corporation obtained advice from Dr Hay for the review hearing whether the progression of right renal stenosis caused any physical injury other than the atrophy of the right kidney removed in December 2016.

[32] In her report dated 9 November 2021, Dr Hay provided information about FMD. She addressed whether the progression of the right artery stenosis caused any other physical injury other than atrophy leading to removal of the right kidney. She noted the treatment pathway

and standard of care in recent years would not have been the standard treatment in 2003. Dr Hay made the following points:

- **In Ms Boulton’s case the FMD affecting her right renal artery progressed to stenosis resulting in ischaemic damage to her right kidney. This right kidney has been removed.** There is some suggestion of progression of the FMD (ie becoming more stenotic) in the left renal artery which is currently under surveillance by periodic CT scanning. See letters from nephrologist, Dr John Irvine dated 25.5.2018 (p 1011/115) and 6.10.2020 (p 32/115). **The progression of arterial stenosis is a natural and inevitable consequence of the FMD disease process, which would occur regardless of whether the stenosis caused by FMD is managed or not.....**
- Management of FMD includes “medical therapy”( antihypertensive medication ...) would have been the treatment strategy in 2003..... **The other form of treatment is revascularisation using angioplasty. This is generally reserved for treatment-resistant hypertension as most FMD can be well controlled on medication (assuming good compliance) ...**Angioplasty may sometimes cure the hypertension, but more often will simply reduce the number of medications required to control the blood pressure.
- **In Ms Boulton’s case it is likely a multidisciplinary team discussion would have led to right renal artery angioplasty some years earlier than 2016 if the FMD had been recognised. ....**
- **Earlier intervention by angioplasty to the right renal artery (pre 2016 ) may have prevented the right kidney from becoming ischaemic and non-functional but we cannot be sure.**
- **If angioplasty had been performed on her, it is still unlikely that Ms Boulton would have been cured of her FMD or that the requirement for her to take antihypertensive medication would have been eliminated. I make this statement with the knowledge that she now has demonstrated FMD affecting other vascular beds. The predisposition to FMD in the arterial circulation is not eliminated by right renal angioplasty, unilateral nephrectomy nor by antihypertensive medication. There is no treatment available for the abnormal cellular proliferation in the wall of the blood vessels that characterises FMD.**

[Emphasis added]

[33] Dr Hay went on to discuss the nature of right renal artery stenosis, whether vascular remodelling and hypertension are physical injuries. She stated she was unable to identify any additional injuries arising from the delayed diagnosis of stenosis in the right renal artery apart from the acknowledged loss of the right kidney. Dr Hay stated:

- The right renal artery stenosis does not account for other symptoms of a generalised nature. In particular, renal artery stenosis does not explain phenomena such as headaches, fatigue, nausea, cramping and impaired vision and concentration. I note that Ms Boulton has in effect been advised of this by vascular surgeon Mr van der Bosch ... who has explained to her that FMD (and implicitly



the stenosis it causes) is separate from the pain she is experiencing and does not cause symptoms such as dizziness and nausea.

- I understand that an issue has been raised as to whether the failure to detect Ms Boulton's FMD in 2003, **and the resultant progression of right renal stenosis, may have led to, or may in the future lead to, "vascular remodelling"**. The reason for this issue arising is a reference in a report prepared by Dr Hussain Allawati (15.3.2017) to Ms Boulton having continuing hypertension despite her nephrectomy (p 86/115). Dr Allawati opines that the hypertension "is likely related to having long term remodelling of her vessels". Vascular remodelling is best described as follows: Large arteries undergo remodelling and increased stiffness with ageing, and in hypertension there may be an acceleration of this process. Hypertension is also associated with remodelling of small arteries. Hypertension is associated with activation of hormonal systems that promote vascular remodelling. In addition, a chronic state of low grade inflammation may be present in the hypertensive individual, also promoting vascular remodelling which in turn contributes to the increased predisposition to cardiovascular events. Other factors such as smoking further enhance this risk profile. Vascular remodelling is an inevitable consequence of hypertension, smoking, and genetics in Ms Boulton's case, and not eliminated by right renal artery angioplasty. To repeat what I have already said, because she had FMD Ms Boulton was (and is) going to suffer from hypertension to some degree. Hypertensive medication may have ameliorated the degree to which she suffered from it, and its effectiveness depends to a significant degree on the patient's medication compliance and their efforts to reduce other significant contributors such as smoking.
- **Vascular remodelling is not in and of itself a "physical injury"**, though depending on its progression and the circumstances of each individual in whom it occurs, vascular remodelling may over time contribute to cardiovascular events such as strokes which themselves cause physical injuries.
- I have read Dr G Brown's report dated 9.2.21 for comments in relation to hypertension/ treatment resistant hypertension. **It is my opinion, in agreement with his conclusion, that hypertension cannot be described as a "physical injury". I also agree that the diagnosis is persistent hypertension that is stable and managed on three anti-hypertensive medications, as confirmed in Dr Irvine's letters.**

