

Dentist, Dr B

**A Report by the
Health and Disability Commissioner**

(Case 03HDC16810)



Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Mr A	Consumer/Complainant
Dr B	Provider/Dentist
Dr C	Dentist
Dr D	Restorative Dentist
Dr E	Oral and Maxillofacial Surgeon

Complaint

On 10 November 2003 the Commissioner received a complaint from Mr A about the services provided by dentist Dr B. The issues to be investigated were identified as follows:

- *the adequacy and appropriateness of Dr B's treatment of Mr A in December 2000;*
- *the adequacy and appropriateness of Dr B's follow-up treatment of Mr A's failing veneers and abscess.*

An investigation was commenced on 23 March 2004.

Information reviewed

- Mr A's dental records from Dr B
 - Mr A's dental records from Dr C
 - Letter from restorative dentist Dr D to Dr C
 - Report and documentation from oral and maxillofacial surgeon Dr E
 - Expert advice from independent restorative dentist Dr Karl Lyons
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Explanation of dental terms

Attached as Appendix 1 is a diagram showing the anatomy of a tooth, and a glossary of dental terms, to assist with understanding this report.

Information gathered during investigation

In November 2000, Mr A decided to consult a dentist. He said he had not paid much attention to his teeth over the years, could not afford expensive dentistry and simply wanted all his teeth removed and replaced with dentures.

On 24 November 2000 Mr A had his first consultation with Dr B. Dr B examined his teeth and took radiographs. He found that Mr A required dental treatment to the following teeth: 17, 15, 14, 13, 12, 11, 21, 22, 23, 24, 25, 26, 37, 42 and 43. Mr A told Dr B that he wanted all his teeth removed and replaced with upper and lower dentures as he could not afford implants. Dr B explained that dentures would be a poor choice, given Mr A's age (28 years), and suggested a third option: to fit porcelain veneers to his six front teeth (13, 12, 11 and 21, 22 and 23).¹ Dr B showed Mr A pictures of the veneers and, as Mr A thought this was a good option, they decided on a treatment plan. Mr A said Dr B did not provide an estimate of costs for all the dental work but said the veneers would cost about \$5,000.

Dr B advised me:

“On the 5 December 2000, the treatment started by cleaning the teeth and the removal of all the calculus in the mouth. Then he was given instructions for prevention measures for his oral hygiene.

During the course of the treatment the patient showed concern about his appearance and his embarrassment about the looks of his front teeth. So I suggested putting veneers on his six anterior teeth to improve their appearance. Complications and side effects had been discussed thoroughly with him and would not damage his teeth as it needed to take only a fraction of a layer of the enamel and then the veneer will be glued in.

He agreed about the idea and both of us agreed he would pay half the cost of the veneers (as the lab costs). Also he will continue to pay \$50 per week until the treatment is finished. The veneers were fitted on 15 February 2001. They were good, both of us were happy about it. I also asked the other dentist in the surgery [Dr C] to have a look at the veneers and to take a picture before and after. [Dr C] took the picture using his own camera. As [Mr A's] treatment took a long time we built a good dentist and patient relationship and I gave him my home phone number to contact me for any emergency at any time. On Saturday 17 February 2001, he rang me as he had a dental abscess from 22. I saw him that day at the surgery and I prescribed an antibiotic for him. Root canal treatment was done to tooth 22, after informing [Mr A] about all the complications that could happen and he gave a verbal consent.

¹ Veneers are a form of cosmetic dentistry. A veneer is a thin, tooth-shaped, tooth-coloured material, usually made of porcelain, but it can be made of acrylic resin (composite). The veneer is bonded to the tooth surface using filler (bonding). As well as an adhesive, filler can be used to fill a gap (for example, where caries has been removed before the veneer is fitted) or used to improve the strength of the tooth. Unfilled resins are used to improve the seal between the filling and the tooth surface.

In May 2001 I finished [Mr A's] treatments. During this time a couple of veneers had fallen and had been replaced back again. This could have been caused by [Mr A] not following the instructions carefully as I have advised him. At the time I reassured [Mr A] that if anything happened to his veneer, it will be fixed for free as part of the warranty for his treatment. The warranty will still be enacted even when he finished paying the weekly treatment.

The post treatment problem of the abscess of tooth 22 – He was informed about the problem and two options were given to him, in order to resolve this problem, which were to go to an oral surgeon for an episiotomy or extracting the tooth 22 and replacing a plate to replace tooth 22 for free. [Mr A] told me he would think about it and come back to me to discuss it.

Since I didn't hear anything from [Mr A], till I received the letter of complaint from the New Zealand Dental Association, about the service I did to [Mr A].”

In contrast to Dr B's belief that he was happy with the veneers, Mr A complained:

“Once the veneers were made, they were fitted in rather amateur fashion, leaving cement in between my teeth, which makes it impossible to floss. The tops of my veneers don't even merge with my gums very well. I've also been embarrassed more than once when veneers have come off while I have been eating a meal, either at home, with friends and even at work. Every veneer has come off at one time or another, its even happened without eating food, just from natural mouth movement.

The veneers coming off all the time has affected my diet in the sense that I can't even eat regular food without having fear of my veneers not holding and causing myself more pain and suffering. My new veneers have caused nothing but problem after problem. Because of the poor fitting of the veneers I also developed a huge abscess over one of the teeth, which had a veneer fitted. This had made me feel sick on and off for at least a year and I've had to take time off from work to go back to [Dr B] for treatment.

At first [Dr B] did a root canal on the tooth with the abscess and gave me some antibiotics. This didn't work and abscess kept resurfacing and causing me pain, nothing had changed. [Dr B] then told me he might have to pull the tooth out.

After many visits and no change I had lost all my faith in him, and decided on a second opinion.

Now that I have received other professional opinions, I have been led to believe that [Dr B's] work and advice was both unprofessional and unacceptable. I am faced with the situation where I cannot possible afford the cost of correcting the damage already done.”

Re-cementing veneers

Mr A's dentals records show that Dr B fitted six veneers on 15 February 2001. On 19 February 2001 veneer 13 debonded and was re-cemented. Veneer 23 was re-cemented on 11 April 2001 and veneers on teeth 23 and 12 were re-cemented on 7 June 2001. Veneer on tooth 23 was loose on 20 July and was re-cemented on 24 July 2001. On 10 September 2001 the veneer was re-cemented to 22 and on 17 September re-cemented on 13. The veneer on 13 was re-cemented on 8 October and to tooth 21 on 26 October 2001.

Second opinion

One of the dentists that Mr A consulted was Dr C. Dr C provided me with the following report:

"I first saw [Mr A] for a consultation at my surgery on 2nd September 2002. He had requested a second opinion regarding some treatment he had previously received from another dentist.

At the same time he had also needed an emergency appointment to provide relief from a dental abscess which was badly discharging and causing him pain and nausea. The abscess was located on a previously poorly root filled upper left lateral incisor. At this first appointment I removed most of the old root filling and commenced to drain the abscess and placed calcium hydroxide within the tooth to sterilise it, as a first move to settle it down.

Whilst this abscess was one part of [Mr A's] inquiry a further concern was the poor appearance and performance of six porcelain veneers that had been placed on his front teeth. These were most unsightly in appearance. The choice of colour was poor and the veneers lacked the translucency of natural teeth, a failing that [Mr A] is very self conscious about. These had also dislodged from the teeth on a number of occasions (at least ten times) and had needed recementing. It later became apparent that these veneers failed to hold for three reasons.

