Clinical

Headaches eased after restoration of worn smile

Sean Corry describes how restoring teeth damaged by grinding can help to address stress-related symptoms

A 47-year-old community nurse presented with a history of tooth wear and grinding. She was embarrassed by the amount of tooth surface loss and wanted her smile improved. She had lost almost half the height of her clinical crowns and was worried her teeth were going to disappear altogether.

The patient initially came to the clinic when she won a tooth whitening competition we had run on Facebook. I knew her socially and was aware of her concerns. It was only when she stepped into the practice as a patient that she had the courage to have them addressed.

Diagnosis

The patient had a stressful job. After some frank discussion about her lifestyle and sleep patterns, I concluded that the grinding was possibly linked to sleep apnea. She had a history of cardiovascular problems, which tied in with this theory. The patient suffered from daily headaches and had been taking analgesics every morning. She was aware she was clenching and grinding her teeth. She was quite shocked to hear from a dentist that sleep apnea might be the cause of her issues.

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Getting a good night's sleep is fundamental to our health. The more I look into it, the more I am finding that people with tooth wear are also having trouble getting a good night's sleep. Many are overweight and struggle to do much about it, as they don't have the energy. It becomes a vicious circle. I am currently trying to link the practice with the local sleep clinic so that patients can have sleep studies in cases where I suspect sleep disorders. The underlying problem is usually obstructive sleep apnea rather than central sleep apnea. Once diagnosed, we can then make the mandibular appliances to aid sleep.

When I examined the patient, she had quite a lot of tenderness around her lateral and medial pterygoids and masticatory muscles. First tooth contact in centric relation was on her wisdom teeth on the right hand side, with a huge slide forward and to the left to bite on the worn teeth. She had quite a bit of restoration on the back right, from where the slide originated. She had also lost some of her posterior lower teeth. As a consequence, she had over-erupted molars and incisors, and her occlusal plane was low at the back. Her pre-molars almost looked intruded.

Treatment planning

The patient's smile line was uneven, but luckily her gum line did not show much. I concluded that the additional tooth length needed to come incisally and not from a gingival perspective. We discussed a number of treatment options, ranging from orthodontics to restoration with composite, then to possible restoration with porcelain. The patient has not ruled out the option of porcelain veneers at a later date. However, we did dismiss orthodontics on the grounds that there was so much restorative work to be done anyway, it wasn't really going to make a huge difference. It may have helped to align the two central incisors, but this was achieved with composite.