[Emphasis added]

[34] The treatment injury report attached to the Corporation's decline letter dated 16 February 2021 noted Dr Brown's report of 9 February 2021:

Dr Brown noted that Ms Boulton had evidence of renal artery stenosis, as an underlying health condition in 2003, (the period from where the failure to diagnose and treat began). He stated:

...

Regarding the development of fibromuscular dysplasia of Ms Boulton's **LEFT** renal artery, this was evidenced in a repeat renal scan on 3 May 2018. The kidney was normal, and her renal function remained stable. Dr Brown attributed this finding to the progression of her underlying fibromuscular dysplasia, with no evidence of left renal

atrophy (kidney damage). Dr Brown considered that this condition, (FMD), is the cause for the now controlled persistent hypertension. He concluded:

“... The current evidence shows that since 2016 Ms Boulton has developed progressive left renal artery stenosis due to the underlying FMD disease. This FMD condition has also been shown to affect a number of other major arteries. The progressive left renal artery stenosis is the likely cause of her ongoing persistent hypertension.

The current evidence strongly supports that Ms Boulton has controlled persistent hypertension; and does not have treatment resistant hypertension.

The current evidence shows that since 2016 Ms Boulton has developed progressive left renal artery stenosis due to her underlying FMD disease. This FMD condition has also been shown to affect a number of other major arteries.

The progressive left renal artery stenosis is the likely cause of her ongoing persistent hypertension. “

Dr Brown further opined:

“Hypertension is an abnormal physiological state that can lead to subsequent disease e.g. cardiovascular disease, cerebrovascular disease.

Hypertension or treatment resistant hypertension is not a physical injury ...

Expert ECA advice from nephrologist Dr N. Hay of 20/07/2017 was that ‘treatment resistant hypertension has produced no other physical injuries other than to her right kidney’.

In my opinion controlled persistent hypertension is not a physical injury.”

In Conclusion:

ACC decline to cover advanced renal stenosis. There are no other coverable injuries arising from this claim’s investigation.

Ms Boulton’s left renal artery stenosis was removed with the left kidney (covered) in December 2016 and is not the cause of her current hypertension.

Ms Boulton has developed progressive left renal artery stenosis due to her underlying FMD disease. The progressive left renal artery stenosis is the likely cause of her ongoing persistent hypertension.

Ms Boulton does not have (severe) treatment resistant hypertension, which does not constitute a personal injury.

[35] For the purposes of the appeal, a report dated 14 April 2022 was obtained from Ms Boulton's treating specialist, Dr Hills, Consultant Physician who answered questions put to him as follows:

1. *Is it likely that the stenosis progressed to a material extent as a result of the failure to provide treatment?*

2. *Did the failure to provide treatment result in further beading and would have been the case if she had been diagnosed and treated earlier?*

**Although this lady's renal artery stenosis was finally diagnosed in 2018, the initial opportunity for diagnosis, and accepted as having been missed, was in 2003, when this lady underwent a CT of the renal arteries 06.11.2003. I believe there is compelling radiological evidence of progression of the stenosis (narrowing), between 2003 and 2018. It is this narrowing (beading) and its effect on normal blood flow to the right kidney that resulted in the kidney's reduction in size, again seen on the two scans 2003 and 2018, and the subsequent loss of renal function in the right kidney.**

- 3 *Do you agree with the conclusions ("would have hypertension regardless") and, if so, is the degree of Ms Boulton's hypertension materially worse now than it would have been if she had been provided with treatment from the start?*