They were placed over untreated decay.

They were not adequately placed into enough enamel to allow cement to properly hold. The bonding process for veneers requires a good base of tooth enamel to grip properly. In this case the enamel had been largely removed leaving only exposed dentine.

On some of these the correct bonding cement had not been used anyway. A more routine dental cement had been used which is completely inappropriate for this purpose.

At the conclusion of the appointment I performed a general dental examination and two X-rays.

On examination [Mr A's] general dental condition at that time I would describe as only fair. There were twelve cavities that needed treatment and the state of the gums was poor. Both of these conditions were treatable however and we set up some appointments to deal with these. I noted also that some of the existing filling work that had recently been done

was poor. I had to replace some of these and others which probably will not last for long. I am monitoring these in the meantime.

On talking to [Mr A] it was particularly disturbing to find that many of the cavities and the gum disease had been present prior to the veneering of the front teeth. It would generally be a rule that the whole mouth should be treated and returned to full health before expensive and sophisticated work as veneering is done. In this case it appears that some of the veneers were placed over cavities that should have been filled first. By sheer chance I have a photograph that shows this. One of these cavities is probably responsible for the dental abscess that [Mr A] is now suffering from. To treat the root filling previously described had then been attempted but this too was inadequate and had done nothing toward reducing the infection.

When I drilled open this tooth to start treatment it became obvious why this root filling had failed. A good root filling must precisely reach the end of the root and be hard packed and cemented into place. Normally it would subsequently be very difficult to remove and take some time and effort. This one proved to be very loose, coming out very easily with the first bit of reaming that I tried. X-rays also showed the root filling to be badly short of the end of the tooth with no chance of achieving a proper apical seal.

One of the veneers has since been lost completely (thought to have been swallowed) and I have had to provide a temporary cover for this tooth. At the time of doing this I found decay present under the buccal aspect of the tooth which I took this opportunity to remove. Other work I have had to provide totals ten fillings of various sizes and one extraction. I took the opportunity to remove decay and place fillings under two other veneers after they came off the teeth but I believe other cavities are probably present on other teeth and slowly deteriorating.

Currently to remedy the veneers need to be removed and replaced with full crowns once the decay underneath has been removed but [Mr A] cannot afford this especially when as I understand he has only recently paid off the loan that he took out for the original veneers. It is questionable because of both the decay and the size of existing fillings between these front teeth whether the veneers were even a good treatment choice initially. I believe crowns would have been a better choice right from the start.

The abscessed tooth despite my best efforts to treat it with an enzootic approach is not responding. Over eighteen months of intra canal calcium hydroxide and other medications have been tried but the abscess is too extensive to respond and will now need surgery. I am concerned that now the adjacent canine tooth may also be deteriorating because the infection is spreading above this. I have recently referred [Mr A] onto an oral surgeon for this but I do not have the surgeon's report yet. The cost once again is going to be a major concern."

When Mr A first consulted him, Dr C referred him to Dr D, restorative dentist, for a second opinion. On 25 September 2002, Dr D informed Dr C:

“Thank you for referring this patient for my opinion. I have examined this patient but I have used only the radiographs, clinical notes and photographs that you sent to aid in the assessment of this patient. I have essentially combined my assessment to the anterior six veneers.

This patient is a heavy smoker with a less than ideal periodontal condition. ... There is widespread plaque and his home care is far from adequate.

In my experience it is unwise to embark on any form of advanced restorative work until the periodontal condition is adequately justified progressing with this form of dentistry.

The patient gives a history of having the upper anterior six teeth veneered about the end of 2000. Subsequently the 22 abscessed and was treated endemically. Radiographic evidence would suggest that the lesion on the apex of the 22 has progressed to a stage where the lesion is now threatening the adjacent teeth. These radiographs are undated but the progression is obvious.

As can be seen from these radiographs the root filling is slightly short but more importantly the coronal restoration is leaking and this may well be the cause of the expansion of the periodical lesion. My reading of the clinical notes would suggest that although there was a clinical awareness of this issue very little seems to have been done to resolve the problem apart from the administration of antibiotics. In my opinion this has now progressed to the stage where it is unlikely that the 22 can be saved and the adjacent teeth have been endangered by the presence of this lesion.

Regarding the veneers. These are poorly contoured; all have significant marginal deficiencies and are aesthetically poor with regard to their shade. They have a history of failing and I note from the accompanying clinical notes that some have debonded. There are two likely reasons for this. Firstly, as your photos show these seemed to have been prepared into dentine and there has been no attempt to remove the carious dentine and leaking restorations. Secondly, the material used to bond the veneers to the teeth may not have been adequate. I note that on two occasions Fuji Plus was used to recement the veneers.

What of the future? It is important that the 22 situation is dealt with, with some degree of urgency to prevent further dentition. Also it is important [to have] his periodontal needs addressed. Once he has been stabilised it would be possible to progress to definitive treatment. A large amount of delay and a large composite in the anterior will necessit[ate] full crowns in these teeth and I would think that as the 22 will be lost it would be best to replace this with a cantilever bridge.”

Before Mr A made his complaint to my Office in November 2003, Dr C provided him with the following report:

“In response to your recent enquiry I’ve had a look at the most recent X-rays of the infections above the front tooth. I regret to inform you that despite my efforts to resolve the infection by directly treating the tooth it does not seem that the abscess is reducing in

size and by now if this treatment was being effective there should be some sign of reduction. Consequently, it looks as though you will have no choice but to consult with an oral surgeon and arrange for it to be surgically treated.”

Dr C referred Mr A to oral and maxillofacial surgeon Dr E. Dr E was asked to comment about the cyst on tooth 22. He provided the Commissioner with the following report:

“Thank you for your letters of 26 October and 18 November with your five questions. I am enclosing a copy of my report to his referring dentist [Dr C] which will go some way to explaining the nature of [Mr A’s] surgical problem. The treatment of the large infected cyst associated with the root filled tooth 22 became a matter of some urgency and so he had the surgery done on 28/10/04. The lesion was a well established and thick walled periapical cyst and this was confirmed by the laboratory report which I am enclosing. The nature of this lesion and its size would suggest that it had been present for at least several years. I am fairly confident that the cyst has been enucleated without damage to the adjacent two teeth and the root filling that [Dr C] placed and the small seal I placed after the apicostomy should have a good chance of preventing a recurrence of the infection and cyst. This should answer your first question.

Regarding your second question, the cause of the periapical infection and cyst was the dead and infected nerve of the tooth 22. As I explained this is likely to have occurred quite some time ago and was probably caused by the large filling that appears to have been in place before the veneers were placed in 2000/2001.

Regarding question three I think it is likely the periapical infection and cyst were present before the veneers were placed in 2000/2001. My understanding from [Mr A] is that the infection flared up acutely shortly after the teeth were veneered and that [Dr B’s] subsequent management did not resolve the problem of the infection at all. I have not seen his records or X-rays prior to the placement of the veneers. Normal management before doing a fairly extensive restorative procedure like the veneers that [Mr A] had would involve taking periapical radiographs to make sure the teeth were in a healthy state and not infected.

Regarding question four, I can comment that it is likely the cyst would have increased in size steadily since 2000/2001 and it is a concern that the blood supply to the nerves of the adjacent teeth could have been affected. If this was so, the affected tooth would require a root filling. As I said I am hopeful that this will not be necessary but we will be able to tell definitely whether an adjacent tooth has become non vital three to six months after the surgery that was done in October. As far as damage to surrounding structures by the veneers my comment is that there does appear to be some marginal gingivitis and my examination suggests the margins of the veneers would be difficult to keep clean with normal oral hygiene procedures.

