

Root Canal? - 'Ugh, rather you than me!'

Since so many people seem to recoil in horror, when they hear some friend or other is having (or has had) a root canal treatment on their tooth, I thought I'd share my own root canal experiences – ancient and modern.

If you shortly expect to have one yourself or are thinking about whether you should take the plunge rather than have your tooth extracted, I hope it helps allay some of the apprehension and/or helps you make a more informed decision.

'Old technology' root canal with experienced private General Dentist A:

In fact the first time I had one back in the 20th century, I didn't even know I was getting one done, until it was well underway.

He had sent me away a week earlier when I had complained of strange sensations in the tooth waking me in the night, as he thought I was probably clenching and so as a first step he thought it best to just adjust my bite which he duly did...very simple procedure.

So when, several days later, biting into my lunchtime sandwich, suddenly caused extreme pain, he arranged to stay

late to see me, even though it was Friday. 'I can't have you in major pain over the weekend' he said.

I felt slightly nervous, as although a regular attender at this practice, it was the first time, I'd ever gone to see a dentist in active pain from a toothache. My husband was even thoughtful enough to phone up and wish me luck just before I left my office.

I didn't really know what to expect... Cyberia - London's first internet cafe had not yet opened and so there was no easy way to research this stuff back then (early 1990s). Maybe that was just as well!

After apologising for my having to come back, he brightly offered to 'open it up' for me... 'we'll get you numbed up first of course'.

This was my first invasive dental treatment for many years and so I braced myself for some injection discomfort but there was no need, it was fine even without topical anaesthetic (numbing gel) which I had been used to receiving as a teenager on the UK NHS.

Eventually he explained he had in fact started off a root canal treatment, the nerve was in the process of dying off. I was

told: 'A healthy nerve would be bleeding more by now' ...lovely thing to hear mid-drilling....not!

I felt no pain whatsoever but there was pressure - it really felt like he was drilling down from the Northern hemisphere all the way to Australia! I did a good job of relaxing but was still concerned pain might strike at any time. You couldn't describe it as fun really.

An hour later, he explained that 'some of the canals have sealed themselves up' but he had 'put something soothing down there' and that I would need to come back for two more appointments one long and one very short.

'Thank you', I said 'I didn't feel a thing'.

'Good, I didn't actually give you that much anaesthetic...sometimes you get branching and you need to top it up though'.

Not sure this is what I really wanted to hear...

The other strange thing is that I had no concept of what had been done - I expected there to be nothing left of my tooth based on all the drilling which had gone on but a quick check in the mirror once home, amazingly showed that the tooth still looked completely normal!

There was a sharp pain once the anaesthetic wore off on the train home, so I took a tablet but the next day all the cold sensitivity had gone forever and I was very pleased.

My brother-in-law said 'you must have a good dentist, those things never work for me, I always end up losing the tooth.'

At the second appointment, at Dentist A's suggestion, I just had anaesthetic squirted down the root canals – no actual injection – my comment that 'I prefer to be numbed up' was, well, just ignored.

So I was a bit miffed to have to signal sensitivity at one point. I put up with it (duh!) as long as I could and then signalled. He topped up the squirted stuff saying 'I hope that makes it ok for you now.' It sort of did although there was one extremely sharp sensation which took me unpleasantly by surprise.

The third appointment was fine but I felt uneasy because of what had happened at the second one. I needn't have worried. He just removed the temporary filling and replaced it with permanent composite, no numbing required or wanted...even by me.

So as you can see, whilst not a totally positive dental experience, it was not a root canal horror story, even back then.

In fact I now reckon it could have been made much more relaxing by simply making me much more profoundly numb at both appointments. It seems ridiculous that he delivered a pain-free first appointment (the one you might have expected to have maybe hurt back then) and yet caused unnecessary pain during the second simply for want of some conventionally delivered anaesthesia.

He nevertheless remained my dentist and 'comfortable tooth cleaner' for many years but I never needed any other invasive treatment.