There are two broad categories of hypertension, the more common, essential hypertension, that is an increase in blood pressure associated with age and other demographic issues, eg high salt intake. **The other broad category of hypertension is secondary hypertension due to a specific cause. I believe this lady's hypertension falls into the latter category. The importance for the patient is that secondary causes of hypertension, give opportunity for specific treatment to normalise (cure) the hypertension.**

It is my strong opinion that this lady's hypertension at the time it was noted in 2002 was related to her identified renal artery stenosis, noted on her CT renal scan 2003. **Again, it is my strong opinion that the cause of this renal artery stenosis, related to the disease process of fibromuscular dysplasia, and in no way related, at the age of 28, to any general tendency to essential hypertension ('hypertension regardless').**

**It is my opinion, had this lady's renal artery stenosis been successfully managed in 2003, it would have had a beneficial impact on her subsequent high blood pressure problems, that necessitated her to have continuing follow up in Medical Outpatients Clinic over the last 19 years. It is in addition, my opinion that if her renal artery stenosis had been successfully managed in 2003, that this lady would have been normotensive (of normal blood pressure), not requiring blood pressure medications.**

Given the universal nature of difficulties of compliance with medications particularly in this type of prophylactic situation (prevention of high blood pressure to prevent later complications), inferring that Ms Boulton's poor blood pressure control was wholly related to non-compliance is unfairly prejudicial.

**It is difficult to determine the clinical significance of the existence of FMD in other arteries, in this lady's case. It has not been shown as causing significant stenosis elsewhere or in the remaining kidney. At this point with hypertension well established, any role played by the FMD would be very difficult to determine.**

[Emphasis added]

## **Legal framework**

[36] Sections 20(1) and 20 (2)(b) provide cover for physical injury that is “treatment injury.”

The term is defined in s32(1) of the Act as follows:

### 32 Treatment injury

- (1) **Treatment injury** means personal injury that is—
- (a) suffered by a person—
    - (i) seeking treatment from 1 or more registered health professionals; or
    - (ii) receiving treatment from, or at the direction of, 1 or more registered health professionals; or
    - (iii) referred to in subsection (7); and
  - (b) caused by treatment; and
  - (c) not a necessary part, or ordinary consequence, of the treatment, taking into account all the circumstances of the treatment, including—
    - (i) the person’s underlying health condition at the time of the treatment; and
    - (ii) the clinical knowledge at the time of the treatment.
- (2) **Treatment injury** does not include the following kinds of personal injury:
- (a) personal injury that is wholly or substantially caused by a person’s underlying health condition:
  - (b) personal injury that is solely attributable to a resource allocation decision:
  - (c) personal injury that is a result of a person unreasonably withholding or delaying their consent to undergo treatment.

[37] Treatment is defined in s33 to include, diagnosis of a person’s medical condition, a decision on treatment provided, providing medical treatment and a failure to provide treatment or to provide treatment in a timely manner

[38] Section 33 (1) defines treatment as follows:

### 33 Treatment

- (1) For the purposes of determining whether a treatment injury has occurred, or when that injury occurred, treatment includes—
- (a) the giving of treatment:
  - (b) a diagnosis of a person’s medical condition:
  - (c) a decision on the treatment to be provided (including a decision not to provide treatment):
  - (d) a failure to provide treatment, or to provide treatment in a timely manner.

[39] In *Wire*, Judge Powell noted the proposition of loss of chance of a better outcome was articulated by the Court of Appeal in *Ambros*:<sup>3</sup>

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<sup>3</sup> *Accident Compensation Corporation v Ambros*, [2007] NZCA 304 at [38].

[38] The loss of a chance of a better medical outcome often arises in cases of delayed, missed or wrong diagnosis leading to a deterioration in the patient's condition. What must be determined is whether the damage is a result of the doctor's fault **or the normal outcome of the pre-existing condition** ... The answer, on traditional causation principles, will depend on the patient's prognosis at the time the correct diagnosis should have been made. If the patient was at that time more likely than not to recover if properly diagnosed and treated, then the faulty diagnosis will be treated as causative. Otherwise it will not be. If it is treated as causative then full damages are recovered and there is no discounting for the chance (which could be up to 49 per cent) that the negligence did not cause the deterioration. If it is not found to be causative, then the plaintiff fails to recover at all.

