

Looking back

Dear Readers,

Do you know what a dovetail is? Do you know what a TMS screw is used for? Both are means of increasing retention, I was taught when I was a student. The former is a cavity extension with the shape of a bird's tail on the palatal side of an anterior tooth to ensure the retention of a Class III restoration. It required the removal of a lot of sound tooth structure just for retention's sake. The latter is a tiny little screw with a self-cutting thread, which was used in the dentin of a tooth (hopefully peripulpal), in order to obtain retention. I placed many of them to anchor Class IV composite restorations or to build up cusps with amalgam on posterior teeth. These screws were feared among students, because if angle or position were wrong, the screw may have ended up in the pulp or in the periodontium or induced a fracture in the tooth, especially if placed too close to the dentin enamel junction.

These are two relicts from the mechanistic era of dentistry. How thrilled we were when we were taught how to bond to enamel! All of a sudden we were able to make really large Class IV restorations. At first, we still used peripulpal screws or pins to be on the "safe" side, until we realized that there was no need for this. Adhesion to enamel perfectly fulfilled the requirements. We were also enthusiastic about sealing fissures for prevention of occlusal caries.

At the beginning of the adhesive era, we still thought mechanistically when it came to cavity preparation

shapes. Credit is due to Simonsen for proposing the preventive resin restoration by taking advantage of adhesive technology, and – later on with Calamia – for bonding ceramics and consequently applying bonded ceramic veneers. Mühlemann's group (Lutz, Lüscher and Ochsenbein) developed cavity designs maximizing the adhesion to enamel. These lines of thought plus adhesion to dentin – which has improved over the years – have led to the concepts of minimally invasive dentistry.

With today's knowledge, we are practicing a radically different dentistry. Repairs and reconstructions are no longer primarily material-driven, but rather defect-oriented. Having realized that bonding ceramics increases their strength, it is now even possible to repair erosive damage by creating full-mouth reconstructions with bonded ceramics and minimal preparation of teeth. Thanks to such approaches, we have nearly simulated the natural concept of the tooth: A strong but brittle enamel bonded to a dentin which has a lower modulus of elasticity. However, what we cannot yet reproduce is the ingenious micromorphology of the dentin enamel junction. Nature is still the best! But the search is on to come close to it with man-made adhesion.

Sincerely yours



JF Roulet