Regarding question five, it was a matter of some urgency for [Mr A] to have the surgery done as the infection and particularly the acute flare-ups were affecting his state of health. There was considerable pus present at the time of the surgery and even a few weeks after the surgery [Mr A] has commented that he notices the difference in his wellbeing since

the infection has been dealt with. Infection of this nature not only causes marked morbidity but can also be life endangering.

Please let me know if you require any further information.”

Subsequent events

When Mr A made his complaint in November 2003, he advised that he continued to suffer as a result of the dental treatment Dr B provided. Mr A stated:

“It is probably relevant to inform you that at the moment I have [been] having blood tests done to determine to what extent I am suffering from blood poisoning and to determine the effect it is now having on my health which has been deteriorating since this treatment was done.”

Independent advice to Commissioner

The following expert advice was obtained from Dr Karl Lyons, prosthodontist:

“Please find my advice regarding the complaint by [Mr A] on the standard of care provided by [Dr B] (case number 03/16810/WS).

PROFESSIONAL BACKGROUND

I am a prosthodontist with training and clinical experience in both New Zealand and the United States of America. I am employed by [...] and work in [...], where I am head of prosthodontics and [...] in prosthodontics. Prosthodontics, according to the Glossary of Prosthodontic Terms, 1999, is the branch of dentistry pertaining to the restoration and maintenance of oral function, comfort, appearance, and health of the patient by restoration of natural teeth and/or the replacement of missing teeth and craniofacial tissues with artificial substitutes. The majority of the treatment that [Mr A] has experienced problems with is the branch of dentistry which prosthodontics includes.

REFERRAL INSTRUCTIONS FROM THE COMMISSIONER

Purpose: To advise the Commissioner whether [Mr A] received an appropriate standard of dental care from [Dr B].

Background Between 24 November 2000 and 15 February 2001 [Mr A] had porcelain veneers fitted to his six front teeth by [Dr B].

On Saturday 17 February 2001 [Mr A] developed a dental abscess on tooth 22. [Dr B] prescribed antibiotics and eventually completed a root canal filling to tooth 22 but the abscesses continued to come for about 12 months or so.

During the same period [Mr A] said that the veneers kept falling off. The records indicate that [Dr B] refitted the veneers on at least ten occasions.

Complaint [Mr A's] complaint is outlined in his letter to the New Zealand Dental Association. The issues that the Commissioner is investigating are summarised as follows:

- the adequacy and appropriateness of [Dr B's] treatment of [Mr A] in December 2000;
- the adequacy and appropriateness of [Dr B's] follow-up treatment of [Mr A's] failing veneers and abscess.

SUPPORTING INFORMATION REVIEW

Supporting Information

- Complaint Letter to the Commissioner dated 5 November 2003, marked 'A'. (Pages 1-3)
- The Commissioner's notification to [Dr B] dated 23 March 2004, marked 'B'. (Pages 4-6)
- [Dr B's] response dated 21 April 2004, marked 'C'. (Pages 7-10)
- Information and reports from [Dr C], marked 'D'. (Pages 11-15)
- Information and reports from [Dr D], marked 'E'. (Pages 16-21)
- Information from [Dr E], marked 'F'. (Pages 22-23)
- [Mr A's] dental records from [Dr B] marked 'G'. (Pages 24-33)
- 7 radiographs supplied by [Dr B], dated 27 November 2000, 19 February and 7 May 2001, marked 'H'.
- 7 radiographs dated 2 September 2002, and 6 photographs (with descriptions by [Dr C] marked 'I'.

QUESTIONS POSED BY THE COMMISSIONER

Expert Advice Required To advise the Commissioner whether, in your professional opinion, the standard of care [Mr A] received from [Dr B] was of an appropriate standard. In particular:

1. What particular standards apply in this case and did [Dr B's] dental services comply with those standards? Please explain.
2. What are the causes of porcelain veneer failure?
3. Given the frequency with which [Mr A's] porcelain veneers failed what should [Dr B] have done?
4. In relation to [Mr A's] abscess on tooth 22, what was the likely cause of an abscess forming following dental treatment?
5. Was [Dr B's] initial treatment of the abscess appropriate?

6. Given the persistence of [Mr A's] abscess on tooth 22, what was the most appropriate course of action for [Dr B] to take?
7. If, in answering any of the questions above, you believe that [Dr B] did not provide an appropriate standard of care, please indicate the severity of the departure from that standard. (To assist with this last point some experts approach the questions by considering whether [Dr B's] peers would view his conduct with mild, moderate or severe disapproval.)
8. Any other matters in which in your opinion should be brought to the Commissioner's attention.

The following opinion is based on the information provided by the Health and Disability Commissioner. I have not seen the complainant or examined his mouth. I advise that I do not know [Dr B] personally.

1. What particular standards apply in this case and did [Dr B's] dental services comply with those standards? Please explain.

There are a number of standards that apply to the dental services provided by [Dr B] for [Mr A]. These are:

- a. History and examination with appropriate special tests, such as radiographs, for a patient who is new to a dental practice;
 - b. Appropriate advice for an individual based on their treatment needs;
 - c. Appropriate treatment planning and providing treatment in the appropriate sequence;
 - d. Appropriate quality of treatment provided;
 - e. Managing complications appropriately.
- a. *History and examination with appropriate special tests, such as radiographs, for a patient who is new to a dental practice:*

According to [Dr B's] record of treatment (marked 'G' pages 24-33 of supporting information) [Mr A] was first seen for a history and examination on 24th November 2000. At this appointment, posterior bitewing radiographs (dated 27th November 2000) were taken and another radiograph, possibly a periapical radiograph referred to in the record of treatment but not included with the other radiographs marked 'H'. According to the hand written note (marked 'G' pages 24-25) [Dr B] found that [Mr A] required 20 restorations in 14 teeth, possibly 2 root canal treatments and scaling. My interpretation of the posterior bitewing radiographs (dated 27th November 2000) viewed on a light box under magnification is in agreement with [Dr B] for quadrants 1 to 3. In quadrant 4, I detected caries on tooth 46 (mesial and distal) tooth 47 (mesial) and tooth 48 (mesial). These carious lesions are not recorded on the hand written note (marked 'G' pages 24-25) and became larger in the posterior bitewing radiographs taken by [Dr C] (dated 2nd September 2002). There is insufficient information to determine whether [Dr B] did not diagnose the carious lesions in these three teeth. Therefore, with the possible exception of diagnosis of caries in teeth 46, 47 and

48, in my opinion [Dr B] applied an acceptable standard of care to this phase of treatment.