[Emphasis added]

[40] It is settled law, there can be a failure, but there is no cover without causation. There must be a proper evidential basis to support an injury. It is not enough to say that the treatment failure reduced the chance of a better outcome. It must be the case that on the evidence, it is probable that earlier intervention would have delayed or halted the injury claimed. A denied opportunity for treatment is not a basis for cover.

### **The submissions of the parties**

[41] Mr Schmidt submitted that progression of the renal artery stenosis beyond the point where it should have been treated is a treatment injury. In particular, he states:

- i. Delay in diagnosis and/or failure to treat could have prevented or reversed the progression of stenosis. The most likely treatment would have been angioplasty. While angioplasty would not have cured FMD, it would have prevented the progression of stenosis.
- ii. The Corporation accepted that treatment was available when it provided cover for loss of the right renal artery and kidney.
- iii. It is irrelevant that FMD cannot be cured. If the stenosis is addressed in a timely manner and proper perfusion returned to the artery, further stenosis and/or beading may or may not occur. What is certain is that providing no treatment virtually guarantees progressive stenosis, which in turn causes consequential organ damage, as occurred here.

[42] Mr Schmidt relied on the following case law in support of his submissions that:

- i. *Allenby, Cumberland* and *AZ*<sup>4</sup> establish that progression of a harmful condition beyond the point where it could have been treated is a treatment injury. Further, these cases are authority that personal injury and treatment injury must be interpreted in a flexible and constructive manner within the appropriate statutory context.
- ii. *Cumberland* is authority that treatment injury as a personal injury, can cover naturally occurring conditions provided the purpose of the treatment is to remedy the emerging condition.
- iii. *AZ* is authority that the failure to diagnose the renal stenosis prevented earlier intervention. In *AZ*, the High Court considered whether the progression of a disease beyond the point where it could have been treated could be a treatment injury. The disease in that case was spina bifida in an unborn child. The High Court determined that disease can be covered where progression of the disease was caused by a failure to provide treatment. The relevant passage provides:

[56] In *Allenby*, and as followed by the Court of Appeal in *Cumberland*, the Courts accepted that the physical consequences and physiological changes arising from of the continuation of pregnancy were physical injury to the mother. Those physical consequences for the mother would have been the same, whether or not the fetus had spina bifida. But from the perspective of the fetus, the physical consequence of the continuation of the pregnancy was the continued development of the spina bifida. I agree with Mr Schmidt that this situation is very similar to the analogy of the unarrested tumour, as developed by Blanchard J in *Allenby* and applied in *Cumberland*. It is also similar to the situations considered in *ACC v Stanley and Wire v ACC*.

[57] For these reasons, I am satisfied that the continued development of the spina bifida in the fetus as a consequence of the continued pregnancy following the misdiagnosed scan was physical injury to the child once born.

[43] Mr Butler submitted the progression of renal stenosis is not itself a treatment injury in the circumstances of this case. He submitted:

- i. Relying on the evidence of Dr Hay, the progression of arterial stenosis is an effect of FMD. This occurs because of the abnormal cellular proliferation in the wall of

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<sup>4</sup> *Allenby v H* [2013] 3 NZLR 425, *Cumberland v Accident Compensation Corporation* [2014] 2 NZLR 373, *AZ v Accident Compensation Corporation* [2021] NZHC 2752, [2021] 3 NZLR 791.

blood vessels that characterises FMD disease, and no intervention could have prevented such progression.

- ii. Had angioplasty been undertaken prior to 2016, it would not have cured Ms Boulton's FMD, nor would it have prevented the progression of the naturally occurring beading of the arterial wall. Rather, it would have counteracted the natural phenomena by artificially widening the gap. The cover granted for removal of the right renal artery and nephrectomy was predicated on this fact.
- iii. The claim seeks to have the question of cover for hypertension (and other symptoms) as part and parcel of undetected FMD/stenosis determined here. The Corporation was right to reject the claim.

## **Discussion**

[44] There can be no doubt that it is deeply distressing for Ms Boulton there was a treatment failure resulting in the loss of her right kidney.

[45] The Corporation does not disagree that there should have been earlier diagnosis of FMD, through the use of the Doppler test. Nor does the Corporation dispute that had there been earlier detection, then the right kidney may have been able to be saved. That is why cover was granted for nephrectomy of the right kidney.