New technology root canal with experienced private General Dentist B:

It does get better folks. So almost two decades later, I find history repeating itself.

Cold sensitivity develops in another molar tooth which has previously been filled twice by different dentists. The first time was in the 1970's and the second time in the 2000's.

X-rays, cold air-spray, the probe and tooth sleuth (a plastic thing you bite down on each cusp individually to see if the tooth is cracked) all prove inconclusive. So yet again I am sent away but told to return immediately, if/when it gets worse.

Well it takes a few days but eventually I realise the weird pressure build-up sensations and spontaneous twinges in my tooth probably fall into the category of 'getting worse'.

My dentist agrees, we do now need to take action. He explains that the nerve is in the process of dying and the best thing to do (extraction is not even mentioned) is a root canal treatment to save my tooth.

At the **first appointment** this involves opening the tooth up, taking out the nerve to stop the toothache, cleaning out, finding and disinfecting all the canals; and placing a medicated temporary dressing.

I give my verbal consent and as usual, he imperceptibly and very slowly numbs me up. After a couple of minutes I feel outstandingly numb – this is reassuring to me. I am charmed into lying back once again by his kind comment that there is not going to be any pain involved whatsoever.

After waiting a while longer, he then tests gently with the explorer and asks if anything feels sharp. My answer is no, so all good to go.

The next step is putting on the 'rubber dam' which is new to me. It can be a bit fiddly but you are already numb by this point. If appropriate they may quickly clean the tooth in

question before gently anchoring a special clamp with a frame around your tooth and then stretching a piece of rubber over the frame which they then adjust, usually so that only the tooth to be treated is visible in the dentist's work area.

Using the rubber dam provides essential isolation from saliva for the tooth being treated. It also has the benefit for me whilst lying there that I can 'swallow' easily when I need to and be in no danger of accidentally gulping down the treatment debris including old filling material (which could be amalgam or composite) and the bleach later used to disinfect the canals. It also protects me in the unlikely event of there being any dropped instruments/files.

You may also be given the option of using a 'soft bite block' if you find it comfortable and easier on your jaw joint but it is not compulsory. I am offered a soft bite block but it doesn't fit well so I shake my head and he immediately removes it and I do just fine without.

As you have probably realised at least 20 minutes has now passed and I haven't heard a single shrill scary noise as yet.

Next up is probably the **most nerve-wracking moment** for a modern RCT virgin...

but I already trust this guy from previous treatment, so I generously give the benefit of the doubt, when he informs me that he's now going to **open up the tooth** (by drilling into it with the handpiece in case you were still wondering!).

Before doing so, he reiterates that it is not supposed to hurt at all and if I feel anything untoward, I must signal at once by raising my arm. He further reassures me that it is not a problem to top-up the anaesthetic at any point.

So here comes the noise and some vibration....after a couple of seconds, he stops to check that I am indeed totally pain-free, I confirm and he gently continues.

For the next 90 minutes he stays totally calm and apparently happily absorbed in intricately working on my tooth – being an appreciative patient at heart, I am somewhat in awe at the concentration levels required to work good-humouredly in this fiddly environment.

Some anxious patients might prefer more of a 'running commentary' (just ask if you do) but I am happy to let him give most attention to the tooth.

I feel I have the best part of the deal really – the hardest thing I have to do is 'keep my mouth open' and alert him if I need the focus switching back to my comfort.

So what else is involved from my perspective as patient?

Because I am wearing safety goggles with quite a thick rim and because I am tipped back, I really can't see very much at all of what is going on, unless I make a real effort to watch. This means if you don't want to see, you can just relax and close your eyes, or as per my preference, alternate between staring at the boring ceiling and peeking at the proceedings. However at one point, I am so relaxed (= confident there will be no pain), that I find myself beginning to nod off.

Music is playing in the background but at such a low volume, you can only really listen when the handpiece is not whirring.

