

CLINICAL

Nervous teenager prefers direct restoration

James Pegg describes the replacement of a failed amalgam restoration using minimal intervention techniques



Figure 1: Examination revealed that a large amalgam restoration in the upper left first molar had fractured



Figure 2: At the margins of the cavity there was a continuous 'rim' of supragingival enamel



Figure 3: The patient was highly satisfied with the tooth-coloured restoration

A 15-year-old girl presented for an initial consultation, complaining that a filling in her back tooth had broken. She was not experiencing any pain, although she was finding the tooth rough and uncomfortable against her tongue. Examination revealed that a large amalgam restoration in the upper left first molar had fractured (Figure 1).

The patient's medical and social histories were unremarkable. Her guardian reported that an amalgam restoration had been placed in this tooth four years previously, with a larger restoration subsequently placed two years later. It was also recorded that the patient's previous dentist had apparently remarked that this tooth had 'weak enamel'.

My recommendation to the patient was that the remainder of the failed filling should be removed. Once the quality of the underlying tooth structure had been assessed, a decision on how to restore the tooth could be made. The patient and her guardian agreed to this proposal.

Various treatment options for replacing the failed restoration were discussed. These included: a new

amalgam restoration; using a composite material with a direct technique; or fabrication of a laboratory-made restoration either in composite, porcelain or gold.

Treatment

At the treatment session, the remainder of the failed amalgam was removed under local anaesthesia. The underlying tooth structure was explored using Examvision 3.5x magnifying loupes. It was noted that at the margins of the cavity there was a continuous 'rim' of supragingival enamel. Some of this was stained, but none appeared carious. The dentine was similarly stained but no soft or carious tissue was seen (Figure 2). This was determined by gentle exploration, drawing the tip of a sharp probe across the surface.

Despite being a strong-minded teenager, the patient was nevertheless nervous about dental treatment. After some consideration and discussion, she decided that a composite restoration with a direct technique was her preferred method of treatment. The reasons were that negligible further tooth preparation would be required and a composite was likely to bond more securely to the underlying tooth, compared with amalgam.

The patient was not prepared to have impressions taken, so an indirect technique was not acceptable. There would be an aesthetic advantage in having a tooth-coloured restoration compared with amalgam or gold. The option for a more invasive treatment method would still be viable, should it be considered appropriate in the future.

Choice of material

I opted for Heraeus Venus Pearl composite to restore the tooth as, in my experience, it is a straightforward

material to use. It has excellent handling characteristics, polishability, aesthetics and universally high patient acceptance. Another factor for choosing Venus Pearl for this type of large posterior restoration is its strength. Shade A3 was selected from the extensive range available.

Rubber dam was applied to isolate the tooth. The enamel margins at 26 were minimally prepared with an NSK air scaler with a diamond tip. The enamel and dentine surfaces were cleaned with an NSK Flash pearl powder/water slurry using an NSK Prophy-Mate neo air polisher.

A Triodent matrix system was applied to the tooth mesially and distally. After etching the enamel for 60 seconds and the dentine for 20 seconds, Ibond Total Etch was coated on to the tooth with a microbrush and light-cured.

Successive increments of Venus Pearl were added to the tooth, using the compule delivery system. Each increment was sculpted into place and light-cured.

After removing the rubber dam the occlusion was checked and adjusted. The restoration was given a final polish with the Venus Supra polishing kit.

Conclusion

Cases like this, with heavy amalgam staining, tend to be quite difficult to mask out. Venus Pearl performs this task exceptionally well. If I were to be self-critical of this case, I could have chosen a slightly darker dentine shade to perfectly match the surrounding tooth colour. However, the patient was highly satisfied with the end result and having a tooth-coloured restoration (Figure 3). She was not only pleased with the aesthetics but also with the minimally invasive process. **D**



James Pegg practises at Linden House Dental Practice in Harrogate and has a special interest in aesthetic dentistry. He has undertaken a variety of postgraduate training courses, including with the Dawson Academy in the Wirral and on Dr Christopher Orr's year-long certificate

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