b. *Appropriate advice for an individual based on their treatment needs:*

- i. According to [Dr B's] record of treatment, on 5th December 2000, Mr A requested that all of his teeth be extracted. Based on the information provided, specifically the posterior bitewing radiographs dated 27th November 2000 and the periapical radiographs dated 19th February 2001 (marked 'H') the advice given by [Dr B] to *talk him out of it* (record of treatment dated 5th December 2000 marked 'G' page 26) was appropriate. While [Mr A] required a large amount of treatment, the radiographic appearance of the teeth on 27th November 2000 (in the posterior bitewing radiographs taken on the 24th November 2000) suggests that other than tooth 25, the teeth were restorable.
- ii. According to [Mr A's] record of treatment, on 25th January 2001, [Dr B] prepared 6 anterior teeth for porcelain veneers. This was not an appropriate treatment decision. This opinion is based on the radiographic size of the restorations that [Dr B] placed in tooth 11 (8th December 2000) tooth 13 (11th December 2000 and 12th January 2001) and tooth 22 (12th January 2001) (periapical radiographs dated 19th February 2001 and 7th May 2001 marked 'H') and the photograph provided by [Dr C] (marked 'I'). The restorations placed or present in teeth 11, 12, 21 and 22 include mesial and distal surfaces that the porcelain (or ceramic) veneer would be bonded to. Because resin bonding of a porcelain veneer can be up to 40% lower to composite resin restorative material than to enamel, it is recommended that if a composite resin restoration covers greater than 1/2 the mesial or distal labial surface of a tooth that a crown rather than porcelain veneer is the recommended treatment. This is because a crown covers a greater tooth surface area than a porcelain veneer and will be much less likely to debond if the prosthesis is largely bonded to a restorative material rather than tooth tissue.

c. *Appropriate treatment planning and providing treatment in the appropriate sequence:*

Treatment planning and the provision of [Mr A's] treatment by [Dr B] in the appropriate treatment sequence were both below the standard expected of a dentist. The recommended sequence for treatment planning provided by a dentist is as follows:

A. STABILISATION (control of disease and dysfunction)

1. Primary Care

Emergency Care

- Life threatening emergencies
- Oral emergencies – acute infections, pain, trauma, neoplasia

Urgent Care

- Management of health threatening systemic conditions
- Management of threatening oral conditions

- Temporary management of major aesthetic concerns and major functional problems affecting mastication
 - 2. Secondary Care
 - Prevention of plaque related disease
 - Management of non-threatening disease (periodontal disease and dental caries)
 - Provisional management of aesthetic and occlusal conditions
 - Interim evaluation of therapy and specific treatments
 - Periodontal review appointments
 - B. MAINTENANCE AND MONITORING (maintenance of health)
 - Review recall decision
 - Review effectiveness of preventive measures
 - Detection of new pathology and restorative failure
 - Determine progress and effectiveness of previous treatment
 - Maintain existing restorations and prostheses
 - C. REHABILITATION (re-establish aesthetics and function in a healthy mouth)
 - Management of supporting structures
 - Oral surgery, orthodontics, surgical periodontics, elective endodontics
 - Definitive aesthetic and functional management
 - Stabilisation of the occlusion, single crowns and porcelain veneers, fixed and removable prosthodontics
- i. Providing treatment according to the plan previously listed will ensure that treatment is provided in a sequence that pain, infection and other urgent dental treatment needs are managed first, the mouth is then made dentally fit, treatment and treatment decisions can then be reviewed prior to the provision of treatment that requires a healthy and stable oral condition, such as porcelain veneers. Placing porcelain veneers on teeth that are carious (13 mesial) or have caries under restorations (tooth 11 mesial and distal, tooth 21 mesial and distal and tooth 22 mesial and distal) (caries visible on the periapical radiographs dated 19th February 2001 and 7th May 2001) is inappropriate and is treatment well below the standard of care expected of a dentist. This is because the carious process is very likely to advance if the caries is not removed (for example, see posterior bitewings dated 27th November 2000 and 2nd September 2002). I cannot advise you whether [Dr B] provided endodontic treatment for tooth 22 in the inappropriate sequence because the radiograph dated 27th November 2000 is missing from the section marked 'H'.
- ii. In this case, [Dr B] has also provided porcelain veneers for teeth prior to appropriately managing all of the carious lesions in [Mr A's] teeth. This is inappropriate and below the standard of care expected of a dentist. This is because existing dental disease processes have been left untreated, and in some cases, carious lesions in teeth have advanced (see posterior bitewing radiographs dated 27th November 2000 and 2nd September 2002) meaning that later treatment would require removal of more tooth tissue to remove the caries, as well as there being a greater risk of a tooth or teeth requiring endodontic treatment or extraction that

may not have been required if the tooth or teeth had been appropriately treated earlier.

d. *Appropriate quality of treatment provided:*

- i. The general quality of the restorative treatment provided by [Dr B] is below the standard expected of a dentist. Based on an examination of [Mr A's] record of treatment and the posterior bitewing radiographs dated 27th November 2000 and 2nd September 2002 and the periapical radiographs dated 19th February 2001 and 7th May 2001, the following teeth restored by [Dr B] appear radiographically to have caries under the restorations: tooth 11 distal (restored 8 December 2000), tooth 21 distal (restored 10th January 2001), tooth 17 distal (restored 4th February 2002) and tooth 26 mesial (restored 21st December 2000 but leaving the carious lesion on the distal surface of tooth 26 that advanced between 27th November 2000 and 2nd September 2002). According to [Dr B's] handwritten plan of restorative treatment, restorations were needed for tooth 12, tooth 13 mesial and distal, tooth 21 mesial, tooth 22 and tooth 23 mesial and distal; these teeth are not recorded in [Mr A's] record of treatment as being restored prior to placement of the porcelain veneers, however teeth 11, 12, 21 and 22 mesial and distal appear to have been restored based on their appearance in the periapical radiographs dated 19th February 2001 and 7th May 2001.
- ii. The porcelain veneer preparations on teeth 13 and 23 appear to be overprepared at the cervical shoulder based on the appearance of these two teeth in the photographs marked 'I'. Overpreparation of a tooth for a porcelain veneer may expose dentine which can have the following complications: tooth sensitivity unless a provisional veneer is placed; difficulty with debonding of the porcelain veneer because resin bonding to dentine is not as strong as resin bonding to enamel in the absence of the retentive surface area of the preparation provided by a crown preparation; and potentially weakens the porcelain veneer because of greater tooth flexing under functional loading of the tooth. Both [Dr C] (letter dated 9th September 2004 marked 'D' pages 12 to 14) and [Dr D] (letter dated 25th September 2002 marked 'E' pages 17 to 18) comment on the quality of the preparation of the teeth for the porcelain veneers.
- iii. The shade of the porcelain veneers appears to be unsatisfactory based on the photographs in section 'I' and the letter from [Dr C] (dated 9th September 2004 marked 'D' pages 12 to 14) and [Dr D] (dated 25th September 2002 marked 'E' pages 17 to 18).
- iv. The endodontic treatment for tooth 22 appears to be generally adequate based on the periapical radiograph dated 7th May 2001. The root canal filling material is a little short of the ideal length, but the root canal filling appears to be well condensed. Clinically this may not have been the case based on a report of the root canal filling by [Dr C] in his letter dated 9th September 2004 marked 'D' pages 12 to 14.