In practice, an unexpected further benefit of the rubber dam is that it makes me feel it is not 'me personally' being worked on but rather 'just my tooth.' This is because it appears to be at one remove from the rest of my body (no valium required to obtain this effect honestly!).

The minority of the time, it is noisy with the canals being explored using longish L-shaped pointed attachments to the handpiece.

The majority of the time, it is quiet with the assistant handing various tiny files to the dentist (he keeps asking for particular numbers) which he then either attaches to the root canal

system handpiece or more often than not uses by hand to carefully navigate the canals, gently rotating them to feel his way to the apex. Occasionally I am asked to adjust my head position slightly...just like at the hairdresser's.

The level of vibration/pressure sensations is similar to that for a regular filling (especially when the tooth is initially being opened up/old filling material being removed). Unwelcome to some but tolerable to me so long as nothing hurts.

Some posters (and I now agree despite having initially been sceptical) have reported that it is a less fraught and more relaxing experience than a conventional filling, despite taking longer. The difference is I think, the extensive above-mentioned periods of quiet concentrated work.

At various stages (probably no more than 3 times per appointment) a digital x-ray is taken to confirm progress. It has always been my experience from about 1970 lol ...that if the plastic holder for the x-ray is angled slightly wrongly - at best this can feel a bit uncomfortable, at worst it can feel sharp even a tad painful in your mouth.

At frequent intervals a syringe-like nozzle is glimpsed (no needle) which is simply used to squirt the bleach down the canals. The liquid is then suctioned back out.

This alternating process of exploration/shaping and disinfection is repeated *ad finitum* it seems, until suddenly the rubber dam is removed and you are all done!

He pays me the unusual compliment of saying 'I enjoyed that, you have some interesting canals in there' and shows me the x-rays by way of confirmation.

The time has passed surprisingly quickly and I feel a bit euphoric knowing that the toothache has finally been banished. My jaw feels a bit stiff understandably and the local lasts ages longer before it wears off which is fine by me. The tooth sports a temporary sedative filling and looks slightly open still.

I go away having been assured that the **second appointment** will be very similar with more shaping and a substance called **gutta percha** will be placed as the final filling material, topped off with **composite** and that it will eventually be wise to get the tooth crowned, once we are sure the treatment has been a success.

Between appointments (usually 2 weeks but you can wait longer if preferred) I have minimal discomfort, just slight soreness occasionally, almost as if the tooth/gum is bruised.

At the **second appointment**, despite the nerve having already been removed, I am automatically numbed up. It really is, as

was suggested – painstaking work with no stress for me, except for having to keep my mouth open for so long.

The main difference is that the ‘plugger’ is used a lot more, since this is the stage where the gutta percha cones (pieces) are gently pushed down to the bottom of the canals – the goal is to have no gaps.

Towards the end, I can sense some heat coming off something inserted in my tooth – I think this is probably serving to melt the gutta percha?

The last stage is doing the composite filling. This is done very thinly in lots of separate layers and the usual curing light is used multiple times.

My bite is checked on a strip of paper in the usual way.

I am advised to take nurofen for the jaw-joint as soon as I get home and I do so but I feel no need to take a second dose.

This second root canal treatment from Dentist B has proved to have been successful and I have subsequently had the tooth crowned.

So being 20 years on and of the **21st Century**, this second experience has much to recommend it over the first one. Truly zero pain from start to finish, save for the actual toothache

symptoms which caused me to seek help from my dentist in the first place.

What of that first tooth – the one done in the 20th Century by Dentist A you recall?

Well, by not offering to refer me to a specialist endodontist (I had a much lower dental IQ then), when he failed to find all the canals, he effectively gambled with my tooth.

We both got lucky...it gave me very little grief except for occasional ghosting sensations for many many years....however funnily enough...in its 19th year, I noticed it felt high and 'off and on' mild pain was registering in an adjacent tooth.