[46] In *Wire* terms,<sup>5</sup> Mr Schmidt submitted there was a chance of a better outcome had an earlier diagnosis been made.

[47] In light of the decision in *Wire*, the reviewer stated the question is “whether there is a single ‘residual disability’ qualifying as an injury due to a delayed or incorrect diagnosis, resulting in a worse outcome than what would have occurred had the correct diagnosis been made earlier”. This is a core issue here.

[48] Before turning to address the issue, a preliminary matter concerning hypertension arises.

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<sup>5</sup> *Wire v Accident Compensation Corporation* [2015] NZACC 221.

## *Hypertension*

[49] The agreed facts filed by counsel indicate Ms Boulton has experienced hypertension since at least 2003. Treatments for hypertension during this period have not been successful. Following the diagnosis of FMD in 2016, the evidence indicates the hypertension has not resolved. Mr Schmidt characterises this as treatment resistant hypertension, caused by prolonged hypertension resulting in vascular remodelling.

[50] Mr Butler submitted that Mr Schmidt is seeking to generate a legal issue in a disguised application for cover for hypertension. Mr Butler submitted the evidence shows Ms Boulton is not suffering from treatment resistant hypertension, but persistent hypertension which is treatable. In any event, hypertension is not a physical injury, but a description of a physiological function.

[51] Mr Schmidt explained to the Court that hypertension is subject of a separate claim and is not to be determined in this appeal.

[52] Accordingly, the Court will not fold hypertension into the issue of the undetected stenosis. Hypertension will remain open for determination in the separate claim as lodged.

### **Whether the progression of renal stenosis is a treatment injury**

[53] Mr Schmidt submits that progression of the stenosis is the residual disability qualifying as injury. He submits stenosis is a physical occlusion of the artery and is an injury in the same way that a tumour can be an injury. He submits FMD is separate from stenosis. FMD causes stenosis which can be treated, and if it is not treated it becomes advanced stenosis.

[54] Mr Butler submits the identifiable physical injuries from the progression of the stenosis were to the kidney and the artery. They were damaged in a clinically significant way, that a nephrectomy was required. In respect to the analogy with cancer, Mr Butler submitted cover is not provided for the progression of cancer, it is the injury that cancer causes. The Court agrees.

[55] The Corporation accepted there was likely some degree of progression in the extent of narrowing or stenosis between the date of failure and the date of the nephrectomy.



[56] Mr Butler submits the Corporation declined cover for progression of renal stenosis simpliciter because progression is a natural part of the incurable FMD. Stenosis is not an injury.

[57] The submissions of counsel raise two questions. First, whether the progression of renal stenosis is a physical injury, and whether there is a new injury. Secondly, whether there was an alternative treatment that would have prevented the claimed injury that could and should have been given. Mr Schmidt submitted that angioplasty would have slowed the progress of the stenosis leading to different outcomes, including that the right kidney would have survived, and a nephrectomy avoided.

*Whether renal stenosis is a physical injury*

[58] The Court agrees with Mr Schmidt there is ample case law supporting the principle that undetected and naturally occurring physiological conditions may amount to a treatment injury. However, the authorities are also clear there cannot be cover for progression of a gradual process or disease until a physical injury has occurred.

[59] In *Cumberland*, the Court of Appeal held the analytical focus for the purposes of cover must be on the physical consequences to the claimant. Further, the availability of cover is subject to causation.<sup>6</sup> Likewise, in *Allenby*, the Supreme Court found that the progression of a disease, such as a cancerous tumour is a personal injury if caused by medical misadventure.<sup>7</sup>

[60] The Court accepts Mr Butler's submission that the decision in *AZ* does not assist Ms Boulton's case. The High Court did not focus on the underlying disease of spina bifida, but rather what the physical injuries were the progression of that disease had on the claimant.

[61] Here, has the treatment failure caused a physical injury, other than harm to the right renal artery and kidney for which cover has been granted by the Corporation?

[62] I find the weight of the medical evidence outlined earlier in the judgment, and as summarised below, does not support right renal arterial stenosis as a physical injury for the reasons that follow.

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<sup>6</sup> Ibid at [35] and [57].

<sup>7</sup> *Allenby v H* [2012] 3 NZLR 425 at [66].