e. *Managing complications appropriately:*

- i. Between the 15th February 2001 when porcelain veneers for teeth 11, 12, 13, 21, 22 and 23 were cemented, the following porcelain veneers are recorded as debonding prior to [Mr A] presenting to [Dr C] on 22nd September 2002: tooth 12 (7th June 2001) tooth 13 (19th February, 17th September and 8th October 2001) tooth 21 (26th October 2001) tooth 22 (10th September 2001) and tooth 23 (11th April, 7 June and 24th September 2001). According to [Dr B's] record of treatment, every porcelain veneer except for tooth 11 debonded at least once. There is no record of an attempt to determine the cause of debonding, other than to comment that *this could have been caused by [Mr A] not following the instructions carefully as I advised him* ([Dr B's] letter dated 24th April 2004 section marked 'C' page 8). The most common causes of debonding of porcelain veneers are inappropriate preparation of the tooth, accuracy of fit of the porcelain veneer to the tooth, errors with cementation of the porcelain veneer or occlusal problems. In addition, the choice of lute to recement the porcelain veneer for tooth 22 (10th September 2001) tooth 13 (17th September 2001 and 8th October 2001) and tooth 21 (26th October 2001) was not appropriate. The change from a recommended resin based lute (Panavia) to a modified glass ionomer (Fuji Plus) is contraindicated. Because of the lack of tooth surface area for bonding porcelain veneers, resin bonding to an enamel and porcelain interface will provide much greater retention and reinforce the mechanical properties of the porcelain than a glass ionomer based cement.
- ii. Management of the periapical lesion with tooth 22 was not of an adequate standard. While I cannot comment on the size of the periapical radiolucency when [Mr A] first attended [Dr B's] dental office, because the periapical radiograph noted on the 24th November 2000 in [Mr A's] record of treatment was not provided, because of its size, the radiolucency has the radiographic appearance of a cyst, and most of these types of cyst are treated by enucleation after endodontic treatment or extraction of the tooth. Based on the information in [Mr A's] record of treatment, [Mr A] was not advised that this was the recommended treatment for such a lesion.

2. What are the causes of porcelain veneer failure?

The most common causes of debonding of porcelain veneers are:

- a. *Inappropriate case selection:*

Individuals who have untreated caries and/or periodontal conditions or those with occlusal grinding habits are not recommended for porcelain veneers. This is because dental disease processes can advance while porcelain veneer treatment is being provided or teeth that are carious and have porcelain veneers placed on them may be subsequently lost by extraction as a result of advancing dental disease. Individuals with occlusal grinding habits may put forces on their teeth that in some cases exceed the bond strength of the cement to the tooth and porcelain veneer.
- b. If too much of the tooth has been prepared in dentine, or the porcelain veneer is to be cemented to too much composite restorative material, the effectiveness of a

resin lute at bonding a porcelain veneer to a tooth can be significantly reduced compared with bonding to enamel. This is because of the difficulty of preparing composite resin and/or dentine for bonding and the longevity of resin bonding to dentine compared with enamel, especially if the finishing shoulder margins are in dentine. In addition, enamel improves many of the mechanical properties of a tooth. Removal of enamel, increased flexing of a tooth under function, difficulties with dentine bonding and reduced tooth surface area for cementing a porcelain veneer compared with a crown can all contribute to debonding of a porcelain veneer.

c. *Fit of the porcelain veneer to the tooth:*

If there is an error with the impression of the tooth or teeth prepared for porcelain veneers, if there is an error in the technical laboratory in pouring the impression or making the porcelain veneer or if there is an error in seating the porcelain veneer to the tooth during the cementation process, then the porcelain veneer will not accurately fit to the tooth and as a consequence, will be more likely to debond from the tooth than a well fitting porcelain veneer.

d. *Errors with cementation of the porcelain veneer:*

i. This is one of the most common stages of treatment where errors occur that ultimately result in debonding of a porcelain veneer. Because of the limited surface area for retention of a porcelain veneer, compared with a crown, errors at the cementation stage can result in debonding of a porcelain veneer. To maximise the bond of the porcelain veneer to the tooth, the fitting surface of the porcelain veneer is prepared by either the dental technician or the dentist with a silanating agent to facilitate the resin cement bonding to the porcelain veneer. Saliva must be cleaned from the porcelain veneer after the try-in stage; failure to do so will contaminate the silane layer that can significantly reduce the bond of the cement to the porcelain veneer. If the dental technician has not prepared the fitting surface of the porcelain veneer prior to sending the porcelain veneer to the dentist, the dentist should place a silane layer on the porcelain veneer fitting-surface prior to cementing the porcelain veneer.

ii. Once the porcelain veneer has been tried-in and the fit confirmed, the teeth to have the porcelain veneers cemented should be isolated from the rest of the mouth to prevent contamination with saliva after tooth surface preparation with an acid-etch and resin. Tooth isolation can be achieved with cotton rolls but the preferred technique is with rubber dam. If the tooth surface is contaminated with saliva prior to cementation of the porcelain veneer, the bond strength of the porcelain veneer to the tooth will be significantly reduced. Preparation of the tooth or teeth by enamel etching and with resin prior to cementation is also an important stage of preparation.

iii. Choice of cement is also important. Because of the relatively high strength of attachment of resin cement to enamel and silanated porcelain compared with other dental cements, resin cements are recommended for luting porcelain

veneers to teeth. No other cement is recommended for this purpose. For this reason, the choice of lute to recement the porcelain veneer for tooth 22 (10th September 2001) tooth 13 (17th September 2001 and 8th October 2001) and tooth 21 (26th October 2001) with a modified glass ionomer (Fuji Plus) rather than the resin lute (Panavia) that had been used on at least some previous occasions, was not appropriate. The manufacturers of Fuji Plus (GC Corporation, Tokyo, Japan) do not recommend this cement for luting porcelain veneers. The company states in their Glass Ionomer product brochure that Fuji Plus is designed for final cementation of metal and porcelain-fused-to-metal restorations. In addition to providing much greater retention at the enamel and porcelain veneer interface, resin bonding with a resin cement will also reinforce the mechanical properties of the porcelain; other dental cements do not do this. Finally, if there is an error when seating the porcelain veneer to the tooth during the cementation process, then the porcelain veneer will not accurately fit to the tooth and as a consequence, will be more likely to debond from the tooth than a well fitting porcelain veneer.

- e. Occlusal conditions or parafunctional activity can in some cases contribute to debonding of a porcelain veneer, especially if one or more of the previously described situations has occurred. If an individual has heavy biting forces on a tooth or teeth as a result of the occlusal relationship between the maxillary and mandibular teeth or grinds their teeth, the bond force of the porcelain veneer to the tooth may be exceeded so that the porcelain veneer debonds.

3. Given the frequency with which [Mr A's] porcelain veneers failed what should [Dr B] have done?

There is no record of an attempt by [Dr B] to determine the cause of debonding of the porcelain veneers other than to comment that *this could have been caused by [Mr A] not following the instructions carefully as I advised him* ([Dr B's] letter dated 24th April 2004 section marked 'C' page 8). [Dr C] in his letter dated 9th September 2004 (marked 'D' page 12) suggests three reasons why the porcelain veneers were debonding after seeing [Mr A] on 2nd September 2002. The reasons were:

- i. [The porcelain veneers] *were placed over untreated decay*
- ii. [The porcelain veneers] *were not adequately placed into enough enamel to allow the cement to properly hold*
- iii. *On some of these the correct bonding cement had not been used.*

While there is some evidence that the teeth were not prepared as recommended and the teeth were over prepared exposing dentine (see photographs of teeth 13 and 23 marked 'I') there is evidence that [Dr B] cemented porcelain veneers on carious teeth (see photographs of tooth 23 marked 'I') and used an inappropriate lute to cement the porcelain veneers on at least four occasions (Fuji Plus, see [Mr A's] record of treatment marked 'G' page 32). It is also probable that the decision to restore the appearance of teeth 13 to 23 with porcelain veneers at the stage of treatment that [Dr B] did was inappropriate.