An x-ray plus tests confirmed an infection was present and highly competent Dentist B put me on antibiotics. He referred me to his endodontist because the tooth needed to be re-treated as it had been imperfectly done originally. He had previously warned me this could happen one day but we had elected to 'leave well alone'.

New technology root canal re-treatment with experienced private Endodontist C:

The endodontist also did a great job – again over 2 long appointments. The only real difference between him and Dentist B was the use of the endodontic microscope at the

first appointment and a general air of confidence as to likely success. I was quoted 85% success rate which apparently is high for a re-treatment.

I was told the only real downside of treatment were if a file broke off in the lower portion of a tooth root, it might be hard or impossible to retrieve. However this was quickly followed up by an assurance that it had been years since he had had such an incident so I probably shouldn't lose any sleep over this remote possibility.

I was also aware of Endodontist C measuring the canals from time to time – he wore a special ring on his finger with a ruler scale on it. My dentist B had used an electronic device instead.

The possibility of endodontic surgery was also discussed. Because one of the roots is very curvy, it may need an apicoectomy in future if an infection returns. He said he had got to the end of all the canals with the files at the first appointment but could not get there all the way with the gutta percha on the curvy one at the second.

Not having an existing relationship with me, Endodontist C and his friendly Assistant constantly kept checking in with me that I was ok during every stage of treatment, including asking for feedback on the comfort of the injections.

You can't speak very well with a rubber dam on, so I mumbled 'uh huh' a lot in conjunction with a thumbs up sign.

Endodontist C's injection technique was different in that it was faster than Dentist B's but he used strong topical anaesthetic on a swab first, meaning the first injection was painless and the second (no topical weirdly) at the bottom side of the tooth with a slightly bent- looking needle was the teeniest brief pinprick. So nothing too scary there.

However many patients – me included – would I think have preferred to have seen less (as per Dentist B) but all equipment including the syringes were laid out on a tray at the side, so you couldn't avoid looking at them really.

I have since had this tooth crowned by Dentist B and it has been asymptomatic for some time.

But don't just take my word for it that a root canal can be a reasonably stress-free experience: Here's what various English-speaking professionals/professional bodies in the field of endodontics say in answer to the question 'Is root canal treatment painful?'

Tony Druttman of London Endo: 'No, because local anaesthetic is used. Local anaesthetic is used at every stage of the procedure to ensure your comfort. Following treatment, the tooth may feel a little tender for a few days, but this can be normally controlled with the same medication that you might use for a headache.'

'There is a great deal of inaccuracy and unfounded fear about root canal treatment. **In professional hands**, this treatment can save teeth that would otherwise be lost - and can do so with care and comfort.

American Association of Endodontists:

'Root canal treatment doesn't cause pain, it relieves it. The perception of root canals being painful began decades ago but with the latest technologies and anaesthetics, root canal treatment today is no more uncomfortable than having a filling placed. In fact, a recent survey showed that **patients who have experienced root canal treatment are six times more likely to describe it as "painless"** than patients who have not had root canal treatment'.

British Endodontic Society:

'With the use of modern techniques, root canal therapy typically involves little or no discomfort. Often there is pain before treatment and endodontic therapy provides relief.'

New Zealand Society of Endodontists:

'Root canal procedure is usually carried out under local anaesthetic. The procedure should not be painful. However, when tissues are very inflamed causing severe toothache, this is the most difficult situation in which to achieve complete relief of pain. In these situations more than one method or technique for administering local anaesthetic may be required to achieve good pain control.'

So from my 3 experiences, what have I learnt about how to make it more likely that you will have a positive experience of root canal therapy?

Learning 1 – Technical expertise and experience of the dentist are key factors in a successful outcome

Some people may have no choice but I personally wouldn't want to let a newly-qualified dentist attempt a root canal treatment on a tooth I really wanted to keep. Molar teeth are the most complex and time-consuming to do properly.