[63] The evidence shows FMD was first identified in May 2016 as an unexpected finding on CT scan of chest and aorta after Ms Boulton presented to hospital with chest pain. The report from Dr Balasingham indicated "moderately atrophic right kidney with arterial appearance consistent with right renal artery fibromuscular dysplasia". The Court observes in the article entitled *First International Consensus on the diagnosis of Fibromuscular Dysplasia*, attached to Dr Hay's report, that FMD is similarly described as renal FMD, distinguished from other forms of FMD, for example cerebrovascular FMD.

[64] The diagnosis of right renal narrowing was confirmed by Dr McGregor, nephrologist in June 2016. The medical literature also notes that narrowing and stenosis are synonymous terms which mean narrowing of the affected arteries.

[65] Dr Brown noted there was evidence of early right renal stenosis with FMD which progressively worsened in the period 2003-2016 based on Dr Irvine's report of December 2016. The Corporation accepted this evidence. Dr Brown also noted evidence of emerging stenosis in the left renal artery.

[66] Dr Irvine considered FMD and the effects of stenosis:

Fibromuscular dysplasia is a condition that leads to narrowing of the artery [stenosis] and therefore the kidney will have a reduced/impaired blood flow. The reduced blood flow can result in secondary hypertension and if the narrowing is severe and progressive, then this can result in atrophy of the kidney.

[67] The nephrologists agree Ms Boulton's multifocal FMD is a condition that has the appearance of a string of beads. Dr Hay described FMD as a stenotic disease:

...as beaded (multifocal) or focal lesions in medium or small-sized arteries, though the clinical phenotype of FMD has recently been expanded to include arterial dissection, aneurysm and tortuosity. FMD most commonly affects the renal and extracranial carotid and vertebral arteries, but nearly all arterial beds may be affected, and multivessel involvement is common ...

FMD may result in two types of angiographic appearance: (1) focal FMD, which may occur in any part of the artery or (2) multifocal FMD, alternating areas of stenosis and dilation (the so-called string of beads), which usually occurs in the mid and distal portions of the artery. This morphology most often occurs in the renal and carotid arteries but may occur in any artery in the body ...

**FMD is primarily a stenotic disease ...**

[Emphasis added]

[68] Dr Hay's evidence together with the medical literature she refers, indicate FMD has the following characteristics:

- It is naturally occurring
- Is an arterial disease
- Is characterised by abnormal proliferation in the walls of the blood vessels
- Commonly affects the renal, carotid and vertebral arteries
- Causes stenosis of small and medium sized arteries
- An effect of FMD is the progression of arterial stenosis which occurs regardless of whether the stenosis is managed or not.

[69] Dr Hay went on to discuss that an effect of renal arterial stenosis is the artery will be wider in some places and narrower in others. As cellular proliferation continues and arterial stenosis becomes severe, there is significant risk the artery will be deformed. Deformity may lead to the reduced or ineffective blood flow through the artery, leading to the death of the artery and the kidney to which it is connected.

[70] The evidence concerning causation and the aetiology of renal stenosis was considered by Judge Walker in her decision determining the claim for cover for FMD<sup>8</sup>. Her Honour declined the claim for cover for FMD because it was a pre-existing underlying health condition. Further, cellular proliferation caused by FMD was declined because it is and was a natural and inevitable consequence of a non-covered pre-existing health condition. Her Honour stated:

[150] There is no evidence before the Court however that this condition [FMD] is caused by any physical injury. **It is accepted that this resulted in stenosis** (areas of narrowing) in the renal artery ultimately affecting renal blood pressure **but this is not itself a physical injury caused by an accident.**

[Emphasis added]

[71] Ms Boulton sought leave to appeal to the High Court. Considering the application, Judge Kelly upheld Judge Walker's decision.<sup>9</sup>

[45] In the absence of evidence of physical injuries, and the lack of evidence supporting a causal nexus between Ms Boulton's undiagnosed disease and further adverse health

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<sup>8</sup> *Boulton v Accident Compensation Corporation* [2018] NZACC 133.

<sup>9</sup> *Boulton v Accident Compensation Corporation* [2020] NZACC 33.

effects beyond the atrophy of her kidney, for which cover has been provided, the appeal cannot succeed.