After the porcelain veneers had debonded, [Dr B] should have checked the occlusion, ensured all of the cement was removed from the tooth and porcelain veneer, checked the fit of the porcelain veneer to the tooth, cleaned and resilanated the porcelain veneers, ensured that the tooth or teeth were isolated from oral contamination, [and] properly prepared the tooth as recommended by the manufacturers of the resin cement prior to recementing the porcelain veneers with resin cement. There are no records to determine whether [Dr B] carried out all, some or none of these steps prior to recementing the porcelain veneers.

After the porcelain veneers had debonded on two occasions, [Dr B] should have obtained a second opinion from another dentist or from a restorative dentist or prosthodontist. Even if [Dr B] did not obtain a second opinion, he should have at least offered [Mr A] the opportunity to obtain a second opinion on why the porcelain veneers were debonding, and what, if anything could be done to get the porcelain veneers cemented long-term.

4. In relation to [Mr A's] abscess on tooth 22, what was the likely cause of an abscess forming following dental treatment?

The radiographic appearance of the radiolucency on tooth 22 is consistent with the appearance of a periapical cyst because of the size of the radiolucency. The common radiographic appearance of a periapical cyst is a rounded, well circumscribed radiolucency at the apex of a nonvital tooth. Periapical cysts (also radicular or apical periodontal cysts) are described as an odontogenic cyst formed in response to inflammation from a bacterial infection. They are the most common dental cyst, representing over one half of all oral cysts. The cyst arises in response to inflammation caused by bacterial infection of the pulp or in direct response to necrotic pulpal tissue. Most periapical cysts develop at the apex of a root adjacent to the pulp canal opening. The size of the cyst is variable, but generally measure less than 1cm in diameter. Treatment of a periapical cyst depends on a number of variables. Most of these cysts are treated by enucleation after extraction or endodontic treatment of the affected tooth. Extraction or endodontic treatment alone without removal of the cyst may result in persistence and continued growth of the cyst.

5. Was [Dr B's] initial treatment of the abscess appropriate?

Management of the periapical lesion with tooth 22 was not of an adequate standard. While I cannot comment on the size of the periapical radiolucency when [Mr A] first attended [Dr B's] dental office, because the periapical radiograph noted on the 24th November 2000 in [Mr A's] record of treatment was not provided, because of its size, the radiolucency has the radiographic appearance of a cyst, and most of these types of cyst are treated by enucleation after endodontic treatment or extraction of the tooth. Based on the information in [Mr A's] record of treatment, [Mr A] was not advised that this was the recommended treatment for such a lesion. [Dr B] should have at least monitored the size of the radiolucency, and if the radiolucency was not reducing in size, he should have obtained a second opinion from another dentist, endodontist or oral and maxillofacial surgeon. If this was not done, [Mr A] should have been offered the opportunity of a second opinion.

6. If, in answering any of the questions above, you believe that [Dr B] did not provide an appropriate standard of care, please indicate the severity of the departure from that standard. (To assist with this last point some experts approach the questions by considering whether [Dr B's] peers would view his conduct with mild, moderate or severe disapproval.)

Based on the information I have received from the Health and Disability Commissioner, and based on the advice that I have given, in my opinion [Dr B] has not provided [Mr A] with an appropriate standard of care. In my opinion, there are three areas of concern with the standard of care provided:

1. Failure to remove caries and restore a tooth prior to cementing a porcelain veneer. In my opinion, this would be viewed by [Dr B's] peers with severe disapproval. This is because failure to remove and restore a carious lesion prior to fixed prosthodontic treatment is very likely to allow the carious process to advance. If this occurs, more tooth structure will be lost, the pulp could become infected with bacteria resulting in a pulpitis so that endodontic treatment or extraction of the tooth would be required to manage the infection and/or relieve the pain. For the same reason, failure to remove all the caries from a tooth prior to restoring the tooth would, in my opinion, be viewed with severe disapproval by [Dr B's] peers.
2. Failure to recognise a problem or problems with the retention of the porcelain veneers and to treat appropriately would be viewed, in my opinion, with moderate to severe disapproval by [Dr B's] peers. This is because there was an ongoing problem with retention of the porcelain veneers. In this case, all but one of the porcelain veneers are recorded as having debonded on at least one occasion between 15th February 2001 and 29th February 2002.
3. Failure to appropriately advise and treat the cyst associated with tooth 22 would be viewed, in my opinion, with severe disapproval by [Dr B's] peers. This is because a cyst, left inadequately treated, can enlarge, eroding the surrounding bone and potentially compromise the adjacent teeth. There is no record that [Dr B] monitored the size of the periapical radiolucency after completing the root canal treatment for tooth 22 on 7th May 2001 and there is no record that [Dr B] discussed the possible problems with 22 or offered [Mr A] the opportunity of a second opinion from another dentist, or an endodontist or oral and maxillofacial surgeon.

7. Any other matters which in your opinion should be brought to the Commissioner's attention.

In my opinion, [Dr B's] decision to restore teeth 13 to 23 with porcelain veneers before he had adequately managed all of the remaining caries in [Mr A's] teeth and his periodontal condition was treatment that is below the standard expected of a dentist. This is because while the caries is left untreated, the destructive tooth process was advancing, so that later

treatment would require removal of additional tooth tissue and could be more involved, so that a tooth or teeth may require what might have been unnecessary endodontic treatment or dental extraction(s).

SUMMARY

Based on the information provided, [Dr B] appears to have provided inadequate dental care for [Mr A]. [Dr B] has failed to remove caries from teeth prior to restoring them with fixed prosthodontic treatment, has failed to determine the cause of multiple debonding porcelain veneers and treat or advise or refer appropriately and has failed to appropriately follow up, advise or refer [Mr A] in relation to the periapical radiolucency with tooth 22. For these reasons, in my opinion, [Dr B] has provided treatment well below the level reasonably expected of a dentist.

If you have any questions, or require clarification of any comments, please don't hesitate to contact me."

Code of Health and Disability Services Consumers' Rights

The following Right in the Code of Health and Disability Services Consumers' Rights is applicable to this complaint:

RIGHT 4

Right to Services of an Appropriate Standard

- 1) Every consumer has the right to have services provided with reasonable care and skill.*
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Opinion: Breach – Dr B

Under Right 4(1) of the Code Mr A had the right to dental services provided with reasonable care and skill. Dr Lyons described the treatment and follow-up services Dr B provided as inappropriate and inadequate.

Choice of treatment

Mr A acknowledged that when he finally went to a dentist (after many years of neglecting his teeth) he knew that he needed extensive dental treatment which would be expensive. So when he first saw Dr B in November 2002 he intended to have all of his teeth removed and dentures fitted. Dr B persuaded him that his teeth were restorable.

Dr B found caries in 15 teeth and advised Mr A that his six front teeth (11, 12, 13 and 21, 22, 23) could be restored and porcelain veneers fitted to the front of his teeth for cosmetic purposes.

However, this advice was inappropriate. Dr Lyons advised:

“According to [Mr A’s] record of treatment, on 25th January 2001, [Dr B] prepared 6 anterior teeth for porcelain veneers. This was not an appropriate treatment decision. ...

The restorations placed or present in teeth 11, 12, 21 and 22 include mesial and distal surfaces that the porcelain (or ceramic) veneer would be bonded to. Because resin bonding of a porcelain veneer can be up to 40% lower to composite resin restorative material than to enamel, it is recommended that if a composite resin restoration covers greater than 1/2 the mesial or distal labial surface of a tooth that a crown rather than porcelain veneer is the recommended treatment. This is because a crown covers a greater tooth surface area than a porcelain veneer and will be much less likely to debond if the prosthesis is largely bonded to a restorative material rather than tooth tissue.”

