The evolution of sinus lift techniques

By Andrew Kelly, DDS

When Dr. O. Hilt Tatum performed his sinus lift technique in 1975, I wonder if he had any idea of how it would evolve or the controversies that would surround this procedure. I can say there exist as many techniques as there are opinions on how the procedure should be performed and who should perform it.

A sinus lift is a surgery that adds bone to the maxilla in the area of the molars and premolars. It’s sometimes called a sinus augmentation. The bone is added between the floor of the maxillary sinus and the Schneiderian membrane. To make room for the bone, the sinus membrane has to be moved upward, or “lifted.” Any dentist who is trained to do it can do a sinus lift. Tatum, the originator of the procedure, is a general dentist.

There are two basic methods for performing the sinus lift technique. The first method is the Lateral window technique, which was described by Boyne in 1960. The procedure was used by Boyne to achieve an optimal intercrestal distance needed for denture making.

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The first method is the Lateral window technique. In 1994, Summers, who was in pursuit of a less invasive sinus lift method, started floor compression, Summers started floor dilatation of the sinus, thus increasing the length of his implants. When the technique was first introduced, there were two significant disadvantages that limited this technique’s indications.

The first disadvantage was the limited heath that the sinus could be raised. Initially, Summers was able to successfully lift the membrane 1–3 mm. The second limitation was the inability to directly visualize the membrane. The technique was initially performed with convex osteotomes by using the sinus floor to lift the membrane. After the membrane is lifted, bone grafting material is the used to hydraulically lift the Schneiderian membrane. Today, using modern technologies such as piezoelectric surgery, practitioners provide state-of-the-art alternative bone grafting materials available that don’t require a second surgical site and provide very similar results to autogenous bone. So one question that is being asked a lot lately is: Is autogenous bone the “gold standard”? The jury is still out, but there is a lot of evidence out there that suggest it is not. Only time will tell.

The lateral window technique is being used more sparingly these days. There are several approaches available that have allowed us to effectively raise the Schneiderian membrane 5–7 mm or more routinely and place the implant simultaneously, as long as we have enough crestal bone to get primary stability. This technique is safer for the patient, and it reduces the chance that an infection will occur.

Lastly, with the evolution of safer and more predictable sinus lift methods, more dentists are able to successfully perform the procedure, which allow more patients to have implants in the posterior maxilla.

Implant dentistry is a discipline that requires the practitioner to possess a wide range of skills. As the technology improves, it will open the door to a wider dissemination of implant dentistry into our society and help to increase the quality of life for many patients that need our help. Technology will never replace knowledge and skill; however, it can and will lower the learning curve and help more practitioners provide state-of-the-art services to their patients.

About the author

Andrew Kelly, DDS, is a graduate of California State University, Long Beach, and received his DDS degree from Howard University. He received his advanced implant training from the Core-Vent Institute in Encino, Calif., and the Medical College of Georgia in Augusta, Ga. He is a diplomate of The American Board of Oral Implantology/Implant Dentistry, a fellow of the AAID, a fellow of the AGD and a member of the ECOI, the AAID and the AD. Kelly owns and operates Dental Center of the Carollinas, a private cosmetic and implant dental practice. He is also co-owner of Dental Office Solutions, a dental staffing, consulting and training center for cosmetic and implant education.

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