[72] The Corporation agrees had the FMD and right renal arterial stenosis been diagnosed earlier, the kidney may have been able to be saved, which is why cover was granted for nephrectomy of the right kidney.

[73] On the evidence, it is apparent the aetiology of stenosis and FMD are not separate conditions, rather they are differing aspects of the same condition. They are inextricably linked with renal stenosis being the physical manifestation of the consequences of FMD being the irregular proliferation of cell results in the distorted blood vessels.

[74] Cover is granted where there has been progression of a disease if that progression results in a discrete physical injury. Here, the Court finds no discrete physical injury, other than the kidney and renal artery for which cover was previously granted.

#### *Treatment*

[75] I turn to consider Mr Schmidt's argument that there was treatment available to treat renal arterial stenosis leading to a chance of a better outcome.

[76] In his supplementary submissions, Mr Schmidt noted initially the treatment would have been antihypertensive medication and regular monitoring of the condition, but at some stage between 2003 and 2016, when the progress of stenosis threatened the right renal artery and kidney, revascularisation by way of angioplasty would have likely taken place. An angioplasty would have significantly improved the quality of blood flow. The obstruction in the artery relieved, the right kidney would have survived, and nephrectomy avoided. Mr Schmidt's argument is essentially if the stenosis was treated earlier it might have treated Ms Boulton's hypertension and complications such as vascular hardening and it becoming treatment resistant, might not have developed. Hypertension is not considered here because it is part of a separate claim.

[77] It is to be recalled Dr Milne had noted that while the CT scan did reveal evidence of FMD in the right renal artery, it was difficult to see without the benefit of hindsight. Further, the blind review of the scan undertaken by four other radiologists did not detect FMD. Dr Milne explained the Doppler assessment is an ultrasound technique "which assesses the

velocity of blood vessels and is ideally suited identifying stenosis in arteries". In consequence, the Corporation granted cover, not on the failure to detect, but on the basis there should have been earlier diagnosis of FMD using the Doppler test. FMD was not covered as it was a pre-existing underlying health condition.

[78] In his report of February 2017, Dr Milne discussed treatment of stenosis and outcomes:

Renal artery stenosis due to FMD is typically treated with percutaneous renal artery angioplasty, either with or without stenting. In 2017, stenting would be more likely employed than in 2003. The results of this treatment are often to achieve normalization of blood pressure without additional medical management. In addition to treating the hypertension, preservation of renal perfusion would likely have prevented the right kidney from becoming atrophied as was mentioned in the follow up CT scan of 19/5/2016, preserving its function.

[79] Whilst there is no doubt as to Dr Milne's qualifications as a radiologist, the complexity of the pathophysiology, angioplasty treatment and outcomes noted in the medical literature in evidence, means that weight is best placed on the opinions of renal specialists.

[80] Dr Irvine opined FMD that can be treated by angioplasty. He stated:

Fibromuscular dysplasia can be reduced through radiological intervention and angioplasty of the renal artery.

[81] The medical literature referred to both by Dr Irvine and Dr Hay shows that renal angioplasty acts as a balloon to expand the size of the gap between the arterial walls, enabling more blood to flow. However, angioplasty does not prevent the continuation of the abnormal cellular proliferation.

[82] Dr Hay explained there is no treatment available for the abnormal cellular proliferation in the wall of blood vessels that characterises FMD, so that the artery will be wider in some places and narrower in others. She stated no intervention could have prevented the beading as such because it proceeds irrespective of whether the stenosis is managed or not. She referred to medical literature in support of her opinion.

[83] The evidence shows that clinical judgment as to when intervention is best indicated entails taking into account a number of considerations including weighing benefits and risks. Further, medical studies show that outcomes are variable. For example, in young women, depending on the severity of FMD, long term monitoring may be indicated compared with an

older demographic. In the article entitled "*An outline of renal artery stenosis pathophysiology-a narrative review*" it is noted that:

"Stenosis less than 50% is considered to be mild and results in no significant reduction in renal blood flow (RBF); thus, it is not associated with impairment of renal function. Stenosis greater than 50-60% causes a pressure gradient greater than 15-20 mmHg, which is a hemodynamically significant feature of renal stenosis and a possible factor initiating renal vascular hypertension development ... RAS [ed: renal artery stenosis] is an anatomical diagnosis (clinically, usually taken into consideration when there is a > than or = to 75% narrowing of the diameter of a main renal artery or .50% lumen narrowing with a post-stenotic dilation), and many lesions identified with imaging studies, mostly in elderly patients, remain clinically insignificant."