I accept Dr Lyons’ advice that, if Dr B intended to restore teeth 11, 12, 21 and 22, then his decision to recommend and place veneers was not an appropriate treatment option for Mr A. In addition to recommending an inappropriate form of treatment, Dr B did not institute an adequate treatment plan.

Planning in sequence

Dr Lyons advised that it is necessary to plan dental treatment in sequence and, in his opinion, Dr B did not appropriately plan Mr A’s dental treatment. According to Dr Lyons:

“Treatment planning and the provision of [Mr A’s] treatment by [Dr B] in the appropriate treatment sequence were both below the standard expected of a dentist.”

Notwithstanding that porcelain veneers were not an appropriate form of treatment, Dr Lyons’ advice is that Dr B should not have added the porcelain veneers without first:

“[a]ppropriately managing all of the carious lesions in [Mr A’s] teeth. This is inappropriate and below the standard of care expected of a dentist. This is because existing dental disease processes have been left untreated, and in some cases, carious lesions in teeth have advanced (see posterior bitewing radiographs dated 27th November 2000 and 2nd September 2002) meaning that later treatment would require removal of more tooth tissue to remove the caries, as well as there being a greater risk of a tooth or teeth requiring endodontic treatment or extraction that may not have been required if the tooth or teeth had been appropriately treated earlier.”

Dr Lyons found overwhelming evidence in Dr B’s records that he could not have adequately planned Mr A’s treatment. This is supported by radiographic evidence that Dr B fixed the veneers to the six front teeth before appropriately treating caries on other teeth in the mouth.

Quality of dental treatment

After examining Dr B's records and Mr A's radiographs Dr Lyons described deficiencies in the quality of Dr B's dental treatment. In his opinion:

“[t]he following teeth restored by [Dr B] appear radiographically to have caries under the restorations: tooth 11 distal (restored 8 December 2000), tooth 21 distal (restored 10th January 2001), tooth 17 distal (restored 4th February 2002) and tooth 26 mesial (restored 21st December 2000 but leaving the carious lesion on the distal surface of tooth 26 that advanced between 27th November 2000 and 2nd September 2002). According to [Dr B's] handwritten plan of restorative treatment, restorations were needed for tooth 12, tooth 13 mesial and distal, tooth 21 mesial, tooth 22 and tooth 23 mesial and distal; these teeth are not recorded in [Mr A's] record of treatment as being restored prior to placement of the porcelain veneers, however teeth 11, 12, 21 and 22 mesial and distal appear to have been restored based on their appearance in the periapical radiographs dated 19th February 2001 and 7th May 2001.

The porcelain veneer preparations on teeth 13 and 23 appear to be over-prepared at the cervical shoulder based on the appearance of these two teeth in the photographs. Over-preparation of a tooth for a porcelain veneer may expose dentine which can have the following complications: tooth sensitivity unless a provisional veneer is placed; difficulty with debonding of the porcelain veneer because resin bonding to dentine is not as strong as resin bonding to enamel in the absence of the retentive surface area of the preparation provided by a crown preparation; and potentially weakens the porcelain veneer because of greater tooth flexing under functional loading of the tooth. Both [Dr C] (letter dated 9th September 2004 marked 'D' pages 12 to 14) and [Dr D] (letter dated 25th September 2002) comment on the quality of the preparation of the teeth for the porcelain veneers.

The shade of the porcelain veneers appears to be unsatisfactory based on the photographs and the letters from [Dr C] (dated 9 September 2004) and [Dr D] (dated 25th September 2002). ...

In my opinion, this [quality of dental treatment] would be viewed by [Dr B's] peers with severe disapproval. This is because failure to remove and restore a carious lesion prior to fixed prosthodontic treatment is very likely to allow the carious process to advance. If this occurs, more tooth structure will be lost, the pulp could become infected with bacteria resulting in a pulpitis so that endodontic treatment or extraction of the tooth would be required to manage the infection and/or relieve the pain. For the same reason, failure to remove all the caries from a tooth prior to restoring the tooth would, in my opinion, be viewed with severe disapproval by [Dr B's] peers.”

Tooth 22

Dr B restored tooth 22 on 12 January, in preparation for veneer restoration on 15 February. Two days later Mr A reported pain in the tooth for which Dr B prescribed antibiotics, undertook a root canal filling and completed the restoration on 7 May 2001.

Dr C, who examined Mr A's tooth after Dr B, found the root canal filling on tooth 22 was too short (confirmed by Dr Bell) and “poorly packed”. It took Dr C little effort to remove the filling, when it should have been quite difficult. He found decay under the filling (Dr D

reported that “there seems to be no attempt to remove the carious dentine and leaking restorations”). Dr C believed that the cavity was probably responsible for the abscess. Dr C re-treated tooth 22 but he was unable to “cure” the abscess despite 18 months of treatment. The cyst and surrounding damage was simply too extensive, and Dr C referred Mr A to an oral surgeon on September 2004. My expert, Dr Lyons, concluded:

“Failure to appropriately advise and treat the cyst associated with tooth 22 would be viewed, in my opinion, with severe disapproval by [Dr B’s] peers. This is because a cyst, left inadequately treated, can enlarge, eroding the surrounding bone and potentially compromise the adjacent teeth. There is no record that [Dr B] monitored the size of the periapical radiolucency after completing the root canal treatment for tooth 22 on 7th May 2001 and there is no record that [Dr B] discussed the possible problems with tooth 22 or offered [Mr A] the opportunity of a second opinion from another dentist, or an endodontist or oral and maxillofacial surgeon.”

I am concerned that Dr B knew that Mr A’s infection had reached the point where it endangered adjoining teeth but he continued with the same treatment regime and did not seek specialist care for Mr A.

Dr Lyons described the quality of Dr B’s dental treatment as a severe deviation from the expected standard of treatment.

Follow-up treatment – debonding

According to the records, Dr B had to re-glue five of the six veneers (except on tooth 11), some on more than one occasion. It appears that Dr B made no effort to identify the reasons why Mr A’s veneers failed so frequently. Dr Lyons explained some of the causes Dr B should have investigated:

“The most common causes of debonding of porcelain veneers are inappropriate preparation of the tooth, accuracy of fit of the porcelain veneer to the tooth, errors with cementation of the porcelain veneer or occlusal problems. ...

Because of the relatively high strength of attachment of resin cement to enamel and silanated porcelain compared with other dental cements, resin cements are recommended for luting porcelain veneers to teeth. No other cement is recommended for this purpose. For this reason, the choice of lute to recement the porcelain veneer for tooth 22 (10th September 2001) tooth 13 (17th September 2001 and 8th October 2001) and tooth 21 (26th October 2001) with a modified glass ionomer (Fuji Plus) rather the resin lute (Panavia) that had been used on at least some previous occasions, was not appropriate. The manufacturers of Fuji Plus (GC Corporation, Tokyo, Japan) do not recommend this cement for luting porcelain veneers. The company states in their Glass Ionomer product brochure that Fuji Plus is designed for final cementation of metal and porcelain-fused-to-metal restorations. In addition to providing much greater retention at the enamel and porcelain veneer interface, resin bonding with a resin cement will also reinforce the mechanical properties of the porcelain; other dental cements do not do this. Finally, if there is an error when seating the porcelain veneer to the tooth during the cementation

process, then the porcelain veneer will not accurately fit to the tooth and as a consequence, will be more likely to debond from the tooth than a well fitting porcelain veneer.”

