

Fun With Gold Foil

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Like most dentists, I have a special place in my heart just between a prolapsed mitral valve and a partially occluded aorta for that great Italian professor, Giovanni Arcolani of the University of Bologna.

As we all know, Arcolani’s scholarly treatise, *Cirurgia practica*, published in Venice in 1483, dealt extensively with dentistry. If you are not conversant with Italian except for recognizing the first verse of Dean Martin’s *Amore* and have difficulty following the subtitles in the early Gina Lollobrigida films, you might mistake his remarks for a recipe for pasta fagiola. The truth is, Arcolani offered the first documentation of the use of gold foil for filling diseased teeth. It was shortly after that Christopher “Giovanni” Columbus sailed off the edge of the earth in the *Nina*, the *Pinto* and the *Corvair* to discover India wasn’t there, although historians have failed to find any connection between the two events.

Another authoritative surgical treatise authored by Giovanni da Vigo in 1514 also mentions filling cavities with “leaves of gold,” leading some scholars to speculate he was poetically referring to autumn in Milan where it was common practice for local practitioners to stuff fallen leaves triturated with

attar of roses as a protective pulpal base.

From that inauspicious beginning until the year 1983 when the California Dental Board mercifully dropped the requirement for demonstrating proficiency in gold foil placement, no dental student drew an easy breath working with this material. The term “technique sensitive” doesn’t begin to cover the problems with gold foil. Even so, when it was discovered in the early 1850s that an alternative filling technique that involved pouring molten metals directly into prepared cavities was deleterious to the pulp, most reputable dentists used foil.

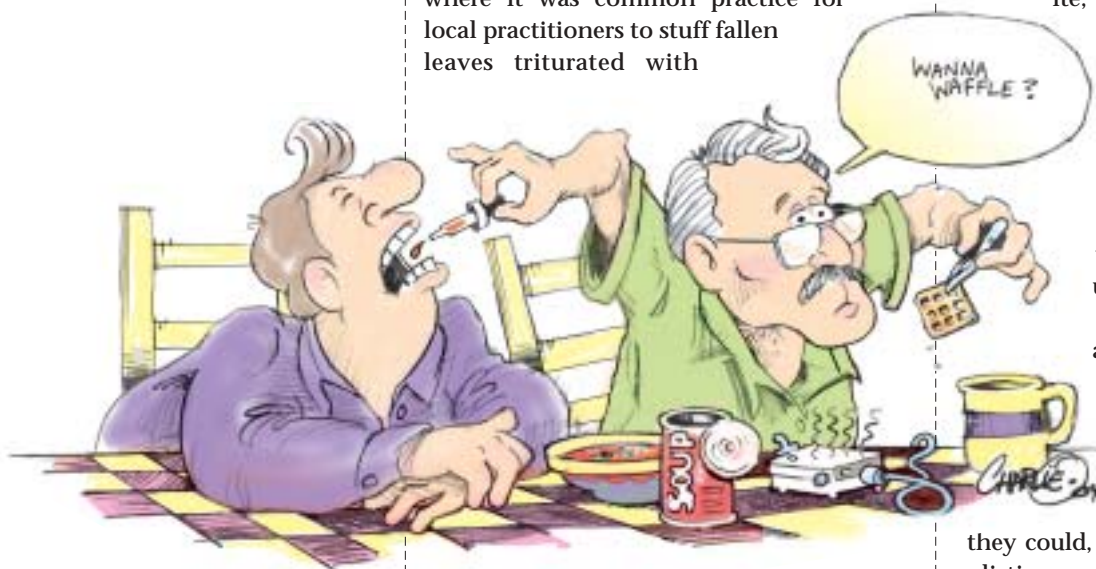
Fast forward to 1940 where at the College of Dentistry, University of Southern California, gold foil had become the Holy Grail for dental students. It was stated often enough to induce bruxism in the most placid of us that if you could place a good Class III foil, you could do anything. Implied was if you couldn’t, a position as ribbon clerk at JC Penney’s was about the most you could aspire to.

It pains me deeply to realize there is a generation of new dentists to whom gold foil is as familiar as red compound, vulcanite, silver nitrate, cocoa butter and silicate cements.