A comprehensive series of photographs were

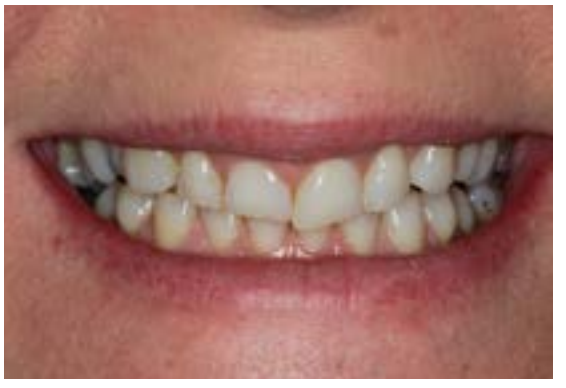


Figure 1: The patient presented with a history of tooth wear and grinding

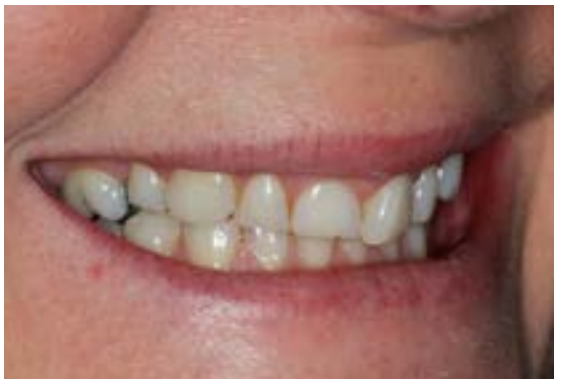


Figure 2: Right hand view

Figure 3: Left hand view

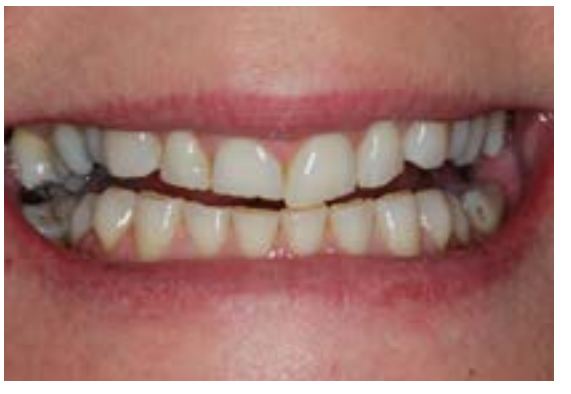
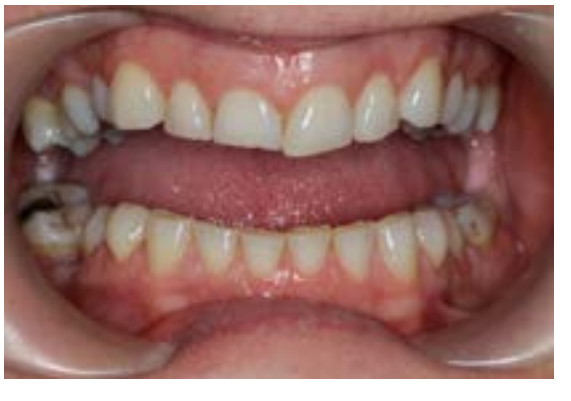


Figure 4: The patient's smile line was uneven



Figures 5 and 6: Incisal edge position

Dr Sean Corry is a full member of the British Academy of Cosmetic Dentistry. He has a special interest in complete smile design with comprehensive occlusal management using minimally invasive techniques. Sean is one of only a handful of dentists in Ireland affiliated to the Dawson Academy. This group of dentists is committed to providing the highest standards of comprehensive dentistry. Sean takes a great interest and pleasure in solving complex dental cases including TMJ dysfunction and symptoms such as headaches, missing teeth and broken and worn teeth.

Clinical

Figure 7: Heraeus Kulzer Venus Diamond CL shade was used to create the incisal edge position and palatal shell structure

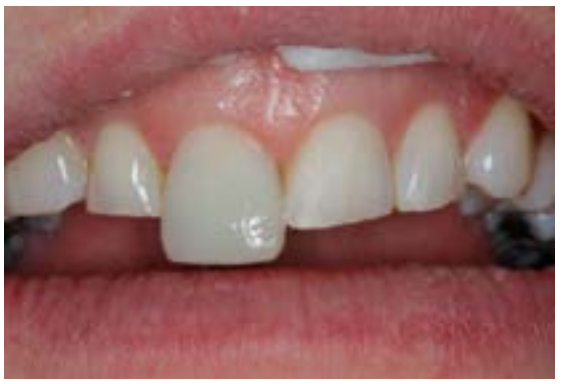


Figure 8: The composite restoration of the anterior teeth was completed in one day, with the upper teeth treated first

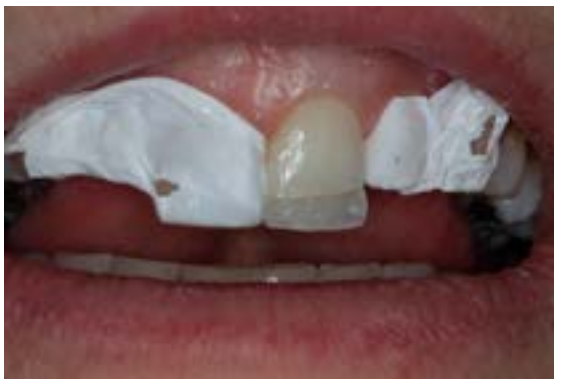


Figure 9: Labially, the teeth were built up by hand

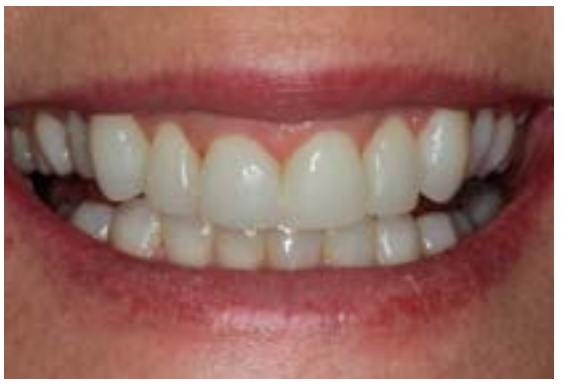


Figure 10: I used Venus Diamond for this case as it best matched the patient's teeth aesthetically