Best to agree up-front (even with an experienced dentist) that if unforeseen problems are encountered, you would like to be referred on to a Specialist Endodontist. (This is assuming you can afford this option)

I get the impression far too many people have root canal treatments fail and teeth extracted, which if done more competently or by a Specialist Endodontist in the first place, could potentially have been saved.

Make sure your dentist enjoys the challenge of root canal treatment – it is very intricate and not for the impatient. Have they done any additional training in endodontic therapy since qualification?

Learning 2 – High concern shown by dentist for patient-comfort will make it easier for you to choose root canal over extraction in future:

- Done competently by someone who cares for the quality of the patient experience, it should be a pain-free procedure with just local anaesthetic. If profound anaesthesia cannot be achieved for whatever reason, it is time to rethink all options including sedation.*
- Bear in mind that advanced numbing techniques for 'hot (infected) teeth' are more likely to be known by*

Specialists and those General dentists who successfully carry out a lot of root canal treatments. They are also more likely to always have in stock the stronger and longer-lasting local anaesthetic types which may be ideally suited to root canal treatments.

- Sedation options could well be a comforting thing to have in the Dental Armoury 'just in case'.
- Don't be afraid to approach a medical doctor for antibiotics, if infection is present. Your dentist can prescribe these too but some are very reluctant to do so.
- It is your right to be numbed for the second appointment even though the nerve is likely already gone. It makes work on the surrounding tissue much more comfortable regardless and gives longer-lasting relief from any discomfort afterwards.
- **Learning 3** – Appropriate equipment such as an **endodontic microscope** is important in more complex cases – especially molar teeth which can have many more canals – and in cases which need to be re-treated.
- I would hope even a general dentist doing root canals would wear **loupes** to obtain some kind of magnification benefit over the naked eye.

- Use of a **rubber dam** will not only protect you from tasting nasty substances, it will make it much more likely that the procedure works. Avoid dentists who are too rushed to use rubber dams.

Learning 4 – It's hard to do quality comfortable root canal work against the clock.

UK NHS dentists are allowed to do root canal work but can they really afford to allocate enough time in their busy schedule to do a high quality job? The answer to this will vary from dentist to dentist.

If sufficient time is allowed for appointments, you should usually only need a maximum of two visits, albeit longish ones (90 minutes per appointment is not at all unusual).

Of course these are just my personal learnings based on my own treatment experiences and internet research.

Why root canal therapy?

Ideally no one would ever need a root canal treatment but for those 'judgemental types' quick to assume this can always be avoided by having optimal dental hygiene and diet, I will quickly list reasons – aside from **deep decay** which has caused a toothache – why a root canal may be needed:

- Trauma/accident
- Restorative treatment e.g. fillings, has a cumulative effect and can ultimately tip the nerve in a tooth over the edge
- Cracked or loose filling can cause decay underneath which is not spotted until it is too late
- Necrosis – the nerve in a tooth can suddenly die off
- Periodontal disease (occasionally)

So if you already have several fillings, you may consider it worthwhile making savings provision for future dental treatment as you age: root canals, crowns, implants – rather than opt for a ‘cheaper’ extraction.

If in the UK, as I see it, you alas at the time of writing, cannot necessarily rely on an NHS dentist to offer optimal dental care in these situations. Going private may be money well-spent, if you then save your tooth for good. It’s an investment in being able to enjoy your food in old age!

If you would like to find out more about root canal treatment and maybe even see a diagram or two, you could try these links:

British Dental Health Foundation

<http://www.dentalhealth.org.uk/faqs/leafletdetail.php?LeafletID=35>

British Endodontic Society

http://www.britishendodonticsociety.org.uk/patient_information.html

American Association of Endodontists

http://www.aae.org/Patients/Endodontic_Treatments/Root_Canals_Myths.aspx

Colgate

<http://www.colgate.com/app/Colgate/US/OC/Information/OralHealthBasics/CheckupsDentProc/RootCanalTreatments/WhatIsRootCanalTreatment.cvsp>

Doctor Spiller

http://www.doctorspiller.com/root_canals.htm

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