

In the eye of the beholder

Avinash Sachdev presents a clinical case study.

In the eye of the beholder, even the slightest blemish can have an adverse effect on a person's confidence and, as one of our main focal points when interacting with others, a confident smile can make all the difference.

It's a fair assumption that what one patient considers an aesthetic flaw, another might believe signifies character. This is often the case when patients develop white spots on their teeth – particularly if they occur on the upper anteriors.

When patients present with white spots on their teeth, looking for a way to have them removed, it's usually because they have become self-conscious and feel they are no longer able to smile with confidence.

White spot lesions can be caused by mineral loss under a pseudo-intact surface layer. Cariogenic acids dissolve minerals from the enamel, thereby affecting the refractive index and creating the unsightly white spots. They can also be caused by fluorosis.

Bleaching alone can treat fluorosis, but, depending on the extent of the lesion, a more invasive approach may be necessary to achieve a patient's idea of an aesthetically acceptable end result.

Historically, dentists would mask white spot lesions with restorations, resulting in invasive



Fig 1.



Fig 2.



Fig 3.

treatments. They are a good and predictable long-term solution, however, some patients can be put off with the maintenance associated with these.

Using DMG's Icon, a minimally invasive therapy designed specifically to inhibit the progression of initial, smooth surface and interproximal caries and white spot lesions, we can achieve a natural end result for our patients in a minimally invasive way. The hope is that this first step solution may help treat a select group of patients who can benefit from a different approach. If the patients prefer more aggressive restorations subsequently, they can proceed with other avenues of treatment but, with good case selection, this treatment is beyond comparison.

In the following case, a combination of tooth whitening and Icon therapy was used to treat a patient; she gained her confidence to smile again.

Case study

The patient, a 24-year-old female student presented with white spot



Fig 4.



Fig 5.



Fig 6.

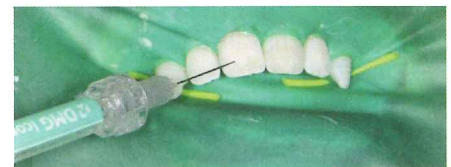


Fig 7.



Fig 8.



Fig 9.

lesions caused by fluorosis on her upper anteriors (figs 1 and 2) which she had had from a very young age. Seeking advice during her adolescence, she had been told that she was simply unlucky ☹



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Fig 10.



Fig 11.



Fig 12.



Fig 13.

to have developed the blemishes and her local dentist suggested air abrasion, pumice and water, or veneers when she was older.

Now that she was a bit older, she decided she wanted 'an improvement' to enable her to smile confidently.

Like many patients, she had spent some time researching on the internet and wanted to avoid the need for local anaesthetic and the loss of tooth tissue associated with porcelain veneers. She found us online and travelled from Southampton to Croydon to see us with her mother who was supportive and encouraged her throughout.

After the initial history and examination we agreed a treatment plan incorporating initial tooth whitening with Enlighten, re-evaluation and Icon therapy if necessary.

I began treatment using the

Enlighten tooth whitening system. I modified the protocol to use 10 per cent over eight weeks, followed by 16 per cent over two weeks. We set the next appointment four weeks later to allow the patient to adjust to the changes and review the situation (fig 3).

At the review appointment it was decided the next step would be to proceed with the Icon therapy.

Step one

Icon resin requires the use of a strong acid, therefore, it is important to isolate the hard tissues from the soft tissues using rubber dam (fig 4).

Step two

The labial surfaces of the teeth needing treatment were coated with Icon-Etch, as shown in figures 5 and 6. Icon-Etch is a 15 per cent hydrochloric acid gel which is applied for two minutes and then washed and dried for 30 seconds to leave the post acid-etch appearance.

Step three

After rinsing and drying thoroughly, the lesion was coated with Icon-Dry Ethanol solution (fig 7). This was done to completely dehydrate the lesion. At this stage, whilst the Icon-Dry is still wet, you can preview the end result of the Icon treatment and instantly see if sufficient depths of etch have been reached to completely mask the white lesions. If this is not the case, step two (etch and rinse) followed by step three (application of Icon-Dry Ethanol for a preview) can be repeated up to a maximum of three times. On this occasion, it was necessary to repeat this stage three times (figs 8 and 9).

Step four

Satisfied with the frosty post-etch appearance, I applied the hydrophobic Icon-Infiltrant resin to the teeth using the Icon Vestibular-Tip (fig 10).

The resin was left to infiltrate

for three minutes. The excess resin was then removed from the labial surfaces using a cotton roll and light cured for 40 seconds per tooth surface (fig 11). Note: no further reduction in the white spot is possible after application of the Icon-Infiltrant resin, which highlights the importance of the preview stage in step three.

Step five

The infiltration step was repeated to ensure that the porous tooth surface was fully topped up with Icon resin. This time the resin only needs to be left to infiltrate for one minute. The excess resin was then removed from the labial surfaces using a cotton roll and light cured for 40 seconds per tooth surface.

Step six

All surfaces were checked for any excess and all the contacts were flossed. Any additional removal of the excess was done with Soflex Disks, which were also used to polish the final restoration.

Step seven

Once satisfied with the results, I removed the rubber dam.

Results

All participants in this case were delighted with the result (figs 12 and 13).

The patient and her mother were extremely happy with the final outcome and the effect it has had. The patient's confidence has soared and she has been transformed from a young girl who was shy and reserved when smiling, to a mini 'tooth snob', observing details in other people's teeth and really valuing her new smile. She followed up her treatment by sending an email containing the following excerpt: "I want to say thank you so much to you and your team for the work you have done on my teeth – I am very pleased about the results (obviously smiling a lot haha)."

The introduction of Icon provides dentists with an elegant solution to the problem of white spot lesions which is minimal, painless and local anaesthetic free.