Dr Lyons explained that an error when taking or pouring an impression may also result in a poor-fitting prosthesis and if the veneer is not correctly “seated” (fixed onto the tooth) while cementing, the veneer will be more prone to debonding. There is evidence from Mr A, Dr C and Dr D that the veneers were not fitted correctly. Mr A complained that the veneers were fitted in “rather an amateur fashion, leaving cement in between my teeth, which makes it impossible to floss. The tops of my veneers don’t even merge with my gums very well.” Dr D described the veneers in the following manner: “These are poorly contoured, all have significant marginal deficiencies and are aesthetically poor with regard to their shade.” Dr C’s photographs of Mr A’s veneers are testament to the poor colour and fit of the veneers.

When asked what Dr B should have done about Mr A’s debonding problem, my advisor commented:

“There is no record of an attempt by [Dr B] to determine the cause of debonding of the porcelain veneers other than to comment that *this could have been caused by [Mr A] not following the instructions carefully as I advised him ...* . [Dr C] in his letter dated 9th September 2004 suggests three reasons why the porcelain veneers were debonding after seeing [Mr A] on 2nd September 2002. The reasons were:

- i. [The porcelain veneers] *were placed over untreated decay*
- ii. [The porcelain veneers] *were not adequately placed into enough enamel to allow the cement to properly hold*
- iii. *On some of these the correct bonding cement had not been used.*

While there is some evidence that the teeth were not prepared as recommended and the teeth were over prepared exposing dentine ... there is evidence that [Dr B] cemented porcelain veneers on carious teeth ... and used an inappropriate lute to cement the porcelain veneers on at least four occasions (Fuji Plus, see [Mr A’s] record of treatment) ... It is also probable that the decision to restore the appearance of teeth 13 to 23 with porcelain veneers at the stage of treatment that [Dr B] did was inappropriate.

After the porcelain veneers had debonded, [Dr B should have checked the occlusion, ensured all of the cement was removed from the tooth and porcelain veneer, checked the fit of the porcelain veneer to the tooth, cleaned and resilanated the porcelain veneers, ensured that the tooth or teeth were isolated from oral contamination, [and] properly prepared the tooth as recommended by the manufacturers of the resin cement prior to recementing the porcelain veneers with resin cement. There are no records to determine whether [Dr B] carried out all, some or none of these steps prior to recementing the porcelain veneers.

After the porcelain veneers had debonded on two occasions, [Dr B] should have obtained a second opinion from another dentist or from a restorative dentist or prosthodontist. Even if [Dr B] did not obtain a second opinion, he should have at least offered [Mr A]

the opportunity to obtain a second opinion on why the porcelain veneers were debonding, and what, if anything could be done to get the porcelain veneers cemented long-term.”

It appears that Dr B was incapable of identifying the cause of Mr A’s debonding problems but did not refer Mr A to a dentist qualified to provide appropriate care. According to my advisor, this would meet with “moderate to severe disapproval of [Dr B’s] peers”.

Summary

In respect of Dr B’s overall dental services, I accept Dr Lyons’ advice that:

“[f]ailure to remove caries and restore a tooth prior to cementing a porcelain veneer ... would be viewed by [Dr B’s] peers with severe disapproval. ...

Failure to recognise a problem or problems with the retention of the porcelain veneers and to treat appropriately would be viewed, in my opinion, with moderate to severe disapproval by [Dr B’s] peers. ...

Failure to appropriately advise and treat the cyst associated with tooth 22 would be viewed, in my opinion, with severe disapproval by [Dr B’s] peers.”

In my opinion Dr B failed to provide dental services to Mr A with reasonable care and skill and breached Right 4(1) of the Code.

Recommendations

I recommend that Dr B take the following actions:

- Reimburse Mr A \$5,250, being the costs incurred in having veneers placed on his six front teeth. A cheque, made out to Mr A, is to be sent to my Office for forwarding to him.
- Provide a written apology to Mr A for breaching the Code. This letter is to be sent to my Office for forwarding to Mr A.

Follow-up actions

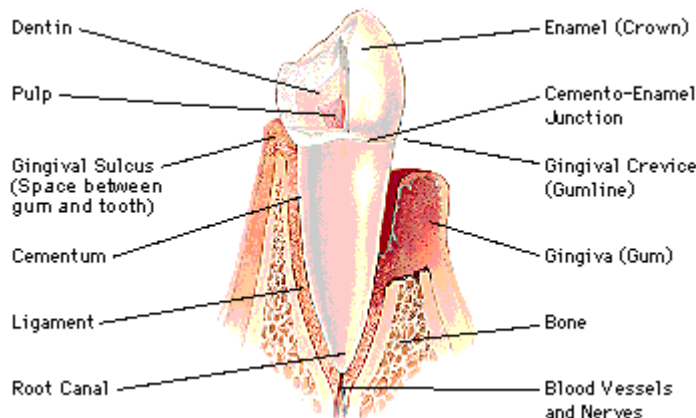
- This matter will be referred to the Director of Proceedings in accordance with section 45(f) of the Health and Disability Commissioner Act 1994 for the purpose of deciding whether any proceedings should be taken.
 - A copy of this report will be sent to the Dental Council of New Zealand.
 - A copy of this report, with details identifying the parties removed, will be sent to the New Zealand Dental Association, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes, on completion of the Director of Proceedings' processes.
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Addendum

On 8 August 2005 a charge alleging professional misconduct was filed with the Health Practitioners Disciplinary Tribunal. On 22 April 2005 the Dentists Disciplinary Tribunal upheld a charge of professional misconduct in relation to the care the dentist provided to another patient (see 02HDC16651), then upheld two further charges of professional misconduct on 1 June 2005 (see 03HDC11122 and 03HDC09604). On 12 August 2005 the Tribunal ordered that his registration as a dentist be cancelled, with effect from 1 September 2005. In light of the previous decisions and the Tribunal's orders, the Director of Proceedings considered that it would not be in the interests of the public or the profession to spend further funds pursuing the dentist in relation to the care he provided to the man, and accordingly withdrew the charge on 4 October 2005.

Appendix 1

Anatomy of a tooth



Glossary of terms

Enamel	hard white outer surface of tooth
Dentine	second layer of tooth under the enamel
Caries	decay
Restoration	restoring tooth by drilling out decay and filling gap with filler
Mesial	part of tooth on side closest to front of mouth
Distal	other side of tooth opposite mesial surface
Occlusal	filling on biting surface of tooth
Class V filling	filling near gum on facial surface of tooth
Bonding	fixing veneer to tooth surface with resin cement (or lute)
Debonding	loss of veneer from tooth
Unfilled resins	plastic type material used in dentistry as filling material or glue
Filler	particles put into unfilled resin to improve qualities of unfilled resin
Lute	cement used to glue two substances together, for example a crown or veneer to tooth (luting (v))
Surface area	overall area of tooth to which a prosthesis is glued
Radiolucency	depth of dark colour seen on radiographs, ie, bone shows white while soft tissue shows grey, cysts/fluids/air show as black cavities
Periapical X-ray	X-ray of specific tooth, including root and surrounding bone area
Bitewing X-ray	X-ray of a small number of teeth (at least eight), used to diagnose cavities between teeth