[84] The critical issue therefore, is around clinical judgement as to when further intervention is indicated and appropriate. For example, questions arise whether angioplasty would relieve this stenosis; would stenting prevent recurrence of stenosis? Clinical judgment would involve consideration of the indications such as response to blood pressure treatment, patient compliance with blood pressure treatments, the impact of blood pressure on overall health and other such factors. The medical literature also notes adverse outcomes of angioplasty. The time when intervention is appropriate is undeniably complex, and patient focused having regard to the particular circumstances.

[85] In this case, Dr Hay considered while earlier intervention by angioplasty to the right renal artery "may" have prevented the right kidney from becoming ischaemic and non-functional, she stated "we cannot be sure." Dr Hay opined that a multidisciplinary team would have recommended right renal angioplasty some years earlier than 2016 if the FMD had been diagnosed.

[86] The Court observes Mr Hills' opinion that the consequences of the missed diagnosis was the missed opportunity to manage the hypertension. Dr Hay agreed there were available treatments, including medication, that while unable to reverse the FMD and the stenosis, could have managed the effects of some aspects of it. Dr Hay noted that hypertension does not cause renal atrophy, rather stenosis causes renal atrophy. Equally, renal atrophy results in a decline in renal function.

[87] Dr Hay's evidence is clear that FMD is incurable and there is no treatment for the abnormal cellular proliferation it causes. Further, the cellular proliferation that leads to renal

artery stenosis cannot be stopped. Treatment is for the effects of the renal stenosis but only at the point where medical intervention by way of angioplasty is warranted which is a matter of clinical consensus.

[88] Mr Butler submitted the position can be cross-checked by the treatment currently provided to Ms Boulton in respect of her left renal artery and kidney. There is evidence that Ms Boulton's multifocal FMD is causing beading in her left renal artery and some stenosis, although there is no evidence of renal atrophy at present. At present, the medical evidence shows no intervention to treat the stenosis itself has been recommended which demonstrates that renal artery stenosis and the progression of such stenosis itself does not require surgical intervention at present. Rather, it requires monitoring to see how it progresses and what effects, if any, it produces.

[89] Relying on Dr Irvine, Mr Schmidt too submitted although there has been some narrowing in the left renal artery, it has not reached a point where intervention was considered. The plan is to monitor the condition.

[90] Mr Schmidt's submission of a chance of a better outcome is to be considered in context of the medical evidence and the basis of cover already granted by the Corporation. The opportunity for angioplasty was missed because had there been earlier detection, then the right kidney may have been saved. The Corporation rightly granted cover for the physical injuries of right renal artery and right kidney atrophy that was caused by the failure to undertake the additional diagnostic test.

[91] The Court concludes while the evidence shows there was a treatment that may have been available to prevent damage to the right renal artery and right kidney atrophy, that is renal angioplasty, it was not given because the existence of FMD was erroneously not detected.

## **Decision**


[92] The Court upholds the decision at review that there is no new physical injury and concludes:

- [i] Cover for FMD was rightly declined because it is and was a pre-existing underlying health condition;
- [ii] Cover for cellular proliferation caused by FMD was rightly declined because it is and was a natural and inevitable consequence of a non-covered pre-existing underlying health condition;
- [iii] Cover for progression of renal stenosis was rightly declined because the narrowing of the right renal artery was a natural and inevitable consequence of a non-covered pre-existing underlying health condition; and
- [iv] Cover for the right renal artery and right kidney atrophy was correctly granted because a treatment would have been available to prevent damage to them, viz renal angioplasty, but it was not given because the existence of FMD was (erroneously) not detected.

### **Result**

[93] Accordingly, the claim for cover for advanced right renal artery stenosis as a treatment injury cannot succeed. The appeal is dismissed.

[94] There is no issue as to costs.



Judge Denese Henare  
District Court Judge

Counsel: Schmidt & Peart Law, Solicitors, Auckland for the appellant  
Mr Butler KC, Barrister, Thorndon Chambers, Wellington for the respondent