A magic bullet?

Philip Lewis considers the uses of composite in general dental practice

Composite is a substitute for amalgam and it can be used just about anywhere to good effect. Although it’s wrong to assume that despite manufacturers’ claims, all composites are basically the same and using it will convert an average dentist into a high-profile cosmetic dentist.

Composite is a fantastic material with an abundance of uses, but demands respect at every stage from treatment planning to finishing and polishing. The range of composites available is designed for uses in different clinical situations and the choice of an appropriate material is pivotal to achieving satisfactory results.

Unfortunately, these basic principles are ignored by many colleagues either through choice or due to lack of knowledge of the material, that it is considered too weak, causes sensitivity or staining rapidly after placement, for example. The aim of this article is to illustrate the results the material can produce and give an overview of the steps necessary to gain a good result.

Front teeth

Composite can be used to restore cavities, build-up fractures and mask various imperfections. In non load-bearing situations, a microfill is the material of choice due to its superior aesthetics and lasting surface sheen. In deep cavities it may be appropriate to use a hybrid or even a packable composite as a base. A lining of flowable helps protect the pulp and acts as an elastic buffer to absorb some of the forces of polymerisation shrinkage.

For the restoration of fractures or use as a veneer, several different materials may be built-up together including opaques, various colours, enamel shades and characterisation stains. Layering techniques can create restorations that are almost invisible. However, there’s a huge range of products on the market, but when to use which? Quick, minimally invasive and cost-effective, composite can transform smiles.

Back teeth

Composite can be used for simple fillings, large reconstructions or core build-ups for crowns. Aesthetics in the posterior zone are usually not of the same importance as at the front and packable or hybrid materials may be chosen for their superior strength and abrasion resis-
Careful layering is essential. There are several ways of doing this, but curing in bulk is most probably one of the greatest causes of post-operative pain and may even lead to the necessity for endodontic intervention. Research shows that properly placed posterior composite restorations perform as well as indirect porcelain with the advantages of the former being a single-visit procedure, easily repairable and easily colour-matched.

There are a number of non-negotiable rules that must be observed when using composites. Shades must be taken before tooth preparation. Teeth dry out during treatment and become lighter. Moisture and contamination must be controlled. A rubber dam should be used wherever possible. If moisture cannot be controlled; for example in a deep subgingival box, an alternative restorative should be considered.

Composite must be cured in small increments. Curing in bulk leads to unacceptable polymerisation shrinkage with the additional risk that the depths of the restoration will remain soft— the dreaded ‘soggy bottom’.

Curing lights must be regularly calibrated— insufficient lights will not produce an adequate cure. The curing time must be sufficient. The temptation to save a few seconds at this stage is very ill-advised. The greatest intensity of the curing light is at its centre. Especially at margins, the centre of the light must be utilised to ensure a proper cure and prevent lifting and staining of the edge.

Finishing and polishing must be carried out with care. Again, there are several methods of accomplishing this.

A case in point
This group of upper-left posterior displays problems ranging from marginal breakdown, leakage and fracture. About 90 minutes later, composite cores have been placed in the molars and large fillings in the premolars. Several materials were required, but as aesthetics was not the highest priority for this 73-year-old patient, a single shade was used. The buccal enamel is still intact so using a lighter composite brightens the tooth a little and provides good contrast for clinical re-assessment.

This is not ‘cosmetic dentistry’—it is general dentistry with cosmetics in mind.

A strong option
Composite is a substitute for amalgam. When it is used properly, it can do what amalgam can do and in many cases better. The various types of composite are basically the same. They all belong to the same group of chemicals just as mice and coypus belong to the same group of mammals. It is the subtle differences that are important.

Using composite will convert an average dentist into a high-profile cosmetic dentist. No doubt about that—any dentist producing beautiful, long lasting restorations relatively quickly and easily at moderate cost is sure to become admired in his or her local community. The trick is to know what you’re doing. Getting it wrong confers the opposite effect even more quickly.

So how do we learn?
Like all techniques in dentistry, the use of composite requires formal training and lots of practice. The range of products and their possible applications may seem overwhelming, but help is at hand. The British Academy of Cosmetic Dentistry holds regular seminars and hands-on courses to help colleagues learn both the principles and practicalities of using this exciting material. Lectures and limited attendance courses are available for beginners and those experienced in the use of composites.

Colleagues wishing to know more should attend the Academy’s next annual conference in Edinburgh on November 20 and 21 2009 when eminent speakers from around the world will lecture on a range of cosmetic subjects including the use of composites.

For more information about the annual conference or general details about the BACD, call 020 7612 4166, fax 020 7182 7125, email info@bacd.com or visit www.bacd.com.