Why these young whippersnapper dentists were spared the Sisyphean task of completing the dozens of required units of foils that my peers and I sweated out for graduation and licensure, is beyond understanding.

For many years an unholy alliance between the dental schools, the State Board of Dental Examiners and the International Gold Foil Cartel mandated that candidates for licensure demonstrate that

they could, by God, pound in a gold foil a sadistic examiner couldn’t flip out after



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repeated tries. The requirement held even if the candidate was destined to become a member of one of the specialties, or a salaried employee at an Acme Smile & Breath Clinic franchise where gold foil was as foreign as hen's teeth.

There has never been a recorded instance of a patient actually requesting a gold foil be placed in his or her mouth, especially if the procedure had been explained beforehand. The gold foil discipline became an exercise in precision, of perfecting hand-to-eye coordination and a short cut to gastric ulcers. It was like boot camp or a fraternity initiation and we emerged the better for it, we lied for years after.

Our introduction to foil came in 1940 when we were issued a number of 5-inch by 5-inch sheets of extremely thin, delicate gold. We were to carefully roll these sheets into pellets about the size of a grain of rice. The gold was so fragile that if you breathed on it, or even stared at it too long, it would suddenly vaporize into individual atoms. It would take 5,000 of these sheets rolled up in a ball to be the size of a baby pea. Hitler's Panzer divisions were rolling through Europe, but that was a minor distraction. We were rolling through foil under the hooded, watchful gaze of a red-striped overseer.

After painstakingly concocting several thousand of these foil pellets, they were treated with ammonia fumes so they wouldn't stick together. Cold welding was a plus feature of gold foil, calculated to offset its other intractable frustrations. Those of us still displaying some visual acuity and able to withstand the orthopedic havoc resulting from prolonged pellet rolling, were allowed to learn the secret of cavity preparation.

There's one thing about gold foil — it exhibits an almost manic determination to return to its natural state and decamp to Ney's or Sutter's Mill, or wherever it came from. You put it in a cavity, it falls out. You put it in again, it falls out again. So the drill was retention

points, undercuts and, if the instructor wasn't looking, methylmethacrylate, commercially known as Krazy Glue.

All students were issued instruments (single-ended, of course) to accomplish this retention-making. The only other use for this armamentarium was inscribing the Lord's Prayer on the head of a pin. We were to learn later that there was a bigger market for the latter than for the foil restoration it was designed to facilitate.

In order to place a Class II or a Class III foil, it was necessary to spread teeth apart so when the task was done, interproximal contact would be intact. A device perfected by Tomas de Torquemada, CEO of the Spanish Inquisition, was used to separate teeth. The comfort level of this procedure was comparable to passing a largish kidney stone, only less fun.

Then came the actual foil placement. You needed to start this in the morning, because it was an all day job.

After approximately 50,000 condenser taps, the gold begins to take some sort of form. The instructor comes by followed by his entourage of crazed students. He demonstrates that your retention points are not up to snuff by taking a sharp explorer and flipping your handiwork out on the floor. retinue. Somebody titters.

This causes the patient to mumble through his rubber dam that he would like an aspirin or some morphine. The 50,000 blows at right angles to his tooth are beginning to take their toll.

Finally, the filling is complete. Sometimes this is the same day you started, which is desirable, otherwise you have to take the patient home and feed him via an eyedropper. "How's that?" you ask, handing the patient a No. 4 plain surface mouth mirror.

He lifts a slab of numb upper lip and peers at your masterpiece.

"Huh. Is it always going to look like that?" he demands.

"Like what?"

"Like I got a piece of spinach between my teeth. How come I can't have a white filling?"

You convince him that the eighth-inch gap between his teeth will close up by summer and he'll hardly notice the new filling except when he smiles. You give him a referral to an endodontist.

Well, that was then and this is now. I confess I haven't put in a gold foil in 55 years. I have four foils in my own teeth deftly placed there by fellow students short on units and long on confidence. I almost died. I consider that if these were done under present day fees, I'd have over \$2,000 worth of work to show for the trauma. Each one is as good today as the day it was placed, which is more than I can say for myself. **CDA**