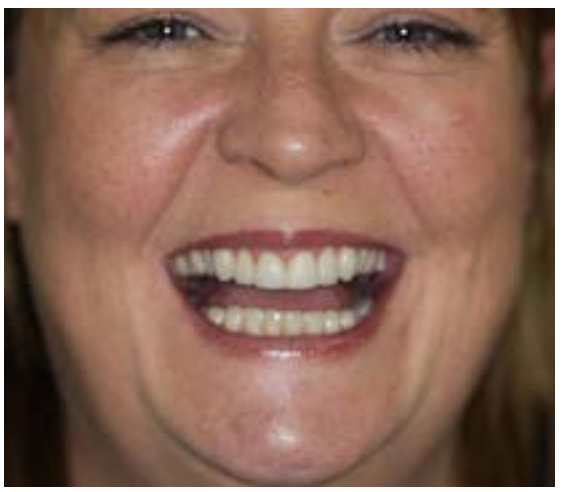


Figure 11: The patient was amazed with what could be achieved with composite alone

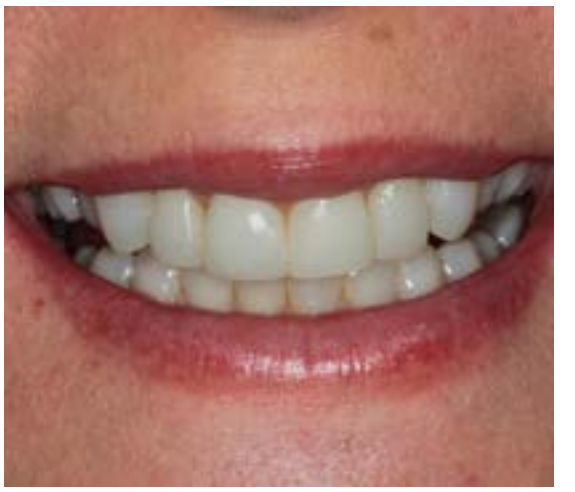


Figure 12: The patient was more than happy with the result

taken, applying the Dawson Academy procedure. This recorded the incisal edge position, the smile line, the anterior-posterior positions of the teeth, and the lateral and medial positions. It helped to evaluate the occlusal plane, and how we were going to marry the occlusal plane, aesthetics and function.

To plan the restoration, I took a set of study models and mounted them on an artex articulator. I located the first contact, which identified the space available to restore the incisors. As per the Dawson procedure, I started with the lower jaw. Using the photographs and eyeballing the model, I waxed up the incisors to level the occlusal plane. I set the tooth structure to where I imagined it had been when the teeth originally erupted.

I then carried out the same process with the upper arch, building up to get an occlusion with equal contacts throughout the arch in centric relation. I aimed to have the teeth back to full anatomical shape. I used wax to remodel and shape the teeth. They were better aligned and functioned with the occlusal plane, which was now level. This took a few hours to complete on the articulator. A silicone stent was made from the wax ups.

Composite restoration

The composite restoration of the anterior region was completed in one visit, with the upper teeth treated first. Heraeus Kulzer Venus Diamond Clear (CL) shade was used to create the incisal edge position and palatal shell structure, with the stent as a guide. Labially, the teeth were built up by hand. I used Venus Diamond for this case as it best matched the patient's teeth aesthetically. I find this material very easy to work with. It is simple to contour, neither too sticky nor too tacky.

The patient was amazed with what had been achieved with composite alone. Her headaches were almost completely eliminated

The patient was then asked to evaluate the result over a few days, from a functional and aesthetic point of view. She came back and had minor adjustments. The deviation had not been addressed at the first treatment appointment, so there was some occlusal modification to be made at the back of her mouth. A wisdom tooth also needed extraction.

At each visit, function, speech and aesthetics were checked. Once the patient was happy with the anterior teeth, the posterior teeth were treated. Any amalgam was removed and all the occlusal surfaces were restored with tooth-coloured composite. All the facings were restored with Venus Diamond CL. When the overall effect was evaluated, the upper premolars looked a little incomplete, so they were also built up with CL.

Result

The patient was amazed with what had been achieved with composite alone. Her headaches were almost completely eliminated. Her occlusal pattern changed a little and occasional headaches continued. After adjusting the occlusion again, that seems to have settled down.

Had the patient agreed, some orthodontic work could have been done to align the gingival heights and level the occlusal plane. This could have been carried out either prior to or after the composite restoration. At this stage, the patient is not interested in having the orthodontics and is more than happy with the result.

The patient is also considering having a mandibular advancement device made. Some of her sensitivity may be due to parafunction, probably when she is trying to get her breath at night. At the moment she is virtually symptomless as far as the temporomandibular joint (TMJ) and headaches are concerned. **D**

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