How valuable are comfortable, attractive, functioning dentures? That question was posed last month in Part 1 of this article, and the answer was—invaluable. Last month, this patient’s pre-operative condition was outlined along with the treatment planning, evaluation, and tooth selection phases. The patient’s existing dentures—a 35-year-old maxillary denture and a 12-year-old mandibular denture—are shown in Figs. 11a and 12a on page 104. Here, the case presentation resumes with the third appointment, which takes place after base plates and wax rims are fabricated in the lab from the final impressions. The base plates and wax rims are used extensively for the clinical records.

**Third visit: Clinical records**

The upper wax rim is inserted, and the resting upper lip line and lip support are evaluated. The posterior occlusion of the maxillary rim should be close to parallel to the Camper’s line—the line connecting the tragus of the ear to the ala of the nose. The anterior horizontal occlusal plane is evaluated and should be parallel to the line drawn between the eyes. The ideal gum line is at the upper lip line. This is scribed in the wax rim while the patient gives the biggest, broadest, and highest smile.

The midline can usually be determined by following the natural location of the maxillary labial frenum. However, this frenum may not be at the facial midline. Although the incisive papilla and maxillary labial frenum are good intraoral indicators, I mark the midline by hanging dental floss down the midline of the patient’s face, between the eyes and the nose. I find it more helpful to visualize once the two central incisors are set in wax (Fig. 1).

It is best to make any modifications at chairside. This is also a good time to check the alignment as well as the width, length, shape, and color of the selected six maxillary anterior teeth.

**Correcting vertical dimension**

There are certain recurring relationships between fixed facial landmarks and the proportions of the lower half of the face. A caliper is used to determine the vertical dimension at rest, from the fixed points of the external auditory meatus of the ear to the outer orbital rim of the eye (Fig. 2). The closed vertical dimension in maximum intercuspation is then calculated by subtracting 3 mm for the freeway space. While the patient has his old dentures, a great set of dentures can improve patient appearance and lifestyle. Here are some tips for ensuring the highest esthetics, function, and comfort.
dentures in his mouth, I asked him to close into maximum occlusal contact. Comparing this to the previous measurement, there was a 7-mm loss of vertical dimension (Figs. 3 & 4).

Gothic arch tracing
An excellent method of capturing a centric-relation bite registration is through a Gothic Arch Tracing device. First, the lower chest is measured to locate the central point. The lower plate is attached with compound to the recording base. A tracing plate is then attached to the upper record base with wax. The plate is aligned along the vertical plane and secured with compound wax. The tracing plate is coated with a black marker. When possible, I like to do the Gothic Arch Tracing with the six front teeth set in wax for greater accuracy (Fig. 5). This can help better visualize the final result.

If necessary, this is a good time to reset or choose different teeth. The ball bearing pin is adjusted to the approximate closed vertical dimension. I let the patient tell me when it feels right (Fig. 6). When in doubt, I like to open it another 0.5 mm. Once the proper vertical dimension is chosen, both for esthetic proportions and for comfort, the patient is instructed to move the jaw in excursive movements, especially lateral and protrusive movements.

Following all of the appropriate mandibular movements, the ball bearing has marked an arrow-shaped figure into the upper plate. A plastic square with a circular cutout is placed over the arrow tip and luted to the plate. The assembly is placed back in the mouth (Fig. 7), and the ball bearing is now set with in the plastic square. Genie rapid-setting (60 seconds) bite registration material (Sultan Healthcare, www.sultanhealthcare.com) is syringed into the assembly to capture centric relation. The bite is completely syringed to lock in the bite relationship between the upper and lower arches.
Posterior teeth
The majority of complete denture patients are older adults. Cuspal height should follow that natural progression of wear to a lower or less steeply inclined cuspal plane. I generally use teeth with a 10° cuspal inclination. Posterior teeth that are too steep can place undue stress on the ridges as well as the temporomandibular joint. This can contribute to sore spots, as well as temporomandibular dysfunction.

Fourth visit: Wax try-in
The wax try-in is the critical point in the denture process. We must evaluate the denture in terms of fit, stability, phonetics, esthetics, and the occlusion (Fig. 8). We test for the consonant sound of “S”, “SH”, “T”, “N”, “L”, “CH”, “J”, “K”, “F”, and “V”. This is the time for everyone—the doctor, the dental team, and most importantly, the patient—to evaluate everything from the tooth position, tooth shape and length, gumline, color, the way the denture feels against the lips, cheeks and tongue as well as the “feel” of the occlusion. Having a family member present always helps. I generally ask a man to bring his wife or daughter. For a woman, I suggest they bring a sister, a daughter, or a best friend. This is critical. A good-looking denture always fits better. Once the wax try-in is approved for the best fit and bite, I take a new bite registration (Fig. 9). With the bite registration in place, I take wash impressions with light-body material in the wax try-in plates (Fig. 10). I use these additional records for a clinical re-base and remount. Remember—“dentures can’t be too tight, and the bite can’t be too good.”

Before processing any removable prosthesis, I always give the patient the option of having a duplicate, or “identical twin.”
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made at a reduced fee. This helps prevent unexpected emergencies that may result in no teeth. Also, this duplicate proves convenient when the original is being relined at the laboratory. Patients will never have to go without a smile. Like most of my patients, he appreciated this extra service.

Fifth visit: Delivery

At the seating appointment, we compare the old dentures (Figs. 11a & 12a) with the new dentures (Figs. 11b & 12b). The new dentures are tried in for esthetics, speech, and comfort. The patient should be aware that the delivery of the new denture is not the end, but only part of the process. Adjustments to the inside of the denture and/or the teeth are to be expected. Every adjustment has the potential to loosen the denture. It’s better to see the patient more times for small adjustments, rather than fewer times for major adjustments. We can alleviate any potential sore spots through the use of pressure disclos-
ing paste and selective "buffing."

A well-made denture should have a bilaterally balanced linguualized occlusion. This type of occlusion will better centralize the forces over the ridge, improve chewing function, and stabilize the dentures. I evaluate the bite at first by using horseshoe-shaped articulating paper. Initially, the patient bites into the paper with an open and closing motion of the mandible. Adjustments are made until uniform markings are seen on the lower buccal cusp tips, upper lingual cusp tips, and the central grooves of both upper and lower posterior denture teeth. Very heavy anterior contact will cause tipping and unseating, especially of the upper denture. The lower denture should not interfere with the tongue and its movements.

Because I took light-body impressions and a second bite registration at the wax try-in to clinically remount and then equilibrate, adjustments were minimal. We go over our “New Denture Instructions” from www.denturewearers.com and give them to the patient. Multiple follow-up visits are to be expected. The patient’s new dentures can be seen in Figs. 13 and 14.

Remember, new dentures can be cosmetic dentistry at its very best. They restore form, function, and speech. They improve appetite, nutrition, and health. They exude self-confidence, personality, and beauty. They transform the lives of millions of people socially, emotionally, physically, and esthetically. Although sometimes frustrating, these prostheses are both rewarding and attainable with a solid understanding of the basics.

References